

CIS Microsoft Windows Server 2016 STIG Benchmark

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Overview

This document provides prescriptive guidance for establishing a secure configuration posture for Microsoft Windows Server. To obtain the latest version of this guide, please visit <https://www.cisecurity.org/cis-benchmarks/>. If you have questions, comments, or have identified ways to improve this guide, please write us at feedback@cisecurity.org.

Intended Audience

The Windows CIS Benchmarks are written for Active Directory domain-joined systems using Group Policy, not standalone/workgroup systems. Adjustments/tailoring to some recommendations will be needed to maintain functionality if attempting to implement CIS hardening on standalone systems or a system running in the cloud.

Consensus Guidance

This benchmark was created using a consensus review process comprised of subject matter experts. Consensus participants provide perspective from a diverse set of backgrounds including consulting, software development, audit and compliance, security research, operations, government, and legal.

Each CIS benchmark undergoes two phases of consensus review. The first phase occurs during initial benchmark development. During this phase, subject matter experts convene to discuss, create, and test working drafts of the benchmark. This discussion occurs until consensus has been reached on benchmark recommendations. The second phase begins after the benchmark has been published. During this phase, all feedback provided by the Internet community is reviewed by the consensus team for incorporation in the benchmark. If you are interested in participating in the consensus process, please visit <https://workbench.cisecurity.org/>.

Typographical Conventions

The following typographical conventions are used throughout this guide:

Convention	Meaning
<code>Stylized Monospace font</code>	Used for blocks of code, command, and script examples. Text should be interpreted exactly as presented.
Monospace font	Used for inline code, commands, or examples. Text should be interpreted exactly as presented.
<i><italic font in brackets></i>	Italic texts set in angle brackets denote a variable requiring substitution for a real value.
<i>Italic font</i>	Used to denote the title of a book, article, or other publication.
Note	Additional information or caveats

Assessment Status

An assessment status is included for every recommendation. The assessment status indicates whether the given recommendation can be automated or requires manual steps to implement. Both statuses are equally important and are determined and supported as defined below:

Automated

Represents recommendations for which assessment of a technical control can be fully automated and validated to a pass/fail state. Recommendations will include the necessary information to implement automation.

Manual

Represents recommendations for which assessment of a technical control cannot be fully automated and requires all or some manual steps to validate that the configured state is set as expected. The expected state can vary depending on the environment.

Profile Definitions

The following configuration profiles are defined by this Benchmark:

- **Level 1 - Domain Controller**

Items in this profile apply to Domain Controllers and intend to:

- be practical and prudent;
- provide a clear security benefit; and
- not inhibit the utility of the technology beyond acceptable means.

- **Level 1 - Member Server**

Items in this profile apply to Member Servers and intend to:

- be practical and prudent;
- provide a clear security benefit; and
- not inhibit the utility of the technology beyond acceptable means.

Items in this profile also apply to Member Servers that have the following Roles enabled:

- AD Certificate Services
- DHCP Server
- DNS Server
- File Server
- Hyper-V
- Network Policy and Access Services
- Print Server
- Remote Access Services
- Remote Desktop Services
- Web Server

- **Level 2 - Domain Controller**

This profile extends the "Level 1 - Domain Controller" profile. Items in this profile exhibit one or more of the following characteristics:

- are intended for environments or use cases where security is paramount
- acts as defense in depth measure
- may negatively inhibit the utility or performance of the technology

- **Level 2 - Member Server**

This profile extends the "Level 1 - Member Server" profile. Items in this profile exhibit one or more of the following characteristics:

- are intended for environments or use cases where security is paramount
- acts as defense in depth measure
- may negatively inhibit the utility or performance of the technology

- **Next Generation Windows Security - Domain Controller**

This profile contains advanced Windows security features that have specific configuration dependencies, and may not be compatible with all systems. It therefore requires special attention to detail and testing before implementation. If your environment supports these features, they are highly recommended as they have tangible security benefits. This profile is intended to be an optional "add-on" to the Level 1 or Level 2 profiles.

- **Next Generation Windows Security - Member Server**

This profile contains advanced Windows security features that have specific configuration dependencies, and may not be compatible with all systems. It therefore requires special attention to detail and testing before implementation. If your environment supports these features, they are highly recommended as they have tangible security benefits. This profile is intended to be an optional "add-on" to the Level 1 or Level 2 profiles.

- **Level 3 - STIG Domain Controller**

This profile includes recommendations from the CIS Level 1 profile, as well as recommendations that differ from the CIS Windows Server 2016 Benchmark or are unique to the DoD Microsoft Windows Server 2016 Security Technical Implementation Guide. This profile does not include recommendations in the CIS Level 2, BitLocker or NextGeneration profiles. Those setting will have to be applied and assessed separately if they are applied to the server.

Items in this profile exhibit one or more of the following characteristics:

- are intended for environments or use cases where following STIG security is paramount.
- acts as even greater defense in depth measure.
- may negatively inhibit the utility or performance of the technology.

- **Level 3 - STIG Member Server**

This profile includes recommendations from the CIS Level 1 profile, as well as recommendations that differ from the CIS Windows Server 2016 Benchmark or are unique to the DoD Microsoft Windows Server 2016 Security Technical Implementation Guide. This profile does not include recommendations in the CIS Level 2, BitLocker or NextGeneration profiles. Those setting will have to be applied and assessed separately if they are applied to the server.

Items in this profile exhibit one or more of the following characteristics:

- are intended for environments or use cases where following STIG security is paramount.
- acts as even greater defense in depth measure.
- may negatively inhibit the utility or performance of the technology.

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This benchmark exemplifies the great things a community of users, vendors, and subject matter experts can accomplish through consensus collaboration. The CIS community thanks the entire consensus team with special recognition to the following individuals who contributed greatly to the creation of this guide:

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Recommendations

1 Account Policies

This section contains recommendations for account policies.

1.1 Password Policy

This section contains recommendations for password policy.

1.1.1 (L1) Ensure 'Enforce password history' is set to '24 or more password(s)' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines the number of renewed, unique passwords that have to be associated with a user account before you can reuse an old password. The value for this policy setting must be between 0 and 24 passwords. The default value for Windows Vista is 0 passwords, but the default setting in a domain is 24 passwords. To maintain the effectiveness of this policy setting, use the Minimum password age setting to prevent users from repeatedly changing their password.

The recommended state for this setting is: 24 or more password(s).

Rationale:

The longer a user uses the same password, the greater the chance that an attacker can determine the password through brute force attacks. Also, any accounts that may have been compromised will remain exploitable for as long as the password is left unchanged. If password changes are required but password reuse is not prevented, or if users continually reuse a small number of passwords, the effectiveness of a good password policy is greatly reduced.

If you specify a low number for this policy setting, users will be able to use the same small number of passwords repeatedly. If you do not also configure the Minimum password age setting, users might repeatedly change their passwords until they can reuse their original password.

Impact:

The major impact of this configuration is that users must create a new password every time they are required to change their old one. If users are required to change their passwords to new unique values, there is an increased risk of users who write their passwords somewhere so that they do not forget them. Another risk is that users may create passwords that change incrementally (for example, password01, password02, and so on) to facilitate memorization but make them easier to guess. Also, an excessively low value for the Minimum password age setting will likely increase administrative overhead, because users who forget their passwords might ask the help desk to reset them frequently.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to 24 or more password(s):

Computer Configuration\Policies\Windows Settings\Security Settings\Account Policies\Password Policy\Enforce password history

Default Value:

24 passwords remembered on domain members. 0 passwords remembered on stand-alone servers.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73315
Rule ID: SV-87891r1_rule
STIG ID: WN16-AC-000040
Severity: CAT II

CIS Controls:

Version 7

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

16.5 Encrypt Transmittal of Username and Authentication Credentials

Ensure that all account usernames and authentication credentials are transmitted across networks using encrypted channels.

1.1.2 (L1) Ensure 'Maximum password age' is set to '60 or fewer days, but not 0' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting defines how long a user can use their password before it expires.

Values for this policy setting range from 0 to 999 days. If you set the value to 0, the password will never expire.

Because attackers can crack passwords, the more frequently you change the password the less opportunity an attacker has to use a cracked password. However, the lower this value is set, the higher the potential for an increase in calls to help desk support due to users having to change their password or forgetting which password is current.

The recommended state for this setting is 60 or fewer days, but not 0.

Rationale:

The longer a password exists the higher the likelihood that it will be compromised by a brute force attack, by an attacker gaining general knowledge about the user, or by the user sharing the password. Configuring the Maximum password age setting to 0 so that users are never required to change their passwords is a major security risk because that allows a compromised password to be used by the malicious user for as long as the valid user has authorized access.

Impact:

If the Maximum password age setting is too low, users are required to change their passwords very often. Such a configuration can reduce security in the organization, because users might write their passwords in an insecure location or lose them. If the value for this policy setting is too high, the level of security within an organization is reduced because it allows potential attackers more time in which to discover user passwords or to use compromised accounts.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to 60 or fewer days, but not 0:

Computer Configuration\Policies\Windows Settings\Security Settings\Account Policies\Password Policy\Maximum password age

Default Value:

42 days.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73317
Rule ID: SV-87969r2_rule
STIG ID: WN16-AC-000050
Severity: CAT II

CIS Controls:

Version 7

16.10 Ensure All Accounts Have An Expiration Date

Ensure that all accounts have an expiration date that is monitored and enforced.

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

16.5 Encrypt Transmittal of Username and Authentication Credentials

Ensure that all account usernames and authentication credentials are transmitted across networks using encrypted channels.

1.1.3 (L1) Ensure 'Minimum password age' is set to '1 or more day(s)' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines the number of days that you must use a password before you can change it. The range of values for this policy setting is between 1 and 999 days. (You may also set the value to 0 to allow immediate password changes.) The default value for this setting is 0 days.

The recommended state for this setting is: 1 or more day(s).

Rationale:

Users may have favorite passwords that they like to use because they are easy to remember and they believe that their password choice is secure from compromise. Unfortunately, passwords are compromised and if an attacker is targeting a specific individual's user account, with foreknowledge of data about that user, reuse of old passwords can cause a security breach. To address password reuse a combination of security settings is required. Using this policy setting with the Enforce password history setting prevents the easy reuse of old passwords. For example, if you configure the Enforce password history setting to ensure that users cannot reuse any of their last 12 passwords, they could change their password 13 times in a few minutes and reuse the password they started with, unless you also configure the Minimum password age setting to a number that is greater than 0. You must configure this policy setting to a number that is greater than 0 for the Enforce password history setting to be effective.

Impact:

If an administrator sets a password for a user but wants that user to change the password when the user first logs on, the administrator must select the User must change password at next logon check box, or the user will not be able to change the password until the next day.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to 1 or more day(s):

Computer Configuration\Policies\Windows Settings\Security Settings\Account Policies\Password Policy\Minimum password age

Default Value:

1 day on domain members. 0 days on stand-alone servers.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73319
Rule ID: SV-87971r2_rule
STIG ID: WN16-AC-000060
Severity: CAT II

CIS Controls:

Version 7

16.10 Ensure All Accounts Have An Expiration Date

Ensure that all accounts have an expiration date that is monitored and enforced.

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

16.5 Encrypt Transmittal of Username and Authentication Credentials

Ensure that all account usernames and authentication credentials are transmitted across networks using encrypted channels.

1.1.4 (L1) Ensure 'Minimum password length' is set to '14 or more character(s)' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines the least number of characters that make up a password for a user account. There are many different theories about how to determine the best password length for an organization, but perhaps "pass phrase" is a better term than "password." In Microsoft Windows 2000 and newer, pass phrases can be quite long and can include spaces. Therefore, a phrase such as "I want to drink a \$5 milkshake" is a valid pass phrase; it is a considerably stronger password than an 8 or 10 character string of random numbers and letters, and yet is easier to remember. Users must be educated about the proper selection and maintenance of passwords, especially with regard to password length. In enterprise environments, the ideal value for the Minimum password length setting is 14 characters, however you should adjust this value to meet your organization's business requirements.

The recommended state for this setting is: 14 or more character(s).

Note: In Windows Server 2016 and older versions of Windows Server, the GUI of the Local Security Policy (LSP), Local Group Policy Editor (LGPE) and Group Policy Management Editor (GPME) would not let you set this value higher than 14 characters. However, starting with Windows Server 2019, Microsoft changed the GUI to allow up to a 20 character minimum password length.

Rationale:

Types of password attacks include dictionary attacks (which attempt to use common words and phrases) and brute force attacks (which try every possible combination of characters). Also, attackers sometimes try to obtain the account database so they can use tools to discover the accounts and passwords.

Impact:

Requirements for extremely long passwords can actually decrease the security of an organization, because users might leave the information in an insecure location or lose it. If very long passwords are required, mistyped passwords could cause account lockouts and increase the volume of help desk calls. If your organization has issues with forgotten passwords due to password length requirements, consider teaching your users about pass phrases, which are often easier to remember and, due to the larger number of character combinations, much harder to discover.

Note: Older versions of Windows such as Windows 98 and Windows NT 4.0 do not support passwords that are longer than 14 characters. Computers that run these older operating systems are unable to authenticate with computers or domains that use accounts that require long passwords.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to 14 or more character(s) :

Computer Configuration\Policies\Windows Settings\Security Settings\Account Policies\Password Policy\Minimum password length

Default Value:

7 characters on domain members. 0 characters on stand-alone servers.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73321
Rule ID: SV-87973r2_rule
STIG ID: WN16-AC-000070
Severity: CAT II

CIS Controls:

Version 7

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

16.5 Encrypt Transmittal of Username and Authentication Credentials

Ensure that all account usernames and authentication credentials are transmitted across networks using encrypted channels.

1.1.5 (L1) Ensure 'Password must meet complexity requirements' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting checks all new passwords to ensure that they meet basic requirements for strong passwords.

When this policy is enabled, passwords must meet the following minimum requirements:

- Not contain the user's account name or parts of the user's full name that exceed two consecutive characters
- Be at least six characters in length
- Contain characters from three of the following categories:
 - English uppercase characters (A through Z)
 - English lowercase characters (a through z)
 - Base 10 digits (0 through 9)
 - Non-alphabetic characters (for example, !, \$, #, %)
 - A catch-all category of any Unicode character that does not fall under the previous four categories. This fifth category can be regionally specific.

Each additional character in a password increases its complexity exponentially. For instance, a seven-character, all lower-case alphabetic password would have 267 (approximately 8×10^9 or 8 billion) possible combinations. At 1,000,000 attempts per second (a capability of many password-cracking utilities), it would only take 133 minutes to crack. A seven-character alphabetic password with case sensitivity has 527 combinations. A seven-character case-sensitive alphanumeric password without punctuation has 627 combinations. An eight-character password has 268 (or 2×10^{11}) possible combinations. Although this might seem to be a large number, at 1,000,000 attempts per second it would take only 59 hours to try all possible passwords. Remember, these times will significantly increase for passwords that use ALT characters and other special keyboard characters such as "!" or "@". Proper use of the password settings can help make it difficult to mount a brute force attack.

The recommended state for this setting is: Enabled.

Rationale:

Passwords that contain only alphanumeric characters are extremely easy to discover with several publicly available tools.

Impact:

If the default password complexity configuration is retained, additional help desk calls for locked-out accounts could occur because users might not be accustomed to passwords that contain non-alphabetic characters. However, all users should be able to comply with the complexity requirement with minimal difficulty.

If your organization has more stringent security requirements, you can create a custom version of the Passfilt.dll file that allows the use of arbitrarily complex password strength rules. For example, a custom password filter might require the use of non-upper row characters. (Upper row characters are those that require you to hold down the SHIFT key and press any of the digits between 1 and 0.) A custom password filter might also perform a dictionary check to verify that the proposed password does not contain common dictionary words or fragments.

Also, the use of ALT key character combinations can greatly enhance the complexity of a password. However, such stringent password requirements can result in unhappy users and an extremely busy help desk. Alternatively, your organization could consider a requirement for all administrator passwords to use ALT characters in the 0128 - 0159 range. (ALT characters outside of this range can represent standard alphanumeric characters that would not add additional complexity to the password.)

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Account Policies\Password Policy\Password must meet complexity requirements

Default Value:

Enabled on domain members. Disabled on stand-alone servers.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73323
Rule ID: SV-87975r2_rule
STIG ID: WN16-AC-000080
Severity: CAT II

CIS Controls:

Version 7

4.4 Use Unique Passwords

Where multi-factor authentication is not supported (such as local administrator, root, or service accounts), accounts will use passwords that are unique to that system.

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

16.5 Encrypt Transmittal of Username and Authentication Credentials

Ensure that all account usernames and authentication credentials are transmitted across networks using encrypted channels.

1.1.6 (L1) Ensure 'Store passwords using reversible encryption' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether the operating system stores passwords in a way that uses reversible encryption, which provides support for application protocols that require knowledge of the user's password for authentication purposes. Passwords that are stored with reversible encryption are essentially the same as plaintext versions of the passwords.

The recommended state for this setting is: `Disabled`.

Rationale:

Enabling this policy setting allows the operating system to store passwords in a weaker format that is much more susceptible to compromise and weakens your system security.

Impact:

If your organization uses either the CHAP authentication protocol through remote access or IAS services or Digest Authentication in IIS, you must configure this policy setting to Enabled. This setting is extremely dangerous to apply through Group Policy on a user-by-user basis, because it requires the appropriate user account object to be opened in Active Directory Users and Computers.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Account Policies\Password Policy\Store passwords using reversible encryption

Default Value:

Disabled.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73325
Rule ID: SV-87977r2_rule
STIG ID: WN16-AC-000090
Severity: CAT II

CIS Controls:

Version 7

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

16.4 Encrypt or Hash all Authentication Credentials

Encrypt or hash with a salt all authentication credentials when stored.

16.5 Encrypt Transmittal of Username and Authentication Credentials

Ensure that all account usernames and authentication credentials are transmitted across networks using encrypted channels.

1.2 Account Lockout Policy

This section contains recommendations for account lockout policy.

1.2.1 (L1) Ensure 'Account lockout duration' is set to '15 or more minute(s)' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines the length of time that must pass before a locked account is unlocked and a user can try to log on again. The setting does this by specifying the number of minutes a locked out account will remain unavailable. If the value for this policy setting is configured to 0, locked out accounts will remain locked out until an administrator manually unlocks them.

Although it might seem like a good idea to configure the value for this policy setting to a high value, such a configuration will likely increase the number of calls that the help desk receives to unlock accounts locked by mistake. Users should be aware of the length of time a lock remains in place, so that they realize they only need to call the help desk if they have an extremely urgent need to regain access to their computer.

The recommended state for this setting is: 15 or more minute(s).

Rationale:

A denial of service (DoS) condition can be created if an attacker abuses the Account lockout threshold and repeatedly attempts to log on with a specific account. Once you configure the Account lockout threshold setting, the account will be locked out after the specified number of failed attempts. If you configure the Account lockout duration setting to 0, then the account will remain locked out until an administrator unlocks it manually.

Impact:

Although it may seem like a good idea to configure this policy setting to never automatically unlock an account, such a configuration can increase the number of requests that your organization's help desk receives to unlock accounts that were locked by mistake.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to 15 or more minute(s):

Computer Configuration\Policies\Windows Settings\Security Settings\Account Policies\Account Lockout Policy\Account lockout duration

Default Value:

None, because this policy setting only has meaning when an Account lockout threshold is specified. When an Account lockout threshold is configured, Windows automatically suggests a value of 30 minutes.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73309
Rule ID: SV-87961r3_rule
STIG ID: WN16-AC-000010
Severity: CAT II

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

1.2.2 (L1) Ensure 'Account lockout threshold' is set to '10 or fewer invalid logon attempt(s), but not 0' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server

Description:

This policy setting determines the number of failed logon attempts before the account is locked. Setting this policy to 0 does not conform to the benchmark as doing so disables the account lockout threshold.

The *CIS* recommended state for this setting is: 10 or fewer invalid logon attempt(s), but not 0.

Rationale:

Setting an account lockout threshold reduces the likelihood that an online password brute force attack will be successful. Setting the account lockout threshold too low introduces risk of increased accidental lockouts and/or a malicious actor intentionally locking out accounts.

Impact:

If this policy setting is enabled, a locked-out account will not be usable until it is reset by an administrator or until the account lockout duration expires. This setting may generate additional help desk calls.

If you enforce this setting an attacker could cause a denial of service condition by deliberately generating failed logons for multiple user, therefore you should also configure the Account Lockout Duration to a relatively low value.

If you configure the Account Lockout Threshold to 0, there is a possibility that an attacker's attempt to discover passwords with a brute force password attack might go undetected if a robust audit mechanism is not in place.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to 10 or fewer invalid login attempt(s), but not 0:

Computer Configuration\Policies\Windows Settings\Security Settings\Account Policies\Account Lockout Policy\Account lockout threshold

Default Value:

0 failed logon attempts.

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

1.2.3 (L3) Ensure 'Account lockout threshold' is set to '3 or fewer invalid logon attempt(s), but not 0' (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines the number of failed logon attempts before the account is locked. Setting this policy to 0 does not conform to the benchmark as doing so disables the account lockout threshold.

The STIG recommended state for this setting is: 3 or fewer invalid logon attempt(s), but not 0.

Rationale:

Setting an account lockout threshold reduces the likelihood that an online password brute force attack will be successful. Setting the account lockout threshold too low introduces risk of increased accidental lockouts and/or a malicious actor intentionally locking out accounts.

Impact:

If this policy setting is enabled, a locked-out account will not be usable until it is reset by an administrator or until the account lockout duration expires. This setting may generate additional help desk calls.

If you enforce this setting an attacker could cause a denial of service condition by deliberately generating failed logons for multiple user, therefore you should also configure the Account Lockout Duration to a relatively low value.

If you configure the Account Lockout Threshold to 0, there is a possibility that an attacker's attempt to discover passwords with a brute force password attack might go undetected if a robust audit mechanism is not in place.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to 3 or fewer invalid login attempt(s), but not 0:

Computer Configuration\Policies\Windows Settings\Security Settings\Account Policies\Account Lockout Policy\Account lockout threshold

Default Value:

0 failed logon attempts.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73311
Rule ID: SV-87963r2_rule
STIG ID: WN16-AC-000020
Severity: CAT II

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

1.2.4 (L1) Ensure 'Reset account lockout counter after' is set to '15 or more minute(s)' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines the length of time before the Account lockout threshold resets to zero. The default value for this policy setting is Not Defined. If the Account lockout threshold is defined, this reset time must be less than or equal to the value for the Account lockout duration setting.

If you leave this policy setting at its default value or configure the value to an interval that is too long, your environment could be vulnerable to a DoS attack. An attacker could maliciously perform a number of failed logon attempts on all users in the organization, which will lock out their accounts. If no policy were determined to reset the account lockout, it would be a manual task for administrators. Conversely, if a reasonable time value is configured for this policy setting, users would be locked out for a set period until all of the accounts are unlocked automatically.

The recommended state for this setting is: 15 or more minute(s).

Rationale:

Users can accidentally lock themselves out of their accounts if they mistype their password multiple times. To reduce the chance of such accidental lockouts, the Reset account lockout counter after setting determines the number of minutes that must elapse before the counter that tracks failed logon attempts and triggers lockouts is reset to 0.

Impact:

If you do not configure this policy setting or if the value is configured to an interval that is too long, a DoS attack could occur. An attacker could maliciously attempt to log on to each user's account numerous times and lock out their accounts as described in the preceding paragraphs. If you do not configure the Reset account lockout counter after setting, administrators would have to manually unlock all accounts. If you configure this policy setting to a reasonable value the users would be locked out for some period, after which their accounts would unlock automatically. Be sure that you notify users of the values used for this policy setting so that they will wait for the lockout timer to expire before they call the help desk about their inability to log on.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to 15 or more minute(s):

Computer Configuration\Policies\Windows Settings\Security Settings\Account Policies\Account Lockout Policy\Reset account lockout counter after

Default Value:

None, because this policy setting only has meaning when an Account lockout threshold is specified. When an Account lockout threshold is configured, Windows automatically suggests a value of 30 minutes.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73313
Rule ID: SV-87965r2_rule
STIG ID: WN16-AC-000030
Severity: CAT II

CIS Controls:

Version 7

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

16.5 Encrypt Transmittal of Username and Authentication Credentials

Ensure that all account usernames and authentication credentials are transmitted across networks using encrypted channels.

1.3 Kerberos Policy

This section contains recommendations for Kerberos Policy.

1.3.1 (L3) Ensure 'Enforce user logon restrictions' is set to 'Enabled' (Manual)

Profile Applicability:

- Level 3 - STIG Domain Controller

Description:

This security setting determines whether the Kerberos V5 Key Distribution Center (KDC) validates every request for a session ticket against the user rights policy of the user account. Validation of each request for a session ticket is optional, because the extra step takes time and it may slow network access to services.

The STIG recommended state for this setting is: Enabled.

Rationale:

If this policy setting is disabled, users might be granted session tickets for services that they do not have the right to use.

Impact:

None - this is the default behavior.

Audit:

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Account Policy\Kerberos Policy\Enforce user logon restrictions

Default Value:

Enabled

Additional Information:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73359
Rule ID: SV-88011r1_rule
STIG ID: WN16-DC-000020
Severity: CAT II

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

1.3.2 (L3) Ensure 'Maximum lifetime for service ticket' is set to '600 or fewer minutes, but not 0' (Manual)

Profile Applicability:

- Level 3 - STIG Domain Controller

Description:

This security setting determines the maximum amount of time (in minutes) that a granted session ticket can be used to access a particular service. The setting must be greater than 10 minutes and less than or equal to the setting for Maximum lifetime for user ticket.

The STIG recommended state for this setting is: 600 or fewer minutes, but not 0.

Rationale:

If a client presents an expired session ticket when it requests a connection to a server, the server returns an error message. The client must request a new session ticket from the Kerberos V5 Key Distribution Center (KDC). Once a connection is authenticated, however, it no longer matters whether the session ticket remains valid. Session tickets are used only to authenticate new connections with servers. Ongoing operations are not interrupted if the session ticket that is used to authenticate the connection expires during the connection.

Impact:

None - this is the default behavior.

Note: If you configure the value for the Maximum lifetime for service ticket setting too high, users might be able to access network resources outside of their logon hours. Also, users whose accounts were disabled might continue to have access to network services with valid service tickets that were issued before their accounts were disabled.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to 600 or fewer minutes, but not 0:

Computer Configuration\Policies\Windows Settings\Security Settings\Account Policy\Kerberos Policy\Maximum lifetime for service ticket

Default Value:

Enabled

Additional Information:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73361
Rule ID: SV-88013r1_rule
STIG ID: WN16-DC-000030
Severity: CAT II

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

1.3.3 (L3) Ensure 'Maximum lifetime for user ticket' is set to '10 or fewer hours, but not 0' (Manual)

Profile Applicability:

- Level 3 - STIG Domain Controller

Description:

This security setting determines the maximum amount of time (in hours) that a user's ticket-granting ticket (TGT) may be used.

The STIG recommended state for this setting is: 10 or fewer hours, but not 0.

Rationale:

If you configure the value for the Maximum lifetime for user ticket setting too high, users might be able to access network resources outside of their logon hours. Also, users whose accounts were disabled might continue to have access to network services with valid user tickets that were issued before their accounts were disabled. If you configure this value too low, ticket requests to the KDC may affect the performance of your KDC and present an opportunity for a DoS attack.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to 10 or fewer hours, but not 0:

Computer Configuration\Policies\Windows Settings\Security Settings\Account Policy\Kerberos Policy\Maximum lifetime for user ticket

Default Value:

10 hours

Additional Information:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73363
Rule ID: SV-88015r1_rule
STIG ID: WN16-DC-000040
Severity: CAT II

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

1.3.4 (L3) Ensure 'Maximum lifetime for user ticket renewal' is set to '7 or fewer days' (Manual)

Profile Applicability:

- Level 3 - STIG Domain Controller

Description:

This security setting determines the period of time (in days) during which a user's ticket-granting ticket can be renewed.

The STIG recommended state for this setting is: 7 or fewer days.

Rationale:

If the value for this policy setting is too high, users may be able to renew very old user ticket-granting tickets. If the value is 0, ticket-granting tickets never expire.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to 7 or fewer days:

Computer Configuration\Policies\Windows Settings\Security Settings\Account Policy\Kerberos Policy\Maximum lifetime for user ticket renewal

Default Value:

7 days

Additional Information:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73365
Rule ID: SV-88017r1_rule
STIG ID: WN16-DC-000050
Severity: CAT II

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

1.3.5 (L3) Ensure 'Maximum tolerance for computer clock synchronization' is set to '5 or fewer minutes' (Manual)

Profile Applicability:

- Level 3 - STIG Domain Controller

Description:

This security setting determines the maximum time difference (in minutes) that Kerberos V5 tolerates between the time on the client clock and the time on the domain controller that provides Kerberos authentication.

The STIG recommended state for this setting is: 5 or fewer minutes.

Rationale:

To prevent "replay attacks," the Kerberos v5 protocol uses time stamps as part of its protocol definition. For time stamps to work properly, the clocks of the client and the domain controller need to be in sync as much as possible. In other words, both devices must be set to the same time and date. Because the clocks of two computers are often out of sync, you can use this policy setting to establish the maximum acceptable difference to the Kerberos protocol between a client clock and domain controller clock. If the difference between a client computer clock and the domain controller clock is less than the maximum time difference that is specified in this policy, any time stamp that is used in a session between the two devices is considered to be authentic.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to 5 or fewer minutes:

Computer Configuration\Policies\Windows Settings\Security Settings\Account Policy\Kerberos Policy\Maximum tolerance for computer clock synchronization

Default Value:

5 minutes

Additional Information:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73367
Rule ID: SV-88019r1_rule
STIG ID: WN16-DC-000060
Severity: CAT II

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

2 Local Policies

This section contains recommendations for local policies.

2.1 Audit Policy

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

2.2 User Rights Assignment

This section contains recommendations for user rights assignments.

2.2.1 (L1) Ensure 'Access Credential Manager as a trusted caller' is set to 'No One' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This security setting is used by Credential Manager during Backup and Restore. No accounts should have this user right, as it is only assigned to Winlogon. Users' saved credentials might be compromised if this user right is assigned to other entities.

The recommended state for this setting is: No One.

Rationale:

If an account is given this right the user of the account may create an application that calls into Credential Manager and is returned the credentials for another user.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to No One:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Access Credential Manager as a trusted caller

Default Value:

No one.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73729
Rule ID: SV-88393r2_rule
STIG ID: WN16-UR-000010
Severity: CAT II

CIS Controls:

Version 7

4.8 Log and Alert on Changes to Administrative Group Membership

Configure systems to issue a log entry and alert when an account is added to or removed from any group assigned administrative privileges.

2.2.2 (L1) Ensure 'Access this computer from the network' is set to 'Administrators, Authenticated Users, ENTERPRISE DOMAIN CONTROLLERS' (DC only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller

Description:

This policy setting allows other users on the network to connect to the computer and is required by various network protocols that include Server Message Block (SMB)-based protocols, NetBIOS, Common Internet File System (CIFS), and Component Object Model Plus (COM+).

The recommended state for this setting is: **Administrators, Authenticated Users, ENTERPRISE DOMAIN CONTROLLERS.**

Rationale:

Users who can connect from their computer to the network can access resources on target computers for which they have permission. For example, the **Access this computer from the network** user right is required for users to connect to shared printers and folders. If this user right is assigned to the **Everyone** group, then anyone will be able to read the files in those shared folders. However, this situation is unlikely for new installations of Windows Server 2003 with Service Pack 1 (SP1), because the default share and NTFS permissions in Windows Server 2003 do not include the **Everyone** group. This vulnerability may have a higher level of risk for computers that you upgrade from Windows NT 4.0 or Windows 2000, because the default permissions for these operating systems are not as restrictive as the default permissions in Windows Server 2003.

Impact:

If you remove the **Access this computer from the network** user right on Domain Controllers for all users, no one will be able to log on to the domain or use network resources. If you remove this user right on Member Servers, users will not be able to connect to those servers through the network. Successful negotiation of IPsec connections requires that the initiating machine has this right, therefore if using IPsec, it is recommended that it is assigned to the **Authenticated Users** group. If you have installed optional components such as ASP.NET or Internet Information Services (IIS), you may need to assign this user right to additional accounts that are required by those components. It is important to verify that authorized users are assigned this user right for the computers they need to access the network.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path to include: **Administrators, Authenticated Users, ENTERPRISE DOMAIN CONTROLLERS**

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Access this computer from the network

Default Value:

Administrators, Authenticated Users, Enterprise Domain Controllers, Everyone, Pre- Windows 2000 Compatible Access.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73731
Rule ID: SV-88395r3_rule
STIG ID: WN16-DC-000340
Severity: CAT II

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

2.2.3 (L1) Ensure 'Access this computer from the network' is set to 'Administrators, Authenticated Users' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

This policy setting allows other users on the network to connect to the computer and is required by various network protocols that include Server Message Block (SMB)-based protocols, NetBIOS, Common Internet File System (CIFS), and Component Object Model Plus (COM+).

The recommended state for this setting is: Administrators, Authenticated Users.

Rationale:

Users who can connect from their computer to the network can access resources on target computers for which they have permission. For example, the **Access this computer from the network** user right is required for users to connect to shared printers and folders. If this user right is assigned to the Everyone group, then anyone will be able to read the files in those shared folders. However, this situation is unlikely for new installations of Windows Server 2003 with Service Pack 1 (SP1), because the default share and NTFS permissions in Windows Server 2003 do not include the Everyone group. This vulnerability may have a higher level of risk for computers that you upgrade from Windows NT 4.0 or Windows 2000, because the default permissions for these operating systems are not as restrictive as the default permissions in Windows Server 2003.

Impact:

If you remove the **Access this computer from the network** user right on Domain Controllers for all users, no one will be able to log on to the domain or use network resources. If you remove this user right on Member Servers, users will not be able to connect to those servers through the network. Successful negotiation of IPsec connections requires that the initiating machine has this right, therefore if using IPsec, it is recommended that it is assigned to the **Authenticated Users** group. If you have installed optional components such as ASP.NET or Internet Information Services (IIS), you may need to assign this user right to additional accounts that are required by those components. It is important to verify that authorized users are assigned this user right for the computers they need to access the network.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Access this computer from the network

Default Value:

Administrators, Backup Operators, Users, Everyone.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73733
Rule ID: SV-88397r3_rule
STIG ID: WN16-MS-000340
Severity: CAT II

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

2.2.4 (L1) Ensure 'Act as part of the operating system' is set to 'No One' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows a process to assume the identity of any user and thus gain access to the resources that the user is authorized to access.

The recommended state for this setting is: No One.

Note: This user right is considered a "sensitive privilege" for the purposes of auditing.

Rationale:

The **Act as part of the operating system** user right is extremely powerful. Anyone with this user right can take complete control of the computer and erase evidence of their activities.

Impact:

There should be little or no impact because the **Act as part of the operating system** user right is rarely needed by any accounts other than the Local System account, which implicitly has this right.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to No One:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Act as part of the operating system

Default Value:

No one.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73735
Rule ID: SV-88399r2_rule
STIG ID: WN16-UR-000030
Severity: CAT I

CIS Controls:

Version 7

4.8 Log and Alert on Changes to Administrative Group Membership

Configure systems to issue a log entry and alert when an account is added to or removed from any group assigned administrative privileges.

2.2.5 (L1) Ensure 'Add workstations to domain' is set to 'Administrators' (DC only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller

Description:

This policy setting specifies which users can add computer workstations to the domain. For this policy setting to take effect, it must be assigned to the user as part of the **Default Domain Controller Policy** for the domain. A user who has been assigned this right can add up to 10 workstations to the domain. Users who have been assigned the *Create Computer Objects* permission for an OU or the Computers container in Active Directory can add an unlimited number of computers to the domain, regardless of whether or not they have been assigned the **Add workstations to domain** user right.

In Windows-based networks, the term security principal is defined as a user, group, or computer that is automatically assigned a security identifier to control access to resources. In an Active Directory domain, each computer account is a full security principal with the ability to authenticate and access domain resources. However, some organizations may want to limit the number of computers in an Active Directory environment so that they can consistently track, build, and manage the computers. If users are allowed to add computers to the domain, tracking and management efforts would be hampered. Also, users could perform activities that are more difficult to trace because of their ability to create additional unauthorized domain computers.

The recommended state for this setting is: Administrators.

Rationale:

The **Add workstations to domain** user right presents a moderate vulnerability. Users with this right could add a computer to the domain that is configured in a way that violates organizational security policies. For example, if your organization does not want its users to have administrative privileges on their computers, a user could (re-)install Windows on his or her computer and then add the computer to the domain. The user would know the password for the local Administrator account, and could log on with that account and then add his or her domain account to the local Administrators group.

Impact:

For organizations that have never allowed users to set up their own computers and add them to the domain, this countermeasure will have no impact. For those that have allowed some or all users to configure their own computers, this countermeasure will force the organization to establish a formal process for these procedures going forward. It will not affect existing domain computers unless they are removed from and re-added to the domain.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Administrators:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Add workstations to domain

Default Value:

Authenticated Users. (All domain users have the ability to add up to 10 computer accounts to an Active Directory domain. These new computer accounts are created in the Computers container.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73737
Rule ID: SV-88401r2_rule
STIG ID: WN16-DC-000350
Severity: CAT II

CIS Controls:

Version 7

4.3 Ensure the Use of Dedicated Administrative Accounts

Ensure that all users with administrative account access use a dedicated or secondary account for elevated activities. This account should only be used for administrative activities and not internet browsing, email, or similar activities.

4.5 Use Multifactor Authentication For All Administrative Access

Use multi-factor authentication and encrypted channels for all administrative account access.

4.8 Log and Alert on Changes to Administrative Group Membership

Configure systems to issue a log entry and alert when an account is added to or removed from any group assigned administrative privileges.

2.2.6 (L1) Ensure 'Adjust memory quotas for a process' is set to 'Administrators, LOCAL SERVICE, NETWORK SERVICE' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows a user to adjust the maximum amount of memory that is available to a process. The ability to adjust memory quotas is useful for system tuning, but it can be abused. In the wrong hands, it could be used to launch a denial of service (DoS) attack.

The recommended state for this setting is: Administrators, LOCAL SERVICE, NETWORK SERVICE.

Note: A Member Server that holds the *Web Server (IIS)* Role with *Web Server Role Service* will require a special exception to this recommendation, to allow IIS application pool(s) to be granted this user right.

Note #2: A Member Server with Microsoft SQL Server installed will require a special exception to this recommendation for additional SQL-generated entries to be granted this user right.

Rationale:

A user with the **Adjust memory quotas for a process** user right can reduce the amount of memory that is available to any process, which could cause business-critical network applications to become slow or to fail. In the wrong hands, this privilege could be used to start a denial of service (DoS) attack.

Impact:

Organizations that have not restricted users to roles with limited privileges will find it difficult to impose this countermeasure. Also, if you have installed optional components such as ASP.NET or IIS, you may need to assign the **Adjust memory quotas for a process** user right to additional accounts that are required by those components. Otherwise, this countermeasure should have no impact on most computers. If this user right is necessary for a user account, it can be assigned to a local computer account instead of a domain account.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Administrators, LOCAL SERVICE, NETWORK SERVICE:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Adjust memory quotas for a process

Default Value:

Administrators, LOCAL SERVICE, NETWORK SERVICE.

CIS Controls:

Version 7

4.3 Ensure the Use of Dedicated Administrative Accounts

Ensure that all users with administrative account access use a dedicated or secondary account for elevated activities. This account should only be used for administrative activities and not internet browsing, email, or similar activities.

4.4 Use Unique Passwords

Where multi-factor authentication is not supported (such as local administrator, root, or service accounts), accounts will use passwords that are unique to that system.

4.8 Log and Alert on Changes to Administrative Group Membership

Configure systems to issue a log entry and alert when an account is added to or removed from any group assigned administrative privileges.

2.2.7 (L1) Ensure 'Allow log on locally' is set to 'Administrators' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines which users can interactively log on to computers in your environment. Logons that are initiated by pressing the CTRL+ALT+DEL key sequence on the client computer keyboard require this user right. Users who attempt to log on through Terminal Services / Remote Desktop Services or IIS also require this user right.

The recommended state for this setting is: Administrators.

Note: This user right should generally be restricted to the `Administrators` group. Assign this user right to the `Backup Operators` group if your organization requires that they have this capability.

Rationale:

Any account with the **Allow log on locally** user right can log on at the console of the computer. If you do not restrict this user right to legitimate users who need to be able to log on to the console of the computer, unauthorized users could download and run malicious software to elevate their privileges.

Impact:

If you remove these default groups, you could limit the abilities of users who are assigned to specific administrative roles in your environment. You should confirm that delegated activities will not be adversely affected by any changes that you make to the **Allow log on locally** user right.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Allow log on locally

Default Value:

On Member Servers: Administrators, Backup Operators, Users.

On Domain Controllers: Account Operators, Administrators, Backup Operators, Print Operators.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73739
Rule ID: SV-88403r2_rule
STIG ID: WN16-UR-000050
Severity: CAT II

CIS Controls:

Version 7

4.1 Maintain Inventory of Administrative Accounts

Use automated tools to inventory all administrative accounts, including domain and local accounts, to ensure that only authorized individuals have elevated privileges.

4.3 Ensure the Use of Dedicated Administrative Accounts

Ensure that all users with administrative account access use a dedicated or secondary account for elevated activities. This account should only be used for administrative activities and not internet browsing, email, or similar activities.

4.5 Use Multifactor Authentication For All Administrative Access

Use multi-factor authentication and encrypted channels for all administrative account access.

2.2.8 (L1) Ensure 'Allow log on through Remote Desktop Services' is set to 'Administrators' (DC only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller

Description:

This policy setting determines which users or groups have the right to log on as a Remote Desktop Services client. If your organization uses Remote Assistance as part of its help desk strategy, create a group and assign it this user right through Group Policy. If the help desk in your organization does not use Remote Assistance, assign this user right only to the Administrators group or use the Restricted Groups feature to ensure that no user accounts are part of the Remote Desktop Users group.

Restrict this user right to the Administrators group, and possibly the Remote Desktop Users group, to prevent unwanted users from gaining access to computers on your network by means of the Remote Assistance feature.

The recommended state for this setting is: Administrators.

Note: A Member Server that holds the *Remote Desktop Services* Role with *Remote Desktop Connection Broker* Role Service will require a special exception to this recommendation, to allow the Authenticated Users group to be granted this user right.

Note #2: The above lists are to be treated as whitelists, which implies that the above principals need not be present for assessment of this recommendation to pass.

Note #3: In all versions of Windows Server prior to Server 2008 R2, **Remote Desktop Services** was known as **Terminal Services**, so you should substitute the older term if comparing against an older OS.

Rationale:

Any account with the **Allow log on through Remote Desktop Services** user right can log on to the remote console of the computer. If you do not restrict this user right to legitimate users who need to log on to the console of the computer, unauthorized users could download and run malicious software to elevate their privileges.

Impact:

Removal of the **Allow log on through Remote Desktop Services** user right from other groups or membership changes in these default groups could limit the abilities of users who perform specific administrative roles in your environment. You should confirm that delegated activities will not be adversely affected.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Allow log on through Remote Desktop Services

Default Value:

Administrators.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73741
Rule ID: SV-88405r2_rule
STIG ID: WN16-DC-000360
Severity: CAT II

CIS Controls:

Version 7

4.3 Ensure the Use of Dedicated Administrative Accounts

Ensure that all users with administrative account access use a dedicated or secondary account for elevated activities. This account should only be used for administrative activities and not internet browsing, email, or similar activities.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

4.8 Log and Alert on Changes to Administrative Group Membership

Configure systems to issue a log entry and alert when an account is added to or removed from any group assigned administrative privileges.

6.2 Activate audit logging

Ensure that local logging has been enabled on all systems and networking devices.

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

2.2.9 (L1) Ensure 'Allow log on through Remote Desktop Services' is set to 'Administrators, Remote Desktop Users' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

This policy setting determines which users or groups have the right to log on as a Remote Desktop Services client. If your organization uses Remote Assistance as part of its help desk strategy, create a group and assign it this user right through Group Policy. If the help desk in your organization does not use Remote Assistance, assign this user right only to the Administrators group or use the Restricted Groups feature to ensure that no user accounts are part of the Remote Desktop Users group.

Restrict this user right to the Administrators group, and possibly the Remote Desktop Users group, to prevent unwanted users from gaining access to computers on your network by means of the Remote Assistance feature.

The recommended state for this setting is: Administrators, Remote Desktop Users.

Note: A Member Server that holds the *Remote Desktop Services* Role with *Remote Desktop Connection Broker* Role Service will require a special exception to this recommendation, to allow the Authenticated Users group to be granted this user right.

Note #2: The above lists are to be treated as whitelists, which implies that the above principals need not be present for assessment of this recommendation to pass.

Note #3: In all versions of Windows Server prior to Server 2008 R2, **Remote Desktop Services** was known as **Terminal Services**, so you should substitute the older term if comparing against an older OS.

Rationale:

Any account with the **Allow log on through Remote Desktop Services** user right can log on to the remote console of the computer. If you do not restrict this user right to legitimate users who need to log on to the console of the computer, unauthorized users could download and run malicious software to elevate their privileges.

Impact:

Removal of the **Allow log on through Remote Desktop Services** user right from other groups or membership changes in these default groups could limit the abilities of users who perform specific administrative roles in your environment. You should confirm that delegated activities will not be adversely affected.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Allow log on through Remote Desktop Services

Default Value:

Administrators, Remote Desktop Users.

CIS Controls:

Version 7

4.1 Maintain Inventory of Administrative Accounts

Use automated tools to inventory all administrative accounts, including domain and local accounts, to ensure that only authorized individuals have elevated privileges.

4.3 Ensure the Use of Dedicated Administrative Accounts

Ensure that all users with administrative account access use a dedicated or secondary account for elevated activities. This account should only be used for administrative activities and not internet browsing, email, or similar activities.

4.5 Use Multifactor Authentication For All Administrative Access

Use multi-factor authentication and encrypted channels for all administrative account access.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

4.8 Log and Alert on Changes to Administrative Group Membership

Configure systems to issue a log entry and alert when an account is added to or removed from any group assigned administrative privileges.

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

2.2.10 (L1) Ensure 'Back up files and directories' is set to 'Administrators' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows users to circumvent file and directory permissions to back up the system. This user right is enabled only when an application (such as NTBACKUP) attempts to access a file or directory through the NTFS file system backup application programming interface (API). Otherwise, the assigned file and directory permissions apply.

The recommended state for this setting is: Administrators.

Note: This user right is considered a "sensitive privilege" for the purposes of auditing.

Rationale:

Users who are able to back up data from a computer could take the backup media to a non-domain computer on which they have administrative privileges and restore the data. They could take ownership of the files and view any unencrypted data that is contained within the backup set.

Impact:

Changes in the membership of the groups that have the **Back up files and directories** user right could limit the abilities of users who are assigned to specific administrative roles in your environment. You should confirm that authorized backup administrators are still able to perform backup operations.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Administrators.

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Back up files and directories

Default Value:

On Member Servers: Administrators, Backup Operators.

On Domain Controllers: Administrators, Backup Operators, Server Operators.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73743
Rule ID: SV-88407r2_rule
STIG ID: WN16-UR-000070
Severity: CAT II

CIS Controls:

Version 7

4.1 Maintain Inventory of Administrative Accounts

Use automated tools to inventory all administrative accounts, including domain and local accounts, to ensure that only authorized individuals have elevated privileges.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.11 (L1) Ensure 'Change the system time' is set to 'Administrators, LOCAL SERVICE' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines which users and groups can change the time and date on the internal clock of the computers in your environment. Users who are assigned this user right can affect the appearance of event logs. When a computer's time setting is changed, logged events reflect the new time, not the actual time that the events occurred.

The recommended state for this setting is: Administrators, LOCAL SERVICE.

Note: Discrepancies between the time on the local computer and on the Domain Controllers in your environment may cause problems for the Kerberos authentication protocol, which could make it impossible for users to log on to the domain or obtain authorization to access domain resources after they are logged on. Also, problems will occur when Group Policy is applied to client computers if the system time is not synchronized with the Domain Controllers.

Rationale:

Users who can change the time on a computer could cause several problems. For example, time stamps on event log entries could be made inaccurate, time stamps on files and folders that are created or modified could be incorrect, and computers that belong to a domain may not be able to authenticate themselves or users who try to log on to the domain from them. Also, because the Kerberos authentication protocol requires that the requestor and authenticator have their clocks synchronized within an administrator-defined skew period, an attacker who changes a computer's time may cause that computer to be unable to obtain or grant Kerberos tickets.

The risk from these types of events is mitigated on most Domain Controllers, Member Servers, and end-user computers because the Windows Time service automatically synchronizes time with Domain Controllers in the following ways:

- All client desktop computers and Member Servers use the authenticating Domain Controller as their inbound time partner.
- All Domain Controllers in a domain nominate the Primary Domain Controller (PDC) Emulator operations master as their inbound time partner.
- All PDC Emulator operations masters follow the hierarchy of domains in the selection of their inbound time partner.
- The PDC Emulator operations master at the root of the domain is authoritative for the organization. Therefore it is recommended that you configure this computer to synchronize with a reliable external time server.

This vulnerability becomes much more serious if an attacker is able to change the system time and then stop the Windows Time service or reconfigure it to synchronize with a time server that is not accurate.

Impact:

There should be no impact, because time synchronization for most organizations should be fully automated for all computers that belong to the domain. Computers that do not belong to the domain should be configured to synchronize with an external source.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Administrators, LOCAL SERVICE:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Change the system time

Default Value:

On Member Servers: Administrators, LOCAL SERVICE.

On Domain Controllers: Administrators, Server Operators, LOCAL SERVICE.

CIS Controls:

Version 7

4.4 Use Unique Passwords

Where multi-factor authentication is not supported (such as local administrator, root, or service accounts), accounts will use passwords that are unique to that system.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.12 (L1) Ensure 'Change the time zone' is set to 'Administrators, LOCAL SERVICE' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Member Server
- Level 3 - STIG Domain Controller

Description:

This setting determines which users can change the time zone of the computer. This ability holds no great danger for the computer and may be useful for mobile workers.

The recommended state for this setting is: Administrators, LOCAL SERVICE.

Rationale:

Changing the time zone represents little vulnerability because the system time is not affected. This setting merely enables users to display their preferred time zone while being synchronized with Domain Controllers in different time zones.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Administrators, LOCAL SERVICE:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Change the time zone

Default Value:

Administrators, LOCAL SERVICE.

CIS Controls:

Version 7

4.4 Use Unique Passwords

Where multi-factor authentication is not supported (such as local administrator, root, or service accounts), accounts will use passwords that are unique to that system.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.13 (L1) Ensure 'Create a pagefile' is set to 'Administrators' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows users to change the size of the pagefile. By making the pagefile extremely large or extremely small, an attacker could easily affect the performance of a compromised computer.

The recommended state for this setting is: Administrators.

Rationale:

Users who can change the page file size could make it extremely small or move the file to a highly fragmented storage volume, which could cause reduced computer performance.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Administrators:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment>Create a pagefile

Default Value:

Administrators.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73745
Rule ID: SV-88409r2_rule
STIG ID: WN16-UR-000080
Severity: CAT II

CIS Controls:

Version 7

4.1 Maintain Inventory of Administrative Accounts

Use automated tools to inventory all administrative accounts, including domain and local accounts, to ensure that only authorized individuals have elevated privileges.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.14 (L1) Ensure 'Create a token object' is set to 'No One' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows a process to create an access token, which may provide elevated rights to access sensitive data.

The recommended state for this setting is: No One.

Note: This user right is considered a "sensitive privilege" for the purposes of auditing.

Rationale:

A user account that is given this user right has complete control over the system and can lead to the system being compromised. It is highly recommended that you do not assign any user accounts this right.

The operating system examines a user's access token to determine the level of the user's privileges. Access tokens are built when users log on to the local computer or connect to a remote computer over a network. When you revoke a privilege, the change is immediately recorded, but the change is not reflected in the user's access token until the next time the user logs on or connects. Users with the ability to create or modify tokens can change the level of access for any currently logged on account. They could escalate their own privileges or create a DoS condition.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to No One:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment>Create a token object

Default Value:

No one.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73747
Rule ID: SV-88411r2_rule
STIG ID: WN16-UR-000090
Severity: CAT II

CIS Controls:

Version 7

4.8 Log and Alert on Changes to Administrative Group Membership

Configure systems to issue a log entry and alert when an account is added to or removed from any group assigned administrative privileges.

2.2.15 (L1) Ensure 'Create global objects' is set to 'Administrators, LOCAL SERVICE, NETWORK SERVICE, SERVICE' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether users can create global objects that are available to all sessions. Users can still create objects that are specific to their own session if they do not have this user right.

Users who can create global objects could affect processes that run under other users' sessions. This capability could lead to a variety of problems, such as application failure or data corruption.

The recommended state for this setting is: Administrators, LOCAL SERVICE, NETWORK SERVICE, SERVICE.

Note: A Member Server with Microsoft SQL Server *and* its optional "Integration Services" component installed will require a special exception to this recommendation for additional SQL-generated entries to be granted this user right.

Rationale:

Users who can create global objects could affect Windows services and processes that run under other user or system accounts. This capability could lead to a variety of problems, such as application failure, data corruption and elevation of privilege.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to
Administrators, LOCAL SERVICE, NETWORK SERVICE, SERVICE:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment>Create global objects

Default Value:

Administrators, LOCAL SERVICE, NETWORK SERVICE, SERVICE.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73749
Rule ID: SV-88413r2_rule
STIG ID: WN16-UR-000100
Severity: CAT II

CIS Controls:

Version 7

4.4 Use Unique Passwords

Where multi-factor authentication is not supported (such as local administrator, root, or service accounts), accounts will use passwords that are unique to that system.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.16 (L1) Ensure 'Create permanent shared objects' is set to 'No One' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This user right is useful to kernel-mode components that extend the object namespace. However, components that run in kernel mode have this user right inherently. Therefore, it is typically not necessary to specifically assign this user right.

The recommended state for this setting is: No One.

Rationale:

Users who have the **Create permanent shared objects** user right could create new shared objects and expose sensitive data to the network.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to No One:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment>Create permanent shared objects

Default Value:

No one.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73751
Rule ID: SV-88415r2_rule
STIG ID: WN16-UR-000110
Severity: CAT II

CIS Controls:

Version 7

4.8 Log and Alert on Changes to Administrative Group Membership

Configure systems to issue a log entry and alert when an account is added to or removed from any group assigned administrative privileges.

2.2.17 (L1) Ensure 'Create symbolic links' is set to 'Administrators' (DC only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller

Description:

This policy setting determines which users can create symbolic links. In Windows Vista, existing NTFS file system objects, such as files and folders, can be accessed by referring to a new kind of file system object called a symbolic link. A symbolic link is a pointer (much like a shortcut or .lnk file) to another file system object, which can be a file, folder, shortcut or another symbolic link. The difference between a shortcut and a symbolic link is that a shortcut only works from within the Windows shell. To other programs and applications, shortcuts are just another file, whereas with symbolic links, the concept of a shortcut is implemented as a feature of the NTFS file system.

Symbolic links can potentially expose security vulnerabilities in applications that are not designed to use them. For this reason, the privilege for creating symbolic links should only be assigned to trusted users. By default, only `Administrators` can create symbolic links.

The recommended state for this setting is: `Administrators`.

Rationale:

Users who have the **Create symbolic links** user right could inadvertently or maliciously expose your system to symbolic link attacks. Symbolic link attacks can be used to change the permissions on a file, to corrupt data, to destroy data, or as a Denial of Service attack.

Impact:

In most cases there will be no impact because this is the default configuration. However, on Windows Servers with the Hyper-V server role installed, this user right should also be granted to the special group `Virtual Machines` - otherwise you will not be able to create new virtual machines.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To implement the recommended configuration state, configure the following UI path:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment>Create symbolic links

Default Value:

Administrators.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73753
Rule ID: SV-88417r2_rule
STIG ID: WN16-UR-000120
Severity: CAT II

CIS Controls:

Version 7

4.1 Maintain Inventory of Administrative Accounts

Use automated tools to inventory all administrative accounts, including domain and local accounts, to ensure that only authorized individuals have elevated privileges.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.18 (L1) Ensure 'Create symbolic links' is set to 'Administrators, NT VIRTUAL MACHINE\Virtual Machines' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

This policy setting determines which users can create symbolic links. In Windows Vista, existing NTFS file system objects, such as files and folders, can be accessed by referring to a new kind of file system object called a symbolic link. A symbolic link is a pointer (much like a shortcut or .lnk file) to another file system object, which can be a file, folder, shortcut or another symbolic link. The difference between a shortcut and a symbolic link is that a shortcut only works from within the Windows shell. To other programs and applications, shortcuts are just another file, whereas with symbolic links, the concept of a shortcut is implemented as a feature of the NTFS file system.

Symbolic links can potentially expose security vulnerabilities in applications that are not designed to use them. For this reason, the privilege for creating symbolic links should only be assigned to trusted users. By default, only Administrators can create symbolic links.

The recommended state for this setting is: Administrators and (when the Hyper-V Role is installed) NT VIRTUAL MACHINE\Virtual Machines.

Rationale:

Users who have the **Create symbolic links** user right could inadvertently or maliciously expose your system to symbolic link attacks. Symbolic link attacks can be used to change the permissions on a file, to corrupt data, to destroy data, or as a Denial of Service attack.

Impact:

In most cases there will be no impact because this is the default configuration. However, on Windows Servers with the Hyper-V server role installed, this user right should also be granted to the special group Virtual Machines - otherwise you will not be able to create new virtual machines.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To implement the recommended configuration state, configure the following UI path:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment>Create symbolic links

Default Value:

Administrators.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73753
Rule ID: SV-88417r2_rule
STIG ID: WN16-UR-000120
Severity: CAT II

CIS Controls:

Version 7

4.1 Maintain Inventory of Administrative Accounts

Use automated tools to inventory all administrative accounts, including domain and local accounts, to ensure that only authorized individuals have elevated privileges.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.19 (L1) Ensure 'Debug programs' is set to 'Administrators' *(Automated)*

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines which user accounts will have the right to attach a debugger to any process or to the kernel, which provides complete access to sensitive and critical operating system components. Developers who are debugging their own applications do not need to be assigned this user right; however, developers who are debugging new system components will need it.

The recommended state for this setting is: Administrators.

Note: This user right is considered a "sensitive privilege" for the purposes of auditing.

Rationale:

The **Debug programs** user right can be exploited to capture sensitive computer information from system memory, or to access and modify kernel or application structures. Some attack tools exploit this user right to extract hashed passwords and other private security information, or to insert rootkit code. By default, the **Debug programs** user right is assigned only to administrators, which helps to mitigate the risk from this vulnerability.

Impact:

If you revoke this user right, no one will be able to debug programs. However, typical circumstances rarely require this capability on production computers. If a problem arises that requires an application to be debugged on a production server, you can move the server to a different OU temporarily and assign the **Debug programs** user right to a separate Group Policy for that OU.

The service account that is used for the cluster service needs the **Debug programs** user right; if it does not have it, Windows Clustering will fail.

Tools that are used to manage processes will be unable to affect processes that are not owned by the person who runs the tools. For example, the Windows Server 2003 Resource Kit tool `Kill.exe` requires this user right for administrators to terminate processes that they did not start.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Administrators:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Debug programs

Default Value:

Administrators.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73755
Rule ID: SV-88419r2_rule
STIG ID: WN16-UR-000130
Severity: CAT I

CIS Controls:

Version 7

4.1 Maintain Inventory of Administrative Accounts

Use automated tools to inventory all administrative accounts, including domain and local accounts, to ensure that only authorized individuals have elevated privileges.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.20 (L1) Ensure 'Deny access to this computer from the network' to include 'Guests' (DC only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller

Description:

This policy setting prohibits users from connecting to a computer from across the network, which would allow users to access and potentially modify data remotely. In high security environments, there should be no need for remote users to access data on a computer. Instead, file sharing should be accomplished through the use of network servers. This user right supersedes the **Access this computer from the network** user right if an account is subject to both policies.

The recommended state for this setting is to include: Guests.

Caution: Configuring a standalone (non-domain-joined) server as described above may result in an inability to remotely administer the server.

Note: The security identifier Local account and member of Administrators group is not available in Server 2008 R2 and Server 2012 (non-R2) unless [MSKB 2871997](#) has been installed.

Note #2: Configuring a Member Server or standalone server as described above may adversely affect applications that create a local service account and place it in the Administrators group - in which case you must either convert the application to use a domain-hosted service account, or remove Local account and member of Administrators group from this User Right Assignment. Using a domain-hosted service account is strongly preferred over making an exception to this rule, where possible.

Rationale:

Users who can log on to the computer over the network can enumerate lists of account names, group names, and shared resources. Users with permission to access shared folders and files can connect over the network and possibly view or modify data.

Impact:

If you configure the **Deny access to this computer from the network** user right for other groups, you could limit the abilities of users who are assigned to specific administrative roles in your environment. You should verify that delegated tasks will not be negatively affected.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Deny access to this computer from the network

Default Value:

Guest.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73757
Rule ID: SV-88421r2_rule
STIG ID: WN16-DC-000370
Severity: CAT II

CIS Controls:

Version 7

16.8 Disable Any Unassociated Accounts

Disable any account that cannot be associated with a business process or business owner.

2.2.21 (L1) Ensure 'Deny access to this computer from the network' to include 'Guests, Local account and member of Administrators group' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server

Description:

This policy setting prohibits users from connecting to a computer from across the network, which would allow users to access and potentially modify data remotely. In high security environments, there should be no need for remote users to access data on a computer. Instead, file sharing should be accomplished through the use of network servers. This user right supersedes the **Access this computer from the network** user right if an account is subject to both policies.

The *CIS* recommended state for this setting is to include: Guests, Local account and member of Administrators group.

Caution: Configuring a standalone (non-domain-joined) server as described above may result in an inability to remotely administer the server.

Note: The security identifier Local account and member of Administrators group is not available in Server 2008 R2 and Server 2012 (non-R2) unless [MSKB 2871997](#) has been installed.

Note #2: Configuring a Member Server or standalone server as described above may adversely affect applications that create a local service account and place it in the Administrators group - in which case you must either convert the application to use a domain-hosted service account, or remove Local account and member of Administrators group from this User Right Assignment. Using a domain-hosted service account is strongly preferred over making an exception to this rule, where possible.

Rationale:

Users who can log on to the computer over the network can enumerate lists of account names, group names, and shared resources. Users with permission to access shared folders and files can connect over the network and possibly view or modify data.

Impact:

If you configure the **Deny access to this computer from the network** user right for other groups, you could limit the abilities of users who are assigned to specific administrative roles in your environment. You should verify that delegated tasks will not be negatively affected.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Deny access to this computer from the network

Default Value:

No one.

CIS Controls:

Version 7

16.8 Disable Any Unassociated Accounts

Disable any account that cannot be associated with a business process or business owner.

2.2.22 (L3) Ensure 'Deny access to this computer from the network' to include 'Guests, member of Enterprise Admins group, member of Domain Admins group, Local account and member of Administrators group' (MS only) (Automated)

Profile Applicability:

- Level 3 - STIG Member Server

Description:

This policy setting prohibits users from connecting to a computer from across the network, which would allow users to access and potentially modify data remotely. In high security environments, there should be no need for remote users to access data on a computer. Instead, file sharing should be accomplished through the use of network servers. This user right supersedes the **Access this computer from the network** user right if an account is subject to both policies.

The STIG recommended state for this setting is to include: Guests, member of Enterprise Admins group, member of Domain Admins group, Local account and member of Administrators group.

Caution: Configuring a standalone (non-domain-joined) server as described above may result in an inability to remotely administer the server.

Note: The security identifier Local account and member of Administrators group is not available in Server 2008 R2 and Server 2012 (non-R2) unless [MSKB 2871997](#) has been installed.

Note #2: Configuring a Member Server or standalone server as described above may adversely affect applications that create a local service account and place it in the Administrators group - in which case you must either convert the application to use a domain-hosted service account, or remove Local account and member of Administrators group from this User Right Assignment. Using a domain-hosted service account is strongly preferred over making an exception to this rule, where possible.

Rationale:

Users who can log on to the computer over the network can enumerate lists of account names, group names, and shared resources. Users with permission to access shared folders and files can connect over the network and possibly view or modify data.

Impact:

If you configure the **Deny access to this computer from the network** user right for other groups, you could limit the abilities of users who are assigned to specific administrative roles in your environment. You should verify that delegated tasks will not be negatively affected.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path to include: Guests, member of Enterprise Admins group, member of Domain Admins group, Local account and member of Administrators group

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Deny access to this computer from the network

Default Value:

No one.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73759
Rule ID: SV-88423r3_rule
STIG ID: WN16-MS-000370
Severity: CAT II

CIS Controls:

Version 7

16.8 Disable Any Unassociated Accounts

Disable any account that cannot be associated with a business process or business owner.

2.2.23 (L1) Ensure 'Deny log on as a batch job' to include 'Guests' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller

Description:

This policy setting determines which accounts will not be able to log on to the computer as a batch job. A batch job is not a batch (.bat) file, but rather a batch-queue facility. Accounts that use the Task Scheduler to schedule jobs need this user right.

This user right supersedes the **Log on as a batch job** user right, which could be used to allow accounts to schedule jobs that consume excessive system resources. Such an occurrence could cause a DoS condition. Failure to assign this user right to the recommended accounts can be a security risk.

The recommended state for this setting is to include: Guests.

Rationale:

Accounts that have the **Log on as a batch job** user right could be used to schedule jobs that could consume excessive computer resources and cause a DoS condition.

Impact:

If you assign the **Deny log on as a batch job** user right to other accounts, you could deny users who are assigned to specific administrative roles the ability to perform their required job activities. You should confirm that delegated tasks will not be affected adversely.

For example, if you assign this user right to the `IWAM_(ComputerName)` account, the MSM Management Point will fail. On a newly installed computer that runs Windows Server 2003 this account does not belong to the Guests group, but on a computer that was upgraded from Windows 2000 this account is a member of the Guests group. Therefore, it is important that you understand which accounts belong to any groups that you assign the **Deny log on as a batch job** user right.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Guests:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Deny log on as a batch job

Default Value:

No one.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73761
Rule ID: SV-88425r2_rule
STIG ID: WN16-DC-000380
Severity: CAT II

Note: This recommendation is intended for Domain Controllers only. The setting for Member Servers, according to the STIG, is located in the L3 Member Server profile.

CIS Controls:

Version 7

16.8 Disable Any Unassociated Accounts

Disable any account that cannot be associated with a business process or business owner.

2.2.24 (L3) Ensure 'Deny log on as a batch job' to include 'Guests, member of Enterprise Admins group and member of Domain Admins group' (Automated)

Profile Applicability:

- Level 3 - STIG Member Server

Description:

This policy setting determines which accounts will not be able to log on to the computer as a batch job. A batch job is not a batch (.bat) file, but rather a batch-queue facility. Accounts that use the Task Scheduler to schedule jobs need this user right.

This user right supersedes the **Log on as a batch job** user right, which could be used to allow accounts to schedule jobs that consume excessive system resources. Such an occurrence could cause a DoS condition. Failure to assign this user right to the recommended accounts can be a security risk.

The STIG recommended state for this setting is to include: Guests, member of Enterprise Admins group and member of Domain Admins group.

Rationale:

Accounts that have the **Log on as a batch job** user right could be used to schedule jobs that could consume excessive computer resources and cause a DoS condition.

Impact:

If you assign the **Deny log on as a batch job** user right to other accounts, you could deny users who are assigned to specific administrative roles the ability to perform their required job activities. You should confirm that delegated tasks will not be affected adversely.

For example, if you assign this user right to the `IWAM_(ComputerName)` account, the MSM Management Point will fail. On a newly installed computer that runs Windows Server 2003 this account does not belong to the `Guests` group, but on a computer that was upgraded from Windows 2000 this account is a member of the `Guests` group. Therefore, it is important that you understand which accounts belong to any groups that you assign the **Deny log on as a batch job** user right.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Guests, member of Enterprise Admins group and member of Domain Admins group:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Deny log on as a batch job

Default Value:

No one.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73761
Rule ID: SV-88425r2_rule
STIG ID: WN16-DC-000380
Severity: CAT II

Note: This recommendation is intended for Domain Controllers only. The setting for Member Servers, according to the STIG, is located in the L3 Member Server profile.

CIS Controls:

Version 7

16.8 Disable Any Unassociated Accounts

Disable any account that cannot be associated with a business process or business owner.

2.2.25 (L1) Ensure 'Deny log on as a service' to include 'Guests' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server

Description:

This security setting determines which service accounts are prevented from registering a process as a service. This user right supersedes the **Log on as a service** user right if an account is subject to both policies.

The recommended state for this setting is to include: Guests.

Note: This security setting does not apply to the System, Local Service, or Network Service accounts.

Rationale:

Accounts that can log on as a service could be used to configure and start new unauthorized services, such as a keylogger or other malicious software. The benefit of the specified countermeasure is somewhat reduced by the fact that only users with administrative privileges can install and configure services, and an attacker who has already attained that level of access could configure the service to run with the System account.

Impact:

If you assign the **Deny log on as a service** user right to specific accounts, services may not be able to start and a DoS condition could result.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Guests:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Deny log on as a service

Default Value:

No one.

CIS Controls:

Version 7

16.8 Disable Any Unassociated Accounts

Disable any account that cannot be associated with a business process or business owner.

2.2.26 (L3) Ensure 'Deny log on as a service' is set to 'No One' (DC Only) (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller

Description:

This security setting determines which service accounts are prevented from registering a process as a service. This user right supersedes the **Log on as a service** user right if an account is subject to both policies.

The STIG recommended state for this setting is to: No One.

Note: This security setting does not apply to the System, Local Service, or Network Service accounts.

Rationale:

Accounts that can log on as a service could be used to configure and start new unauthorized services, such as a keylogger or other malicious software. The benefit of the specified countermeasure is somewhat reduced by the fact that only users with administrative privileges can install and configure services, and an attacker who has already attained that level of access could configure the service to run with the System account.

Impact:

If you assign the **Deny log on as a service** user right to specific accounts, services may not be able to start and a DoS condition could result.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to No One:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Deny log on as a service

Default Value:

No One (blank).

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73765
Rule ID: SV-88429r2_rule
STIG ID: WN16-DC-000390
Severity: CAT II

CIS Controls:

Version 7

16.8 Disable Any Unassociated Accounts

Disable any account that cannot be associated with a business process or business owner.

2.2.27 (L3) Ensure 'Deny log on as a service' to include 'members of Enterprise Admin group and members of Domain Admin group' (MS only) (Automated)

Profile Applicability:

- Level 3 - STIG Member Server

Description:

This security setting determines which service accounts are prevented from registering a process as a service. This user right supersedes the **Log on as a service** user right if an account is subject to both policies.

The STIG recommended state for this setting is to include: members of Enterprise Admin group and members of Domain Admin group.

Note: This security setting does not apply to the System, Local Service, or Network Service accounts.

Rationale:

Accounts that can log on as a service could be used to configure and start new unauthorized services, such as a keylogger or other malicious software. The benefit of the specified countermeasure is somewhat reduced by the fact that only users with administrative privileges can install and configure services, and an attacker who has already attained that level of access could configure the service to run with the System account.

Impact:

If you assign the **Deny log on as a service** user right to specific accounts, services may not be able to start and a DoS condition could result.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include members of Enterprise Admin group and members of Domain Admin group:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Deny log on as a service

Default Value:

No One (blank).

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73767
Rule ID: SV-88431r2_rule
STIG ID: WN16-MS-000390
Severity: CAT II

CIS Controls:

Version 7

16.8 Disable Any Unassociated Accounts

Disable any account that cannot be associated with a business process or business owner.

2.2.28 (L1) Ensure 'Deny log on locally' to include 'Guests' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller

Description:

This security setting determines which users are prevented from logging on at the computer. This policy setting supersedes the **Allow log on locally** policy setting if an account is subject to both policies.

The recommended state for this setting is to include: Guests.

Important: If you apply this security policy to the Everyone group, no one will be able to log on locally.

Rationale:

Any account with the ability to log on locally could be used to log on at the console of the computer. If this user right is not restricted to legitimate users who need to log on to the console of the computer, unauthorized users might download and run malicious software that elevates their privileges.

Impact:

If you assign the **Deny log on locally** user right to additional accounts, you could limit the abilities of users who are assigned to specific roles in your environment. However, this user right should explicitly be assigned to the ASPNET account on computers that run IIS 6.0. You should confirm that delegated activities will not be adversely affected.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Guests:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Deny log on locally

Default Value:

No one.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73769
Rule ID: SV-88433r2_rule
STIG ID: WN16-DC-000400
Severity: CAT II

Note: This recommendation is intended for Domain Controllers only. The setting for Member Servers, according to the STIG, is located in the L3 Member Server profile.

CIS Controls:

Version 7

16.8 Disable Any Unassociated Accounts

Disable any account that cannot be associated with a business process or business owner.

2.2.29 (L3) Ensure 'Deny log on locally' to include 'Guests, members of Enterprise Admins group and members of Domain Admins group' (MS Only) (Automated)

Profile Applicability:

- Level 3 - STIG Member Server

Description:

This security setting determines which users are prevented from logging on at the computer. This policy setting supersedes the **Allow log on locally** policy setting if an account is subject to both policies.

The STIG recommended state for this setting is to include: Guests, members of Enterprise Admins group and members of Domain Admins group.

Important: If you apply this security policy to the Everyone group, no one will be able to log on locally.

Important #2: The *Microsoft Windows Server 2016 Security Technical Implementation Guide (STIG)* denies Enterprise Admins and Domain Admins from logging on locally. This will cause Administrators with these privileges not to be able to log on locally.

Rationale:

Any account with the ability to log on locally could be used to log on at the console of the computer. If this user right is not restricted to legitimate users who need to log on to the console of the computer, unauthorized users might download and run malicious software that elevates their privileges.

Impact:

If you assign the **Deny log on locally** user right to additional accounts, you could limit the abilities of users who are assigned to specific roles in your environment. However, this user right should explicitly be assigned to the ASPNET account on computers that run IIS 6.0. You should confirm that delegated activities will not be adversely affected.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include:
Guests, members of Enterprise Admins group and members of Domain Admins group

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Deny log on locally

Default Value:

No One (blank).

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73771
Rule ID: SV-88435r3_rule
STIG ID: WN16-MS-000400
Severity: CAT II

Note: This recommendation is intended for Domain Controllers only. The setting for Member Servers, according to the STIG, is located in the L3 Member Server profile.

CIS Controls:

Version 7

16.8 Disable Any Unassociated Accounts

Disable any account that cannot be associated with a business process or business owner.

2.2.30 (L1) Ensure 'Deny log on through Remote Desktop Services' to include 'Guests' (DC only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller

Description:

This policy setting determines whether users can log on as Remote Desktop clients. After the baseline Member Server is joined to a domain environment, there is no need to use local accounts to access the server from the network. Domain accounts can access the server for administration and end-user processing. This user right supersedes the **Allow log on through Remote Desktop Services** user right if an account is subject to both policies.

The recommended state for this setting is to include: Guests.

Caution: Configuring a standalone (non-domain-joined) server as described above may result in an inability to remotely administer the server.

Note: The security identifier Local account is not available in Server 2008 R2 and Server 2012 (non-R2) unless [MSKB 2871997](#) has been installed.

Note #2: In all versions of Windows Server prior to Server 2008 R2, **Remote Desktop Services** was known as **Terminal Services**, so you should substitute the older term if comparing against an older OS.

Rationale:

Any account with the right to log on through Remote Desktop Services could be used to log on to the remote console of the computer. If this user right is not restricted to legitimate users who need to log on to the console of the computer, unauthorized users might download and run malicious software that elevates their privileges.

Impact:

If you assign the **Deny log on through Remote Desktop Services** user right to other groups, you could limit the abilities of users who are assigned to specific administrative roles in your environment. Accounts that have this user right will be unable to connect to the computer through either Remote Desktop Services or Remote Assistance. You should confirm that delegated tasks will not be negatively impacted.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Deny log on through Remote Desktop Services

Default Value:

No one.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73773
Rule ID: SV-88437r2_rule
STIG ID: WN16-DC-000410
Severity: CAT II

CIS Controls:

Version 7

16.8 Disable Any Unassociated Accounts

Disable any account that cannot be associated with a business process or business owner.

2.2.31 (L1) Ensure 'Deny log on through Remote Desktop Services' is set to 'Guests, Local account' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server

Description:

This policy setting determines whether users can log on as Remote Desktop clients. After the baseline Member Server is joined to a domain environment, there is no need to use local accounts to access the server from the network. Domain accounts can access the server for administration and end-user processing. This user right supersedes the **Allow log on through Remote Desktop Services** user right if an account is subject to both policies.

The recommended state for this setting is: Guests, Local account.

Caution: Configuring a standalone (non-domain-joined) server as described above may result in an inability to remotely administer the server.

Note: The security identifier Local account is not available in Server 2008 R2 and Server 2012 (non-R2) unless [MSKB 2871997](#) has been installed.

Note #2: In all versions of Windows Server prior to Server 2008 R2, **Remote Desktop Services** was known as **Terminal Services**, so you should substitute the older term if comparing against an older OS.

Rationale:

Any account with the right to log on through Remote Desktop Services could be used to log on to the remote console of the computer. If this user right is not restricted to legitimate users who need to log on to the console of the computer, unauthorized users might download and run malicious software that elevates their privileges.

Impact:

If you assign the **Deny log on through Remote Desktop Services** user right to other groups, you could limit the abilities of users who are assigned to specific administrative roles in your environment. Accounts that have this user right will be unable to connect to the computer through either Remote Desktop Services or Remote Assistance. You should confirm that delegated tasks will not be negatively impacted.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Deny log on through Remote Desktop Services

Default Value:

No one.

CIS Controls:

Version 7

16.8 Disable Any Unassociated Accounts

Disable any account that cannot be associated with a business process or business owner.

2.2.32 (L3) Ensure 'Deny log on through Remote Desktop Services' is set to include 'Guests, members of Enterprise Admins group, members of Domain admins group and Local account' (MS only) (Automated)

Profile Applicability:

- Level 3 - STIG Member Server

Description:

This policy setting determines whether users can log on as Remote Desktop clients. After the baseline Member Server is joined to a domain environment, there is no need to use local accounts to access the server from the network. Domain accounts can access the server for administration and end-user processing. This user right supersedes the **Allow log on through Remote Desktop Services** user right if an account is subject to both policies.

The STIG recommended state for this setting is: Guests, members of Enterprise Admins group, members of Domain admins group and Local account.

Caution: Configuring a standalone (non-domain-joined) server as described above may result in an inability to remotely administer the server.

Note: The security identifier `Local account` is not available in Server 2008 R2 and Server 2012 (non-R2) unless [MSKB 2871997](#) has been installed.

Note #2: In all versions of Windows Server prior to Server 2008 R2, **Remote Desktop Services** was known as **Terminal Services**, so you should substitute the older term if comparing against an older OS.

Rationale:

Any account with the right to log on through Remote Desktop Services could be used to log on to the remote console of the computer. If this user right is not restricted to legitimate users who need to log on to the console of the computer, unauthorized users might download and run malicious software that elevates their privileges.

Impact:

If you assign the **Deny log on through Remote Desktop Services** user right to other groups, you could limit the abilities of users who are assigned to specific administrative roles in your environment. Accounts that have this user right will be unable to connect to the computer through either Remote Desktop Services or Remote Assistance. You should confirm that delegated tasks will not be negatively impacted.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path to include: Guests, members of Enterprise Admins group, members of Domain admins group and Local account

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Deny log on through Remote Desktop Services

Default Value:

No One (blank).

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73775
Rule ID: SV-88439r3_rule
STIG ID: WN16-MS-000410
Severity: CAT II

CIS Controls:

Version 7

16.8 Disable Any Unassociated Accounts

Disable any account that cannot be associated with a business process or business owner.

2.2.33 (L1) Ensure 'Enable computer and user accounts to be trusted for delegation' is set to 'Administrators' (DC only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller

Description:

This policy setting allows users to change the Trusted for Delegation setting on a computer object in Active Directory. Abuse of this privilege could allow unauthorized users to impersonate other users on the network.

The recommended state for this setting is: Administrators.

Note: This user right is considered a "sensitive privilege" for the purposes of auditing.

Rationale:

Misuse of the **Enable computer and user accounts to be trusted for delegation** user right could allow unauthorized users to impersonate other users on the network. An attacker could exploit this privilege to gain access to network resources and make it difficult to determine what has happened after a security incident.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Enable computer and user accounts to be trusted for delegation

Default Value:

Administrators.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73777
Rule ID: SV-88441r2_rule
STIG ID: WN16-DC-000420
Severity: CAT II

CIS Controls:

Version 7

4.1 Maintain Inventory of Administrative Accounts

Use automated tools to inventory all administrative accounts, including domain and local accounts, to ensure that only authorized individuals have elevated privileges.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.34 (L1) Ensure 'Enable computer and user accounts to be trusted for delegation' is set to 'No One' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

This policy setting allows users to change the Trusted for Delegation setting on a computer object in Active Directory. Abuse of this privilege could allow unauthorized users to impersonate other users on the network.

The recommended state for this setting is: No One.

Note: This user right is considered a "sensitive privilege" for the purposes of auditing.

Rationale:

Misuse of the **Enable computer and user accounts to be trusted for delegation** user right could allow unauthorized users to impersonate other users on the network. An attacker could exploit this privilege to gain access to network resources and make it difficult to determine what has happened after a security incident.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Enable computer and user accounts to be trusted for delegation

Default Value:

No one.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73779
Rule ID: SV-88443r2_rule
STIG ID: WN16-MS-000420
Severity: CAT II

CIS Controls:

Version 7

4.8 Log and Alert on Changes to Administrative Group Membership

Configure systems to issue a log entry and alert when an account is added to or removed from any group assigned administrative privileges.

2.2.35 (L1) Ensure 'Force shutdown from a remote system' is set to 'Administrators' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows users to shut down Windows Vista-based and newer computers from remote locations on the network. Anyone who has been assigned this user right can cause a denial of service (DoS) condition, which would make the computer unavailable to service user requests. Therefore, it is recommended that only highly trusted administrators be assigned this user right.

The recommended state for this setting is: Administrators.

Rationale:

Any user who can shut down a computer could cause a DoS condition to occur. Therefore, this user right should be tightly restricted.

Impact:

If you remove the **Force shutdown from a remote system** user right from the Server Operators group you could limit the abilities of users who are assigned to specific administrative roles in your environment. You should confirm that delegated activities will not be adversely affected.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Administrators:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Force shutdown from a remote system

Default Value:

On Member Servers: Administrators.

On Domain Controllers: Administrators, Server Operators.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73781
Rule ID: SV-88445r2_rule
STIG ID: WN16-UR-000200
Severity: CAT II

CIS Controls:

Version 7

4.1 Maintain Inventory of Administrative Accounts

Use automated tools to inventory all administrative accounts, including domain and local accounts, to ensure that only authorized individuals have elevated privileges.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.36 (L1) Ensure 'Generate security audits' is set to 'LOCAL SERVICE, NETWORK SERVICE' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines which users or processes can generate audit records in the Security log.

The recommended state for this setting is: LOCAL SERVICE, NETWORK SERVICE.

Note: This user right is considered a "sensitive privilege" for the purposes of auditing.

Note #2: A Member Server that holds the *Web Server (IIS)* Role with *Web Server Role Service* will require a special exception to this recommendation, to allow IIS application pool(s) to be granted this user right.

Note #3: A Member Server that holds the *Active Directory Federation Services* Role will require a special exception to this recommendation, to allow the NT SERVICE\ADFSRV and NT SERVICE\DRS services, as well as the associated Active Directory Federation Services service account, to be granted this user right.

Rationale:

An attacker could use this capability to create a large number of audited events, which would make it more difficult for a system administrator to locate any illicit activity. Also, if the event log is configured to overwrite events as needed, any evidence of unauthorized activities could be overwritten by a large number of unrelated events.

Impact:

On most computers, this is the default configuration and there will be no negative impact. However, if you have installed the *Web Server (IIS)* Role with *Web Services Role Service*, you will need to allow the IIS application pool(s) to be granted this user right.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to LOCAL SERVICE, NETWORK SERVICE:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Generate security audits

Default Value:

LOCAL SERVICE, NETWORK SERVICE.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73783
Rule ID: SV-88447r2_rule
STIG ID: WN16-UR-000210
Severity: CAT II

CIS Controls:

Version 7

4.4 Use Unique Passwords

Where multi-factor authentication is not supported (such as local administrator, root, or service accounts), accounts will use passwords that are unique to that system.

2.2.37 (L1) Ensure 'Impersonate a client after authentication' is set to 'Administrators, LOCAL SERVICE, NETWORK SERVICE, SERVICE' (DC only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller

Description:

The policy setting allows programs that run on behalf of a user to impersonate that user (or another specified account) so that they can act on behalf of the user. If this user right is required for this kind of impersonation, an unauthorized user will not be able to convince a client to connect—for example, by remote procedure call (RPC) or named pipes—to a service that they have created to impersonate that client, which could elevate the unauthorized user's permissions to administrative or system levels.

Services that are started by the Service Control Manager have the built-in Service group added by default to their access tokens. COM servers that are started by the COM infrastructure and configured to run under a specific account also have the Service group added to their access tokens. As a result, these processes are assigned this user right when they are started.

Also, a user can impersonate an access token if any of the following conditions exist:

- The access token that is being impersonated is for this user.
- The user, in this logon session, logged on to the network with explicit credentials to create the access token.
- The requested level is less than Impersonate, such as Anonymous or Identify.

An attacker with the **Impersonate a client after authentication** user right could create a service, trick a client to make them connect to the service, and then impersonate that client to elevate the attacker's level of access to that of the client.

The recommended state for this setting is: Administrators, LOCAL SERVICE, NETWORK SERVICE, SERVICE.

Note: This user right is considered a "sensitive privilege" for the purposes of auditing.

Note #2: A Member Server with Microsoft SQL Server *and* its optional "Integration Services" component installed will require a special exception to this recommendation for additional SQL-generated entries to be granted this user right.

Rationale:

An attacker with the **Impersonate a client after authentication** user right could create a service, trick a client to make them connect to the service, and then impersonate that client to elevate the attacker's level of access to that of the client.

Impact:

In most cases this configuration will have no impact. If you have installed the *Web Server (IIS)* Role with *Web Services* Role Service, you will need to also assign the user right to IIS_IUSRS.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Impersonate a client after authentication

Default Value:

Administrators, LOCAL SERVICE, NETWORK SERVICE, SERVICE.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73783
Rule ID: SV-88449r2_rule
STIG ID: WN16-UR-000220
Severity: CAT II

CIS Controls:

Version 7

4.4 Use Unique Passwords

Where multi-factor authentication is not supported (such as local administrator, root, or service accounts), accounts will use passwords that are unique to that system.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.38 (L1) Ensure 'Impersonate a client after authentication' is set to 'Administrators, LOCAL SERVICE, NETWORK SERVICE, SERVICE' and (when the Web Server (IIS) Role with Web Services Role Service is installed) 'IIS_IUSRS' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

The policy setting allows programs that run on behalf of a user to impersonate that user (or another specified account) so that they can act on behalf of the user. If this user right is required for this kind of impersonation, an unauthorized user will not be able to convince a client to connect—for example, by remote procedure call (RPC) or named pipes—to a service that they have created to impersonate that client, which could elevate the unauthorized user's permissions to administrative or system levels.

Services that are started by the Service Control Manager have the built-in Service group added by default to their access tokens. COM servers that are started by the COM infrastructure and configured to run under a specific account also have the Service group added to their access tokens. As a result, these processes are assigned this user right when they are started.

Also, a user can impersonate an access token if any of the following conditions exist:

- The access token that is being impersonated is for this user.
- The user, in this logon session, logged on to the network with explicit credentials to create the access token.
- The requested level is less than Impersonate, such as Anonymous or Identify.

An attacker with the **Impersonate a client after authentication** user right could create a service, trick a client to make them connect to the service, and then impersonate that client to elevate the attacker's level of access to that of the client.

The recommended state for this setting is: Administrators, LOCAL SERVICE, NETWORK SERVICE, SERVICE and (when the *Web Server (IIS)* Role with *Web Services* Role Service is installed) IIS_IUSRS.

Note: This user right is considered a "sensitive privilege" for the purposes of auditing.

Note #2: A Member Server with Microsoft SQL Server *and* its optional "Integration Services" component installed will require a special exception to this recommendation for additional SQL-generated entries to be granted this user right.

Rationale:

An attacker with the **Impersonate a client after authentication** user right could create a service, trick a client to make them connect to the service, and then impersonate that client to elevate the attacker's level of access to that of the client.

Impact:

In most cases this configuration will have no impact. If you have installed the *Web Server (IIS)* Role with *Web Services* Role Service, you will need to also assign the user right to IIS_IUSRS.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Impersonate a client after authentication

Default Value:

Administrators, LOCAL SERVICE, NETWORK SERVICE, SERVICE.

CIS Controls:

Version 7

4.4 Use Unique Passwords

Where multi-factor authentication is not supported (such as local administrator, root, or service accounts), accounts will use passwords that are unique to that system.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.39 (L3) Ensure 'Impersonate a client after authentication' is set to 'Administrators, LOCAL SERVICE, NETWORK SERVICE, SERVICE' (MS only) (Automated)

Profile Applicability:

- Level 3 - STIG Member Server

Description:

The policy setting allows programs that run on behalf of a user to impersonate that user (or another specified account) so that they can act on behalf of the user. If this user right is required for this kind of impersonation, an unauthorized user will not be able to convince a client to connect—for example, by remote procedure call (RPC) or named pipes—to a service that they have created to impersonate that client, which could elevate the unauthorized user's permissions to administrative or system levels.

Services that are started by the Service Control Manager have the built-in Service group added by default to their access tokens. COM servers that are started by the COM infrastructure and configured to run under a specific account also have the Service group added to their access tokens. As a result, these processes are assigned this user right when they are started.

Also, a user can impersonate an access token if any of the following conditions exist:

- The access token that is being impersonated is for this user.
- The user, in this logon session, logged on to the network with explicit credentials to create the access token.
- The requested level is less than Impersonate, such as Anonymous or Identify.

An attacker with the **Impersonate a client after authentication** user right could create a service, trick a client to make them connect to the service, and then impersonate that client to elevate the attacker's level of access to that of the client.

The STIG recommended state for this setting is: Administrators, LOCAL SERVICE, NETWORK SERVICE, SERVICE.

Note: This user right is considered a "sensitive privilege" for the purposes of auditing.

Note #2: A Member Server with Microsoft SQL Server *and* its optional "Integration Services" component installed will require a special exception to this recommendation for additional SQL-generated entries to be granted this user right.

Rationale:

An attacker with the **Impersonate a client after authentication** user right could create a service, trick a client to make them connect to the service, and then impersonate that client to elevate the attacker's level of access to that of the client.

Impact:

In most cases this configuration will have no impact. If you have installed the *Web Server (IIS)* Role with *Web Services* Role Service, you will need to also assign the user right to `IIS_IUSRS`.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path to include: `Administrators`, `LOCAL SERVICE`, `NETWORK SERVICE`, `SERVICE`

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Impersonate a client after authentication

Default Value:

`Administrators`, `LOCAL SERVICE`, `NETWORK SERVICE`, `SERVICE`.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73785
Rule ID: SV-88449r2_rule
STIG ID: WN16-UR-000220
Severity: CAT II

CIS Controls:

Version 7

4.4 Use Unique Passwords

Where multi-factor authentication is not supported (such as local administrator, root, or service accounts), accounts will use passwords that are unique to that system.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.40 (L1) Ensure 'Increase scheduling priority' is set to 'Administrators' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether users can increase the base priority class of a process. (It is not a privileged operation to increase relative priority within a priority class.) This user right is not required by administrative tools that are supplied with the operating system but might be required by software development tools.

The recommended state for this setting is: Administrators.

Rationale:

A user who is assigned this user right could increase the scheduling priority of a process to Real-Time, which would leave little processing time for all other processes and could lead to a DoS condition.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Administrators:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Increase scheduling priority

Default Value:

On Windows Server 2016 or older: Administrators.

On Windows Server 2019 or newer: Administrators, Window Manager\Window Manager Group.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73787
Rule ID: SV-88451r2_rule
STIG ID: WN16-UR-000230
Severity: CAT II

CIS Controls:

Version 7

4.1 Maintain Inventory of Administrative Accounts

Use automated tools to inventory all administrative accounts, including domain and local accounts, to ensure that only authorized individuals have elevated privileges.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.41 (L1) Ensure 'Load and unload device drivers' is set to 'Administrators' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows users to dynamically load a new device driver on a system. An attacker could potentially use this capability to install malicious code that appears to be a device driver. This user right is required for users to add local printers or printer drivers in Windows Vista.

The recommended state for this setting is: Administrators.

Note: This user right is considered a "sensitive privilege" for the purposes of auditing.

Rationale:

Device drivers run as highly privileged code. A user who has the **Load and unload device drivers** user right could unintentionally install malicious code that masquerades as a device driver. Administrators should exercise greater care and install only drivers with verified digital signatures.

Impact:

If you remove the **Load and unload device drivers** user right from the Print Operators group or other accounts you could limit the abilities of users who are assigned to specific administrative roles in your environment. You should ensure that delegated tasks will not be negatively affected.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Administrators:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Load and unload device drivers

Default Value:

On Member Servers: Administrators.

On Domain Controllers: Administrators, Print Operators.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73789
Rule ID: SV-88453r2_rule
STIG ID: WN16-UR-000240
Severity: CAT II

CIS Controls:

Version 7

4.1 Maintain Inventory of Administrative Accounts

Use automated tools to inventory all administrative accounts, including domain and local accounts, to ensure that only authorized individuals have elevated privileges.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.42 (L1) Ensure 'Lock pages in memory' is set to 'No One' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows a process to keep data in physical memory, which prevents the system from paging the data to virtual memory on disk. If this user right is assigned, significant degradation of system performance can occur.

The recommended state for this setting is: No One.

Note: A Member Server with Microsoft SQL Server installed will require a special exception to this recommendation for additional SQL-generated entries to be granted this user right.

Rationale:

Users with the **Lock pages in memory** user right could assign physical memory to several processes, which could leave little or no RAM for other processes and result in a DoS condition.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to No One:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Lock pages in memory

Default Value:

No one.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73791
Rule ID: SV-88455r2_rule
STIG ID: WN16-UR-000250
Severity: CAT II

CIS Controls:

Version 7

4.8 Log and Alert on Changes to Administrative Group Membership

Configure systems to issue a log entry and alert when an account is added to or removed from any group assigned administrative privileges.

2.2.43 (L2) Ensure 'Log on as a batch job' is set to 'Administrators' (DC Only) (Automated)

Profile Applicability:

- Level 2 - Domain Controller

Description:

This policy setting allows accounts to log on using the task scheduler service. Because the task scheduler is often used for administrative purposes, it may be needed in enterprise environments. However, its use should be restricted in high security environments to prevent misuse of system resources or to prevent attackers from using the right to launch malicious code after gaining user level access to a computer.

The recommended state for this setting is: Administrators.

Rationale:

The **Log on as a batch job** user right presents a low-risk vulnerability. For most organizations, the default settings are sufficient.

Impact:

If you configure the **Log on as a batch job** setting through domain-based Group Policies, the computer will not be able to assign the user right to accounts that are used for scheduled jobs in the Task Scheduler. If you install optional components such as ASP.NET or IIS, you might need to assign this user right to additional accounts that are required by those components. For example, IIS requires assignment of this user right to the `IIS_WPG` group and the `IUSR_(ComputerName)`, `ASPNET`, and `IWAM_(ComputerName)` accounts. If this user right is not assigned to this group and these accounts, IIS will be unable to run some COM objects that are necessary for proper functionality.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Administrators:

Computer Configuration\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Log on as a batch job

Default Value:

Administrators, Backup Operators.

CIS Controls:

Version 7

4.3 Ensure the Use of Dedicated Administrative Accounts

Ensure that all users with administrative account access use a dedicated or secondary account for elevated activities. This account should only be used for administrative activities and not internet browsing, email, or similar activities.

2.2.44 (L1) Ensure 'Manage auditing and security log' is set to 'Administrators' and (when Exchange is running in the environment) 'Exchange Servers' (DC only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller

Description:

This policy setting determines which users can change the auditing options for files and directories and clear the Security log.

For environments running Microsoft Exchange Server, the Exchange Servers group must possess this privilege on Domain Controllers to properly function. Given this, DCs that grant the Exchange Servers group this privilege also conform to this benchmark. If the environment does not use Microsoft Exchange Server, then this privilege should be limited to only Administrators on DCs.

The recommended state for this setting is: Administrators and (when Exchange is running in the environment) Exchange Servers.

Note: This user right is considered a "sensitive privilege" for the purposes of auditing.

Rationale:

The ability to manage the Security event log is a powerful user right and it should be closely guarded. Anyone with this user right can clear the Security log to erase important evidence of unauthorized activity.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Manage auditing and security log

Default Value:

Administrators.

CIS Controls:

Version 7

4.1 Maintain Inventory of Administrative Accounts

Use automated tools to inventory all administrative accounts, including domain and local accounts, to ensure that only authorized individuals have elevated privileges.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

2.2.45 (L1) Ensure 'Manage auditing and security log' is set to 'Administrators' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

This policy setting determines which users can change the auditing options for files and directories and clear the Security log.

For environments running Microsoft Exchange Server, the `Exchange Servers` group must possess this privilege on Domain Controllers to properly function. Given this, DCs that grant the `Exchange Servers` group this privilege also conform to this benchmark. If the environment does not use Microsoft Exchange Server, then this privilege should be limited to only `Administrators` on DCs.

The recommended state for this setting is: `Administrators`.

Note: This user right is considered a "sensitive privilege" for the purposes of auditing.

Rationale:

The ability to manage the Security event log is a powerful user right and it should be closely guarded. Anyone with this user right can clear the Security log to erase important evidence of unauthorized activity.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Manage auditing and security log

Default Value:

Administrators.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73793
Rule ID: SV-88457r2_rule
STIG ID: WN16-UR-000260
Severity: CAT II

CIS Controls:

Version 7

4.1 Maintain Inventory of Administrative Accounts

Use automated tools to inventory all administrative accounts, including domain and local accounts, to ensure that only authorized individuals have elevated privileges.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

2.2.46 (L3) Ensure 'Manage auditing and security log' is set to 'Administrators' (DC only) (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller

Description:

This policy setting determines which users can change the auditing options for files and directories and clear the Security log.

For environments running Microsoft Exchange Server, the Exchange Servers group must possess this privilege on Domain Controllers to properly function. Given this, DCs that grant the Exchange Servers group this privilege also conform to this benchmark. If the environment does not use Microsoft Exchange Server, then this privilege should be limited to only Administrators on DCs.

The STIG recommended state for this setting is: Administrators.

Note: This user right is considered a "sensitive privilege" for the purposes of auditing.

Rationale:

The ability to manage the Security event log is a powerful user right and it should be closely guarded. Anyone with this user right can clear the Security log to erase important evidence of unauthorized activity.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path to include: Administrators

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Manage auditing and security log

Default Value:

Administrators.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73793
Rule ID: SV-88457r2_rule
STIG ID: WN16-UR-000260
Severity: CAT II

CIS Controls:

Version 7

4.1 Maintain Inventory of Administrative Accounts

Use automated tools to inventory all administrative accounts, including domain and local accounts, to ensure that only authorized individuals have elevated privileges.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

2.2.47 (L1) Ensure 'Modify an object label' is set to 'No One' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This privilege determines which user accounts can modify the integrity label of objects, such as files, registry keys, or processes owned by other users. Processes running under a user account can modify the label of an object owned by that user to a lower level without this privilege.

The recommended state for this setting is: No One.

Rationale:

By modifying the integrity label of an object owned by another user a malicious user may cause them to execute code at a higher level of privilege than intended.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to No One:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Modify an object label

Default Value:

No one.

CIS Controls:

Version 7

4.8 Log and Alert on Changes to Administrative Group Membership

Configure systems to issue a log entry and alert when an account is added to or removed from any group assigned administrative privileges.

2.2.48 (L1) Ensure 'Modify firmware environment values' is set to 'Administrators' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows users to configure the system-wide environment variables that affect hardware configuration. This information is typically stored in the Last Known Good Configuration. Modification of these values could lead to a hardware failure that would result in a denial of service condition.

The recommended state for this setting is: Administrators.

Note: This user right is considered a "sensitive privilege" for the purposes of auditing.

Rationale:

Anyone who is assigned the **Modify firmware environment values** user right could configure the settings of a hardware component to cause it to fail, which could lead to data corruption or a DoS condition.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Administrators:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Modify firmware environment values

Default Value:

Administrators.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73795
Rule ID: SV-88459r2_rule
STIG ID: WN16-UR-000270
Severity: CAT II

CIS Controls:

Version 7

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.49 (L1) Ensure 'Perform volume maintenance tasks' is set to 'Administrators' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows users to manage the system's volume or disk configuration, which could allow a user to delete a volume and cause data loss as well as a denial-of-service condition.

The recommended state for this setting is: Administrators.

Rationale:

A user who is assigned the **Perform volume maintenance tasks** user right could delete a volume, which could result in the loss of data or a DoS condition.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Administrators:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Perform volume maintenance tasks

Default Value:

Administrators.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73797
Rule ID: SV-88461r2_rule
STIG ID: WN16-UR-000280
Severity: CAT II

CIS Controls:

Version 7

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.50 (L1) Ensure 'Profile single process' is set to 'Administrators' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines which users can use tools to monitor the performance of non-system processes. Typically, you do not need to configure this user right to use the Microsoft Management Console (MMC) Performance snap-in. However, you do need this user right if System Monitor is configured to collect data using Windows Management Instrumentation (WMI). Restricting the **Profile single process** user right prevents intruders from gaining additional information that could be used to mount an attack on the system.

The recommended state for this setting is: Administrators.

Rationale:

The **Profile single process** user right presents a moderate vulnerability. An attacker with this user right could monitor a computer's performance to help identify critical processes that they might wish to attack directly. The attacker may also be able to determine what processes run on the computer so that they could identify countermeasures that they may need to avoid, such as antivirus software, an intrusion-detection system, or which other users are logged on to a computer.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Administrators:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Profile single process

Default Value:

Administrators.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73799
Rule ID: SV-88463r2_rule
STIG ID: WN16-UR-000290
Severity: CAT II

CIS Controls:

Version 7

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.51 (L1) Ensure 'Profile system performance' is set to 'Administrators, NT SERVICE\WdiServiceHost' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows users to use tools to view the performance of different system processes, which could be abused to allow attackers to determine a system's active processes and provide insight into the potential attack surface of the computer.

The recommended state for this setting is: Administrators, NT SERVICE\WdiServiceHost.

Rationale:

The **Profile system performance** user right poses a moderate vulnerability. Attackers with this user right could monitor a computer's performance to help identify critical processes that they might wish to attack directly. Attackers may also be able to determine what processes are active on the computer so that they could identify countermeasures that they may need to avoid, such as antivirus software or an intrusion detection system.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Administrators, NT SERVICE\WdiServiceHost:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Profile system performance

Default Value:

Windows Server 2008 (non-R2): Administrators.

Windows Server 2008 R2 and newer: Administrators, NT SERVICE\WdiServiceHost.

CIS Controls:

Version 7

4.4 Use Unique Passwords

Where multi-factor authentication is not supported (such as local administrator, root, or service accounts), accounts will use passwords that are unique to that system.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.52 (L1) Ensure 'Replace a process level token' is set to 'LOCAL SERVICE, NETWORK SERVICE' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Member Server
- Level 3 - STIG Domain Controller

Description:

This policy setting allows one process or service to start another service or process with a different security access token, which can be used to modify the security access token of that sub-process and result in the escalation of privileges.

The recommended state for this setting is: LOCAL SERVICE, NETWORK SERVICE.

Note: This user right is considered a "sensitive privilege" for the purposes of auditing.

Note #2: A Member Server that holds the *Web Server (IIS)* Role with *Web Server Role Service* will require a special exception to this recommendation, to allow IIS application pool(s) to be granted this user right.

Note #3: A Member Server with Microsoft SQL Server installed will require a special exception to this recommendation for additional SQL-generated entries to be granted this user right.

Rationale:

Users with the **Replace a process level token** privilege are able to start processes as other users whose credentials they know. They could use this method to hide their unauthorized actions on the computer. (On Windows 2000-based computers, use of the **Replace a process level token** user right also requires the user to have the **Adjust memory quotas for a process** user right that is discussed earlier in this section.)

Impact:

On most computers, this is the default configuration and there will be no negative impact. However, if you have installed the *Web Server (IIS)* Role with *Web Services Role Service*, you will need to allow the IIS application pool(s) to be granted this User Right Assignment.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to LOCAL SERVICE, NETWORK SERVICE:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Replace a process level token

Default Value:

LOCAL SERVICE, NETWORK SERVICE.

CIS Controls:

Version 7

4.4 Use Unique Passwords

Where multi-factor authentication is not supported (such as local administrator, root, or service accounts), accounts will use passwords that are unique to that system.

2.2.53 (L1) Ensure 'Restore files and directories' is set to 'Administrators' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines which users can bypass file, directory, registry, and other persistent object permissions when restoring backed up files and directories on computers that run Windows Vista (or newer) in your environment. This user right also determines which users can set valid security principals as object owners; it is similar to the **Backup files and directories** user right.

The recommended state for this setting is: Administrators.

Note: This user right is considered a "sensitive privilege" for the purposes of auditing.

Rationale:

An attacker with the **Restore files and directories** user right could restore sensitive data to a computer and overwrite data that is more recent, which could lead to loss of important data, data corruption, or a denial of service. Attackers could overwrite executable files that are used by legitimate administrators or system services with versions that include malicious software to grant themselves elevated privileges, compromise data, or install backdoors for continued access to the computer.

Note: Even if the following countermeasure is configured, an attacker could still restore data to a computer in a domain that is controlled by the attacker. Therefore, it is critical that organizations carefully protect the media that is used to back up data.

Impact:

If you remove the **Restore files and directories** user right from the **Backup Operators** group and other accounts you could make it impossible for users who have been delegated specific tasks to perform those tasks. You should verify that this change won't negatively affect the ability of your organization's personnel to do their jobs.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Administrators:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Restore files and directories

Default Value:

On Member Servers: Administrators, Backup Operators.

On Domain Controllers: Administrators, Backup Operators, Server Operators.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73801
Rule ID: SV-88465r2_rule
STIG ID: WN16-UR-000300
Severity: CAT II

CIS Controls:

Version 7

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.54 (L1) Ensure 'Shut down the system' is set to 'Administrators' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines which users who are logged on locally to the computers in your environment can shut down the operating system with the Shut Down command. Misuse of this user right can result in a denial of service condition.

The recommended state for this setting is: Administrators.

Rationale:

The ability to shut down Domain Controllers and Member Servers should be limited to a very small number of trusted Administrators. Although the **Shut down the system** user right requires the ability to log on to the server, you should be very careful about which accounts and groups you allow to shut down a Domain Controller or Member Server.

When a Domain Controller is shut down, it is no longer available to process logons, serve Group Policy, and answer Lightweight Directory Access Protocol (LDAP) queries. If you shut down Domain Controllers that possess Flexible Single Master Operations (FSMO) roles, you can disable key domain functionality, such as processing logons for new passwords — one of the functions of the Primary Domain Controller (PDC) Emulator role.

Impact:

The impact of removing these default groups from the **Shut down the system** user right could limit the delegated abilities of assigned roles in your environment. You should confirm that delegated activities will not be adversely affected.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Administrators:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Shut down the system

Default Value:

On Member Servers: Administrators, Backup Operators.

On Domain Controllers: Administrators, Backup Operators, Server Operators, Print Operators.

CIS Controls:

Version 7

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.2.55 (L1) Ensure 'Synchronize directory service data' is set to 'No One' (DC only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller

Description:

This security setting determines which users and groups have the authority to synchronize all directory service data. This is also known as Active Directory synchronization.

The recommended state for this setting is: No One.

Rationale:

The **Synchronize directory service data** user right affects Domain Controllers; only Domain Controllers should be able to synchronize directory service data. Domain Controllers have this user right inherently, because the synchronization process runs in the context of the `System` account on Domain Controllers. Attackers who have this user right can view all information stored within the directory. They could then use some of that information to facilitate additional attacks or expose sensitive data, such as direct telephone numbers or physical addresses.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to No One:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Synchronize directory service data

Default Value:

No one.

CIS Controls:

Version 7

4.8 Log and Alert on Changes to Administrative Group Membership

Configure systems to issue a log entry and alert when an account is added to or removed from any group assigned administrative privileges.

2.2.56 (L1) Ensure 'Take ownership of files or other objects' is set to 'Administrators' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows users to take ownership of files, folders, registry keys, processes, or threads. This user right bypasses any permissions that are in place to protect objects to give ownership to the specified user.

The recommended state for this setting is: Administrators.

Note: This user right is considered a "sensitive privilege" for the purposes of auditing.

Rationale:

Any users with the **Take ownership of files or other objects** user right can take control of any object, regardless of the permissions on that object, and then make any changes they wish to that object. Such changes could result in exposure of data, corruption of data, or a DoS condition.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Administrators:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\User Rights Assignment\Take ownership of files or other objects

Default Value:

Administrators.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73803
Rule ID: SV-88467r2_rule
STIG ID: WN16-UR-000310
Severity: CAT II

CIS Controls:

Version 7

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.3 Security Options

This section contains recommendations for security options.

2.3.1 Accounts

This section contains recommendations related to default accounts.

2.3.1.1 (L1) Ensure 'Accounts: Administrator account status' is set to 'Disabled' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

This policy setting enables or disables the Administrator account during normal operation. When a computer is booted into safe mode, the Administrator account is always enabled, regardless of how this setting is configured. Note that this setting will have no impact when applied to the Domain Controllers organizational unit via group policy because Domain Controllers have no local account database. It can be configured at the domain level via group policy, similar to account lockout and password policy settings.

The recommended state for this setting is: Disabled.

Rationale:

In some organizations, it can be a daunting management challenge to maintain a regular schedule for periodic password changes for local accounts. Therefore, you may want to disable the built-in Administrator account instead of relying on regular password changes to protect it from attack. Another reason to disable this built-in account is that it cannot be locked out no matter how many failed logons it accrues, which makes it a prime target for brute force attacks that attempt to guess passwords. Also, this account has a well-known security identifier (SID) and there are third-party tools that allow authentication by using the SID rather than the account name. This capability means that even if you rename the Administrator account, an attacker could launch a brute force attack by using the SID to log on.

Impact:

Maintenance issues can arise under certain circumstances if you disable the Administrator account. For example, if the secure channel between a member computer and the Domain Controller fails in a domain environment for any reason and there is no other local Administrator account, you must restart in safe mode to fix the problem that broke the secure channel.

If the current Administrator password does not meet the password requirements, you will not be able to re-enable the Administrator account after it is disabled. If this situation occurs, another member of the Administrators group must set the password on the Administrator account with the Local Users and Groups tool.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Accounts: Administrator account status

Default Value:

Disabled.

CIS Controls:

Version 7

16.8 Disable Any Unassociated Accounts

Disable any account that cannot be associated with a business process or business owner.

2.3.1.2 (L1) Ensure 'Accounts: Block Microsoft accounts' is set to 'Users can't add or log on with Microsoft accounts' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting prevents users from adding new Microsoft accounts on this computer.

The recommended state for this setting is: Users can't add or log on with Microsoft accounts.

Rationale:

Organizations that want to effectively implement identity management policies and maintain firm control of what accounts are used to log onto their computers will probably want to block Microsoft accounts. Organizations may also need to block Microsoft accounts in order to meet the requirements of compliance standards that apply to their information systems.

Impact:

Users will not be able to log onto the computer with their Microsoft account.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System:
NoConnectedUser

Remediation:

To establish the recommended configuration via GP, set the following UI path to Users can't add or log on with Microsoft accounts:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Accounts: Block Microsoft accounts

Default Value:

Users are able to use Microsoft accounts with Windows.

CIS Controls:

Version 7

16.8 Disable Any Unassociated Accounts

Disable any account that cannot be associated with a business process or business owner.

2.3.1.3 (L1) Ensure 'Accounts: Guest account status' is set to 'Disabled' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

This policy setting determines whether the Guest account is enabled or disabled. The Guest account allows unauthenticated network users to gain access to the system.

The recommended state for this setting is: Disabled.

Note: This setting will have no impact when applied to the Domain Controllers organizational unit via group policy because Domain Controllers have no local account database. It can be configured at the domain level via group policy, similar to account lockout and password policy settings.

Rationale:

The default Guest account allows unauthenticated network users to log on as Guest with no password. These unauthorized users could access any resources that are accessible to the Guest account over the network. This capability means that any network shares with permissions that allow access to the Guest account, the Guests group, or the Everyone group will be accessible over the network, which could lead to the exposure or corruption of data.

Impact:

All network users will need to authenticate before they can access shared resources. If you disable the Guest account and the Network Access: Sharing and Security Model option is set to Guest Only, network logons, such as those performed by the Microsoft Network Server (SMB Service), will fail. This policy setting should have little impact on most organizations because it is the default setting in Microsoft Windows 2000, Windows XP, and Windows Server™ 2003.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Accounts: Guest account status

Default Value:

Disabled.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73809
Rule ID: SV-88475r2_rule
STIG ID: WN16-SO-000010
Severity: CAT II

CIS Controls:

Version 7

16.8 Disable Any Unassociated Accounts

Disable any account that cannot be associated with a business process or business owner.

2.3.1.4 (L3) Ensure 'Accounts: Guest account status' is set to 'Disabled' (DC only) (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller

Description:

This policy setting determines whether the Guest account is enabled or disabled. The Guest account allows unauthenticated network users to gain access to the system.

The STIG recommended state for this setting is: `Disabled`.

Note: This setting will have no impact when applied to the Domain Controllers organizational unit via group policy because Domain Controllers have no local account database. It can be configured at the domain level via group policy, similar to account lockout and password policy settings.

Rationale:

The default Guest account allows unauthenticated network users to log on as Guest with no password. These unauthorized users could access any resources that are accessible to the Guest account over the network. This capability means that any network shares with permissions that allow access to the Guest account, the Guests group, or the Everyone group will be accessible over the network, which could lead to the exposure or corruption of data.

Impact:

All network users will need to authenticate before they can access shared resources. If you disable the Guest account and the Network Access: Sharing and Security Model option is set to Guest Only, network logons, such as those performed by the Microsoft Network Server (SMB Service), will fail. This policy setting should have little impact on most organizations because it is the default setting in Microsoft Windows 2000, Windows XP, and Windows Server™ 2003.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Accounts: Guest account status

Default Value:

Disabled.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73809
Rule ID: SV-88475r2_rule
STIG ID: WN16-SO-000010
Severity: CAT II

Note: This setting will have no impact when applied to the Domain Controllers organizational unit via group policy because Domain Controllers have no local account database. It can be configured at the domain level via group policy, similar to account lockout and password policy settings.

CIS Controls:

Version 7

16.8 Disable Any Unassociated Accounts

Disable any account that cannot be associated with a business process or business owner.

2.3.1.5 (L1) Ensure 'Accounts: Limit local account use of blank passwords to console logon only' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether local accounts that are not password protected can be used to log on from locations other than the physical computer console. If you enable this policy setting, local accounts that have blank passwords will not be able to log on to the network from remote client computers. Such accounts will only be able to log on at the keyboard of the computer.

The recommended state for this setting is: Enabled.

Rationale:

Blank passwords are a serious threat to computer security and should be forbidden through both organizational policy and suitable technical measures. In fact, the default settings for Active Directory domains require complex passwords of at least seven characters. However, if users with the ability to create new accounts bypass your domain-based password policies, they could create accounts with blank passwords. For example, a user could build a stand-alone computer, create one or more accounts with blank passwords, and then join the computer to the domain. The local accounts with blank passwords would still function. Anyone who knows the name of one of these unprotected accounts could then use it to log on.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa:LimitBlankPasswordUse

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Accounts: Limit local account use of blank passwords to console logon only

Default Value:

Enabled.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73621
Rule ID: SV-88285r1_rule
STIG ID: WN16-SO-000020
Severity: CAT I

CIS Controls:

Version 7

4.4 Use Unique Passwords

Where multi-factor authentication is not supported (such as local administrator, root, or service accounts), accounts will use passwords that are unique to that system.

2.3.1.6 (L1) Configure 'Accounts: Rename administrator account' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

The built-in local administrator account is a well-known account name that attackers will target. It is recommended to choose another name for this account, and to avoid names that denote administrative or elevated access accounts. Be sure to also change the default description for the local administrator (through the Computer Management console). On Domain Controllers, since they do not have their own local accounts, this rule refers to the built-in Administrator account that was established when the domain was first created.

Rationale:

The Administrator account exists on all computers that run the Windows 2000 or newer operating systems. If you rename this account, it is slightly more difficult for unauthorized persons to guess this privileged user name and password combination.

The built-in Administrator account cannot be locked out, regardless of how many times an attacker might use a bad password. This capability makes the Administrator account a popular target for brute force attacks that attempt to guess passwords. The value of this countermeasure is lessened because this account has a well-known SID, and there are third-party tools that allow authentication by using the SID rather than the account name. Therefore, even if you rename the Administrator account, an attacker could launch a brute force attack by using the SID to log on.

Impact:

You will have to inform users who are authorized to use this account of the new account name. (The guidance for this setting assumes that the Administrator account was not disabled, which was recommended earlier in this chapter.)

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Accounts: Rename administrator account

Default Value:

Administrator.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73623
Rule ID: SV-88287r2_rule
STIG ID: WN16-SO-000030
Severity: CAT II

CIS Controls:

Version 7

16.8 Disable Any Unassociated Accounts

Disable any account that cannot be associated with a business process or business owner.

2.3.1.7 (L1) Configure 'Accounts: Rename guest account' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

The built-in local guest account is another well-known name to attackers. It is recommended to rename this account to something that does not indicate its purpose. Even if you disable this account, which is recommended, ensure that you rename it for added security. On Domain Controllers, since they do not have their own local accounts, this rule refers to the built-in Guest account that was established when the domain was first created.

Rationale:

The Guest account exists on all computers that run the Windows 2000 or newer operating systems. If you rename this account, it is slightly more difficult for unauthorized persons to guess this privileged user name and password combination.

Impact:

There should be little impact, because the Guest account is disabled by default.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, configure the following UI path:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Accounts: Rename guest account

Default Value:

Guest.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73625
Rule ID: SV-88289r2_rule
STIG ID: WN16-SO-000040
Severity: CAT II

CIS Controls:

Version 7

16.8 Disable Any Unassociated Accounts

Disable any account that cannot be associated with a business process or business owner.

2.3.2 Audit

This section contains recommendations related to auditing controls.

2.3.2.1 (L1) Ensure 'Audit: Force audit policy subcategory settings (Windows Vista or later) to override audit policy category settings' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows administrators to enable the more precise auditing capabilities present in Windows Vista.

The Audit Policy settings available in Windows Server 2003 Active Directory do not yet contain settings for managing the new auditing subcategories. To properly apply the auditing policies prescribed in this baseline, the Audit: Force audit policy subcategory settings (Windows Vista or later) to override audit policy category settings setting needs to be configured to Enabled.

The recommended state for this setting is: Enabled.

Important: Be very cautious about audit settings that can generate a large volume of traffic. For example, if you enable either success or failure auditing for all of the Privilege Use subcategories, the high volume of audit events generated can make it difficult to find other types of entries in the Security log. Such a configuration could also have a significant impact on system performance.

Rationale:

Prior to the introduction of auditing subcategories in Windows Vista, it was difficult to track events at a per-system or per-user level. The larger event categories created too many events and the key information that needed to be audited was difficult to find.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa:SCENoApplyLegacyAuditPolicy

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Audit: Force audit policy subcategory settings (Windows Vista or later) to override audit policy category settings

Default Value:

Enabled. (Advanced Audit Policy Configuration settings will be used for auditing configuration, and legacy Audit Policy configuration settings will be ignored.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide: Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73627
Rule ID: SV-88291r1_rule
STIG ID: WN16-SO-000050
Severity: CAT II

CIS Controls:

Version 7

6.2 Activate audit logging

Ensure that local logging has been enabled on all systems and networking devices.

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

6.4 Ensure adequate storage for logs

Ensure that all systems that store logs have adequate storage space for the logs generated.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

2.3.2.2 (L1) Ensure 'Audit: Shut down system immediately if unable to log security audits' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether the system shuts down if it is unable to log Security events. It is a requirement for Trusted Computer System Evaluation Criteria (TCSEC)-C2 and Common Criteria certification to prevent auditable events from occurring if the audit system is unable to log them. Microsoft has chosen to meet this requirement by halting the system and displaying a stop message if the auditing system experiences a failure. When this policy setting is enabled, the system will be shut down if a security audit cannot be logged for any reason.

If the Audit: Shut down system immediately if unable to log security audits setting is enabled, unplanned system failures can occur. The administrative burden can be significant, especially if you also configure the Retention method for the Security log to Do not overwrite events (clear log manually). This configuration causes a repudiation threat (a backup operator could deny that they backed up or restored data) to become a denial of service (DoS) vulnerability, because a server could be forced to shut down if it is overwhelmed with logon events and other security events that are written to the Security log. Also, because the shutdown is not graceful, it is possible that irreparable damage to the operating system, applications, or data could result. Although the NTFS file system guarantees its integrity when an ungraceful computer shutdown occurs, it cannot guarantee that every data file for every application will still be in a usable form when the computer restarts.

The recommended state for this setting is: Disabled.

Rationale:

If the computer is unable to record events to the Security log, critical evidence or important troubleshooting information may not be available for review after a security incident. Also, an attacker could potentially generate a large volume of Security log events to purposely force a computer shutdown.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa:CrashOnAuditFail

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Audit: Shut down system immediately if unable to log security audits

Default Value:

Disabled.

CIS Controls:

Version 7

6.2 Activate audit logging

Ensure that local logging has been enabled on all systems and networking devices.

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

6.4 Ensure adequate storage for logs

Ensure that all systems that store logs have adequate storage space for the logs generated.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

2.3.3 DCOM

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

2.3.4 Devices

This section contains recommendations related to managing devices.

2.3.4.1 (L1) Ensure 'Devices: Allowed to format and eject removable media' is set to 'Administrators' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines who is allowed to format and eject removable NTFS media. You can use this policy setting to prevent unauthorized users from removing data on one computer to access it on another computer on which they have local administrator privileges.

The recommended state for this setting is: Administrators.

Rationale:

Users may be able to move data on removable disks to a different computer where they have administrative privileges. The user could then take ownership of any file, grant themselves full control, and view or modify any file. The fact that most removable storage devices will eject media by pressing a mechanical button diminishes the advantage of this policy setting.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon:AllocateDASD

Remediation:

To establish the recommended configuration via GP, set the following UI path to Administrators:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Devices: Allowed to format and eject removable media

Default Value:

Administrators. (Only Administrators will be able to format and eject removable NTFS media.)

CIS Controls:

Version 7

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

8.4 Configure Anti-Malware Scanning of Removable Devices

Configure devices so that they automatically conduct an anti-malware scan of removable media when inserted or connected.

13.7 Manage USB Devices

If USB storage devices are required, enterprise software should be used that can configure systems to allow the use of specific devices. An inventory of such devices should be maintained.

2.3.4.2 (L1) Ensure 'Devices: Prevent users from installing printer drivers' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

For a computer to print to a shared printer, the driver for that shared printer must be installed on the local computer. This security setting determines who is allowed to install a printer driver as part of connecting to a shared printer.

The recommended state for this setting is: Enabled.

Note: This setting does not affect the ability to add a local printer. This setting does not affect Administrators.

Rationale:

It may be appropriate in some organizations to allow users to install printer drivers on their own workstations. However, you should allow only Administrators, not users, to do so on servers, because printer driver installation on a server may unintentionally cause the computer to become less stable. A malicious user could install inappropriate printer drivers in a deliberate attempt to damage the computer, or a user might accidentally install malicious software that masquerades as a printer driver. It is feasible for an attacker to disguise a Trojan horse program as a printer driver. The program may appear to users as if they must use it to print, but such a program could unleash malicious code on your computer network.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Print\Providers\LanMan
Print Services\Servers:AddPrinterDrivers

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Devices: Prevent users from installing printer drivers

Default Value:

Enabled. (Only Administrators will be able to install a printer driver as part of connecting to a shared printer. The ability to add a local printer will not be affected.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.5 Domain controller

This section contains recommendations related to Domain Controllers.

2.3.5.1 (L1) Ensure 'Domain controller: Allow server operators to schedule tasks' is set to 'Disabled' (DC only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller

Description:

This policy setting determines whether members of the Server Operators group are allowed to submit jobs by means of the AT schedule facility. The impact of this policy setting configuration should be small for most organizations. Users, including those in the Server Operators group, will still be able to create jobs by means of the Task Scheduler Wizard, but those jobs will run in the context of the account with which the user authenticates when they set up the job.

Note: An AT Service Account can be modified to select a different account rather than the LOCAL SYSTEM account. To change the account, open System Tools, click Scheduled Tasks, and then click Accessories folder. Then click AT Service Account on the Advanced menu.

The recommended state for this setting is: Disabled.

Rationale:

If you enable this policy setting, jobs that are created by server operators by means of the AT service will execute in the context of the account that runs that service. By default, that is the local SYSTEM account. If you enable this policy setting, server operators could perform tasks that SYSTEM is able to do but that they would typically not be able to do, such as add their account to the local Administrators group.

Impact:

None - this is the default behavior. Note that users (including those in the Server Operators group) are still able to create jobs by means of the Task Scheduler Wizard. However, those jobs will run in the context of the account that the user authenticates with when setting up the job.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa:SubmitControl

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Domain controller: Allow server operators to schedule tasks

Default Value:

Disabled. (Server Operators are not allowed to submit jobs by means of the AT schedule facility.)

CIS Controls:

Version 7

4.1 Maintain Inventory of Administrative Accounts

Use automated tools to inventory all administrative accounts, including domain and local accounts, to ensure that only authorized individuals have elevated privileges.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.3.5.2 (L1) Ensure 'Domain controller: LDAP server signing requirements' is set to 'Require signing' (DC only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller

Description:

This policy setting determines whether the Lightweight Directory Access Protocol (LDAP) server requires LDAP clients to negotiate data signing.

The recommended state for this setting is: `Require signing`.

Note: Domain member computers must have *Network security: LDAP signing requirements* (Rule 2.3.11.8) set to `Negotiate signing` or higher. If not, they will fail to authenticate once the above `Require signing` value is configured on the Domain Controllers. Fortunately, `Negotiate signing` is the default in the client configuration.

Note #2: This policy setting does not have any impact on LDAP simple bind (`ldap_simple_bind`) or LDAP simple bind through SSL (`ldap_simple_bind_s`). No Microsoft LDAP clients that are shipped with Windows XP Professional use LDAP simple bind or LDAP simple bind through SSL to talk to a Domain Controller.

Note #3: Before enabling this setting, you should first ensure that there are no clients (including server-based applications) that are configured to authenticate with Active Directory via unsigned LDAP, because changing this setting will break those applications. Such applications should first be reconfigured to use signed LDAP, Secure LDAP (LDAPS), or IPsec-protected connections. For more information on how to identify whether your DCs are being accessed via unsigned LDAP (and where those accesses are coming from), see this Microsoft TechNet blog article: [Identifying Clear Text LDAP binds to your DC's – Practical Windows Security](#)

Rationale:

Unsigned network traffic is susceptible to man-in-the-middle attacks. In such attacks, an intruder captures packets between the server and the client, modifies them, and then forwards them to the client. Where LDAP servers are concerned, an attacker could cause a client to make decisions that are based on false records from the LDAP directory. To lower the risk of such an intrusion in an organization's network, you can implement strong physical security measures to protect the network infrastructure. Also, you could implement Internet Protocol security (IPsec) authentication header mode (AH), which performs mutual authentication and packet integrity for IP traffic to make all types of man-in-the-middle attacks extremely difficult.

Additionally, allowing the use of regular, unsigned LDAP permits credentials to be received over the network in clear text, which could very easily result in the interception of account passwords by other systems on the network.

Impact:

Unless TLS/SSL is being used, the LDAP data signing option must be negotiated. Clients that do not support LDAP signing will be unable to run LDAP queries against the Domain Controllers. All Windows 2000-based computers in your organization that are managed from Windows Server 2003-based or Windows XP-based computers and that use Windows NT Challenge/Response (NTLM) authentication must have Windows 2000 Service Pack 3 (SP3) installed. Alternatively, these clients must have a registry change. For information about this registry change, see Microsoft Knowledge Base article 325465: [Windows 2000 domain controllers require SP3 or later when using Windows Server 2003 administration tools](#). Also, some non-Microsoft operating systems do not support LDAP signing. If you enable this policy setting, client computers that use those operating systems may be unable to access domain resources.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\NTDS\Parameters:LDAPServerIntegrity

Remediation:

To establish the recommended configuration via GP, set the following UI path to Require signing:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Domain controller: LDAP server signing requirements

Default Value:

None. (Data signing is not required in order to bind with the server. If the client requests data signing, the server supports it.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73629
Rule ID: SV-88293r1_rule
STIG ID: WN16-DC-000320
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.5.3 (L1) Ensure 'Domain controller: Refuse machine account password changes' is set to 'Disabled' (DC only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller

Description:

This security setting determines whether Domain Controllers will refuse requests from member computers to change computer account passwords.

The recommended state for this setting is: Disabled.

Note: Some problems can occur as a result of machine account password expiration, particularly if a machine is reverted to a previous point-in-time state, as is common with virtual machines. Depending on how far back the reversion is, the older machine account password stored on the machine may no longer be recognized by the domain controllers, and therefore the computer loses its domain trust. This can also disrupt non-persistent VDI implementations, and devices with write filters that disallow permanent changes to the OS volume. Some organizations may choose to exempt themselves from this recommendation and disable machine account password expiration for these situations.

Rationale:

If you enable this policy setting on all Domain Controllers in a domain, domain members will not be able to change their computer account passwords, and those passwords will be more susceptible to attack.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Netlogon\Parameters:RefusePasswordChange

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Domain controller: Refuse machine account password changes

Default Value:

Disabled. (By default, member computers change their computer account passwords as specified by the *Domain member: Maximum machine account password age* setting (Rule 2.3.6.5), which is by default every 30 days.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73631
Rule ID: SV-88295r1_rule
STIG ID: WN16-DC-000330
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.6 Domain member

This section contains recommendations related to domain membership.

2.3.6.1 (L1) Ensure 'Domain member: Digitally encrypt or sign secure channel data (always)' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether all secure channel traffic that is initiated by the domain member must be signed or encrypted.

The recommended state for this setting is: Enabled.

Rationale:

When a computer joins a domain, a computer account is created. After it joins the domain, the computer uses the password for that account to create a secure channel with the Domain Controller for its domain every time that it restarts. Requests that are sent on the secure channel are authenticated—and sensitive information such as passwords are encrypted—but the channel is not integrity-checked, and not all information is encrypted.

Digital encryption and signing of the secure channel is a good idea where it is supported. The secure channel protects domain credentials as they are sent to the Domain Controller.

Impact:

None - this is the default behavior. However, only Windows NT 4.0 with Service Pack 6a (SP6a) and subsequent versions of the Windows operating system support digital encryption and signing of the secure channel. Windows 98 Second Edition clients do not support it unless they have Dsclient installed. Therefore, you cannot enable the Domain member: Digitally encrypt or sign secure channel data (always) setting on Domain Controllers that support Windows 98 clients as members of the domain. Potential impacts can include the following:

- The ability to create or delete trust relationships with clients running versions of Windows earlier than Windows NT 4.0 with SP6a will be disabled.
- Logons from clients running versions of Windows earlier than Windows NT 4.0 with SP6a will be disabled.
- The ability to authenticate other domains' users from a Domain Controller running a version of Windows earlier than Windows NT 4.0 with SP6a in a trusted domain will be disabled.

You can enable this policy setting after you eliminate all Windows 9x clients from the domain and upgrade all Windows NT 4.0 servers and Domain Controllers from trusted/trusting domains to Windows NT 4.0 with SP6a.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Netlogon\Parameters:RequireSignOrSeal

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Domain member: Digitally encrypt or sign secure channel data (always)

Default Value:

Enabled. (All secure channel data must be signed or encrypted.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73633
Rule ID: SV-88297r1_rule
STIG ID: WN16-SO-000080
Severity: CAT II

CIS Controls:

Version 7

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

2.3.6.2 (L1) Ensure 'Domain member: Digitally encrypt secure channel data (when possible)' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether a domain member should attempt to negotiate encryption for all secure channel traffic that it initiates.

The recommended state for this setting is: Enabled.

Rationale:

When a computer joins a domain, a computer account is created. After it joins the domain, the computer uses the password for that account to create a secure channel with the Domain Controller for its domain every time that it restarts. Requests that are sent on the secure channel are authenticated—and sensitive information such as passwords are encrypted—but the channel is not integrity-checked, and not all information is encrypted.

Digital encryption and signing of the secure channel is a good idea where it is supported. The secure channel protects domain credentials as they are sent to the Domain Controller.

Impact:

None - this is the default behavior. However, only Windows NT 4.0 Service Pack 6a (SP6a) and subsequent versions of the Windows operating system support digital encryption and signing of the secure channel. Windows 98 Second Edition clients do not support it unless they have `Dsclient` installed.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Netlogon\Parameters:Seal
SecureChannel

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Domain member: Digitally encrypt secure channel data (when possible)

Default Value:

Enabled. (The domain member will request encryption of all secure channel traffic.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73635
Rule ID: SV-88299r1_rule
STIG ID: WN16-SO-000090
Severity: CAT II

CIS Controls:

Version 7

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

2.3.6.3 (L1) Ensure 'Domain member: Digitally sign secure channel data (when possible)' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether a domain member should attempt to negotiate whether all secure channel traffic that it initiates must be digitally signed. Digital signatures protect the traffic from being modified by anyone who captures the data as it traverses the network.

The recommended state for this setting is: Enabled.

Rationale:

When a computer joins a domain, a computer account is created. After it joins the domain, the computer uses the password for that account to create a secure channel with the Domain Controller for its domain every time that it restarts. Requests that are sent on the secure channel are authenticated—and sensitive information such as passwords are encrypted—but the channel is not integrity-checked, and not all information is encrypted.

Digital encryption and signing of the secure channel is a good idea where it is supported. The secure channel protects domain credentials as they are sent to the Domain Controller.

Impact:

None - this is the default behavior. However, only Windows NT 4.0 with Service Pack 6a (SP6a) and subsequent versions of the Windows operating system support digital encryption and signing of the secure channel. Windows 98 Second Edition clients do not support it unless they have Dsclient installed.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Netlogon\Parameters:Sign SecureChannel

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Domain member: Digitally sign secure channel data (when possible)

Default Value:

Enabled. (The domain member will request digital signing of all secure channel traffic.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73637
Rule ID: SV-88301r1_rule
STIG ID: WN16-SO-000100
Severity: CAT II

CIS Controls:

Version 7

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

2.3.6.4 (L1) Ensure 'Domain member: Disable machine account password changes' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether a domain member can periodically change its computer account password. Computers that cannot automatically change their account passwords are potentially vulnerable, because an attacker might be able to determine the password for the system's domain account.

The recommended state for this setting is: `Disabled`.

Note: Some problems can occur as a result of machine account password expiration, particularly if a machine is reverted to a previous point-in-time state, as is common with virtual machines. Depending on how far back the reversion is, the older machine account password stored on the machine may no longer be recognized by the domain controllers, and therefore the computer loses its domain trust. This can also disrupt non-persistent VDI implementations, and devices with write filters that disallow permanent changes to the OS volume. Some organizations may choose to exempt themselves from this recommendation and disable machine account password expiration for these situations.

Rationale:

The default configuration for Windows Server 2003-based computers that belong to a domain is that they are automatically required to change the passwords for their accounts every 30 days. If you disable this policy setting, computers that run Windows Server 2003 will retain the same passwords as their computer accounts. Computers that are no longer able to automatically change their account password are at risk from an attacker who could determine the password for the computer's domain account.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Netlogon\Parameters:DisablePasswordChange

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Domain member: Disable machine account password changes

Default Value:

Disabled. (The domain member can change its computer account password as specified by the *Domain Member: Maximum machine account password age* setting (Rule 2.3.6.5), which by default is every 30 days.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73639
Rule ID: SV-88303r1_rule
STIG ID: WN16-SO-000110
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.6.5 (L1) Ensure 'Domain member: Maximum machine account password age' is set to '30 or fewer days, but not 0' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines the maximum allowable age for a computer account password. By default, domain members automatically change their domain passwords every 30 days.

The recommended state for this setting is: 30 or fewer days, but not 0.

Note: A value of 0 does not conform to the benchmark as it disables maximum password age.

Note #2: Some problems can occur as a result of machine account password expiration, particularly if a machine is reverted to a previous point-in-time state, as is common with virtual machines. Depending on how far back the reversion is, the older machine account password stored on the machine may no longer be recognized by the domain controllers, and therefore the computer loses its domain trust. This can also disrupt non-persistent VDI implementations, and devices with write filters that disallow permanent changes to the OS volume. Some organizations may choose to exempt themselves from this recommendation and disable machine account password expiration for these situations.

Rationale:

In Active Directory-based domains, each computer has an account and password just like every user. By default, the domain members automatically change their domain password every 30 days. If you increase this interval significantly, or set it to 0 so that the computers no longer change their passwords, an attacker will have more time to undertake a brute force attack to guess the passwords of computer accounts.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to 30 or fewer days, but not 0:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Domain member: Maximum machine account password age

Default Value:

30 days.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73641
Rule ID: SV-88305r1_rule
STIG ID: WN16-SO-000120
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.6.6 (L1) Ensure 'Domain member: Require strong (Windows 2000 or later) session key' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

When this policy setting is enabled, a secure channel can only be established with Domain Controllers that are capable of encrypting secure channel data with a strong (128-bit) session key.

To enable this policy setting, all Domain Controllers in the domain must be able to encrypt secure channel data with a strong key, which means all Domain Controllers must be running Microsoft Windows 2000 or newer.

The recommended state for this setting is: Enabled.

Rationale:

Session keys that are used to establish secure channel communications between Domain Controllers and member computers are much stronger in Windows 2000 than they were in previous Microsoft operating systems. Whenever possible, you should take advantage of these stronger session keys to help protect secure channel communications from attacks that attempt to hijack network sessions and eavesdropping. (Eavesdropping is a form of hacking in which network data is read or altered in transit. The data can be modified to hide or change the sender, or be redirected.)

Impact:

None - this is the default behavior. However, computers will not be able to join Windows NT 4.0 domains, and trusts between Active Directory domains and Windows NT-style domains may not work properly. Also, Domain Controllers with this setting configured will not allow older pre-Windows 2000 clients (that do not support this policy setting) to join the domain.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Netlogon\Parameters:RequireStrongKey

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Domain member: Require strong (Windows 2000 or later) session key

Default Value:

Enabled. (The secure channel will not be established unless 128-bit encryption can be performed.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73643
Rule ID: SV-88307r1_rule
STIG ID: WN16-SO-000130
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.7 Interactive logon

This section contains recommendations related to interactive logons.

2.3.7.1 (L1) Ensure 'Interactive logon: Do not display last user name' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether the account name of the last user to log on to the client computers in your organization will be displayed in each computer's respective Windows logon screen. Enable this policy setting to prevent intruders from collecting account names visually from the screens of desktop or laptop computers in your organization.

The recommended state for this setting is: Enabled.

Rationale:

An attacker with access to the console (for example, someone with physical access or someone who is able to connect to the server through Remote Desktop Services) could view the name of the last user who logged on to the server. The attacker could then try to guess the password, use a dictionary, or use a brute-force attack to try and log on.

Impact:

The name of the last user to successfully log on will not be displayed in the Windows logon screen.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System:
DontDisplayLastUserName

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Interactive logon: Do not display last user name

Note: In newer versions of Microsoft Windows Server, starting with Windows Server 2019, this setting was renamed *Interactive logon: Don't display last signed-in*.

Default Value:

Disabled. (The name of the last user to log on is displayed in the Windows logon screen.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

2.3.7.2 (L1) Ensure 'Interactive logon: Do not require CTRL+ALT+DEL' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether users must press CTRL+ALT+DEL before they log on.

The recommended state for this setting is: **Disabled**.

Rationale:

Microsoft developed this feature to make it easier for users with certain types of physical impairments to log on to computers that run Windows. If users are not required to press CTRL+ALT+DEL, they are susceptible to attacks that attempt to intercept their passwords. If CTRL+ALT+DEL is required before logon, user passwords are communicated by means of a trusted path.

An attacker could install a Trojan horse program that looks like the standard Windows logon dialog box and capture the user's password. The attacker would then be able to log on to the compromised account with whatever level of privilege that user has.

Impact:

Users must press CTRL+ALT+DEL before they log on to Windows unless they use a smart card for Windows logon. A smart card is a tamper-proof device that stores security information.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System:
DisableCAD

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Interactive logon: Do not require CTRL+ALT+DEL

Default Value:

On Windows Server 2008 R2 or older: Disabled.

On Windows Server 2012 (non-R2) or newer: Enabled.

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

2.3.7.3 (L1) Ensure 'Interactive logon: Machine inactivity limit' is set to '900 or fewer second(s), but not 0' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Windows notices inactivity of a logon session, and if the amount of inactive time exceeds the inactivity limit, then the screen saver will run, locking the session.

The recommended state for this setting is: 900 or fewer second(s), but not 0.

Note: A value of 0 does not conform to the benchmark as it disables the machine inactivity limit.

Rationale:

If a user forgets to lock their computer when they walk away it's possible that a passerby will hijack it.

Impact:

The screen saver will automatically activate when the computer has been unattended for the amount of time specified. The impact should be minimal since the screen saver is enabled by default.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System:
InactivityTimeoutSecs

Remediation:

To establish the recommended configuration via GP, set the following UI path to 900 or fewer seconds, but not 0:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Interactive logon: Machine inactivity limit

Default Value:

0 seconds. (There is no inactivity limit).

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73645
Rule ID: SV-88309r2_rule
STIG ID: WN16-SO-000140
Severity: CAT II

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

2.3.7.4 (L1) Configure 'Interactive logon: Message text for users attempting to log on' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting specifies a text message that displays to users when they log on. Configure this setting in a manner that is consistent with the security and operational requirements of your organization.

Rationale:

Displaying a warning message before logon may help prevent an attack by warning the attacker about the consequences of their misconduct before it happens. It may also help to reinforce corporate policy by notifying employees of the appropriate policy during the logon process. This text is often used for legal reasons—for example, to warn users about the ramifications of misusing company information or to warn them that their actions may be audited.

Note: Any warning that you display should first be approved by your organization's legal and human resources representatives.

Impact:

Users will have to acknowledge a dialog box containing the configured text before they can log on to the computer.

Note: Windows Vista and Windows XP Professional support logon banners that can exceed 512 characters in length and that can also contain carriage-return line-feed sequences. However, Windows 2000-based clients cannot interpret and display these messages. You must use a Windows 2000-based computer to create a logon message policy that applies to Windows 2000-based computers.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System:
LegalNoticeText

Remediation:

To establish the recommended configuration via GP, configure the following UI path to a value that is consistent with the security and operational requirements of your organization:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Interactive logon: Message text for users attempting to log on

Default Value:

No message.

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

2.3.7.5 (L1) Configure 'Interactive logon: Message title for users attempting to log on' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting specifies the text displayed in the title bar of the window that users see when they log on to the system. Configure this setting in a manner that is consistent with the security and operational requirements of your organization.

Rationale:

Displaying a warning message before logon may help prevent an attack by warning the attacker about the consequences of their misconduct before it happens. It may also help to reinforce corporate policy by notifying employees of the appropriate policy during the logon process.

Impact:

Users will have to acknowledge a dialog box with the configured title before they can log on to the computer.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System:  
LegalNoticeCaption
```

Remediation:

To establish the recommended configuration via GP, configure the following UI path to a value that is consistent with the security and operational requirements of your organization:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Interactive logon: Message title for users attempting to log on

Default Value:

No message.

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

2.3.7.6 (L2) Ensure 'Interactive logon: Number of previous logons to cache (in case domain controller is not available)' is set to '4 or fewer logon(s)' (MS only) (Automated)

Profile Applicability:

- Level 2 - Member Server
- Level 3 - STIG Member Server

Description:

This policy setting determines whether a user can log on to a Windows domain using cached account information. Logon information for domain accounts can be cached locally to allow users to log on even if a Domain Controller cannot be contacted. This policy setting determines the number of unique users for whom logon information is cached locally. If this value is set to 0, the logon cache feature is disabled. An attacker who is able to access the file system of the server could locate this cached information and use a brute force attack to determine user passwords.

The recommended state for this setting is: 4 or fewer logon(s).

Rationale:

The number that is assigned to this policy setting indicates the number of users whose logon information the computer will cache locally. If the number is set to 4, then the computer caches logon information for 4 users. When a 5th user logs on to the computer, the server overwrites the oldest cached logon session.

Users who access the computer console will have their logon credentials cached on that computer. An attacker who is able to access the file system of the computer could locate this cached information and use a brute force attack to attempt to determine user passwords. To mitigate this type of attack, Windows encrypts the information and obscures its physical location.

Impact:

Users will be unable to log on to any computers if there is no Domain Controller available to authenticate them. Organizations may want to configure this value to 2 for end-user computers, especially for mobile users. A configuration value of 2 means that the user's logon information will still be in the cache, even if a member of the IT department has recently logged on to their computer to perform system maintenance. This method allows users to log on to their computers when they are not connected to the organization's network.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon:CachedLogonsCount

Remediation:

To establish the recommended configuration via GP, set the following UI path to 4 or fewer logon(s):

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Interactive logon: Number of previous logons to cache (in case domain controller is not available)

Default Value:

On Windows Server 2008 (non-R2): 25 logons.

On Windows Server 2008 R2 or newer: 10 logons.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73651
Rule ID: SV-88315r1_rule
STIG ID: WN16-MS-000050
Severity: CAT II

CIS Controls:

Version 7

4.3 Ensure the Use of Dedicated Administrative Accounts

Ensure that all users with administrative account access use a dedicated or secondary account for elevated activities. This account should only be used for administrative activities and not internet browsing, email, or similar activities.

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.7.7 (L1) Ensure 'Interactive logon: Prompt user to change password before expiration' is set to 'between 5 and 14 days' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines how far in advance users are warned that their password will expire. It is recommended that you configure this policy setting to at least 5 days but no more than 14 days to sufficiently warn users when their passwords will expire.

The recommended state for this setting is: between 5 and 14 days.

Rationale:

It is recommended that user passwords be configured to expire periodically. Users will need to be warned that their passwords are going to expire, or they may inadvertently be locked out of the computer when their passwords expire. This condition could lead to confusion for users who access the network locally, or make it impossible for users to access your organization's network through dial-up or virtual private network (VPN) connections.

Impact:

Users will see a dialog box prompt to change their password each time that they log on to the domain when their password is configured to expire between 5 and 14 days.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon:PasswordExpiryWarning

Remediation:

To establish the recommended configuration via GP, set the following UI path to a value between 5 and 14 days:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Interactive logon: Prompt user to change password before expiration

Default Value:

5 days.

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

2.3.7.8 (L1) Ensure 'Interactive logon: Require Domain Controller Authentication to unlock workstation' is set to 'Enabled' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

Logon information is required to unlock a locked computer. For domain accounts, this security setting determines whether it is necessary to contact a Domain Controller to unlock a computer.

The recommended state for this setting is: Enabled.

Rationale:

By default, the computer caches in memory the credentials of any users who are authenticated locally. The computer uses these cached credentials to authenticate anyone who attempts to unlock the console. When cached credentials are used, any changes that have recently been made to the account — such as user rights assignments, account lockout, or the account being disabled — are not considered or applied after the account is authenticated. User privileges are not updated, and (more importantly) disabled accounts are still able to unlock the console of the computer.

Impact:

When the console on a computer is locked, either by a user or automatically by a screen saver time-out, the console can only be unlocked if a Domain Controller is available to re-authenticate the domain account that is being used to unlock the computer. If no Domain Controller is available, the user cannot unlock the computer.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon:ForceUnlockLogon

Remediation:

To implement the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Interactive logon: Require Domain Controller Authentication to unlock workstation

Default Value:

Disabled. (Logon information confirmation with a Domain Controller is not required for a user to unlock the computer, and the user can unlock the computer using cached credentials, if they are present.)

CIS Controls:

Version 7

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

2.3.7.9 (L1) Ensure 'Interactive logon: Smart card removal behavior' is set to 'Lock Workstation' or higher (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines what happens when the smart card for a logged-on user is removed from the smart card reader.

The recommended state for this setting is: Lock Workstation. Configuring this setting to Force Logoff or Disconnect if a Remote Desktop Services session also conforms to the benchmark.

Rationale:

Users sometimes forget to lock their workstations when they are away from them, allowing the possibility for malicious users to access their computers. If smart cards are used for authentication, the computer should automatically lock itself when the card is removed to ensure that only the user with the smart card is accessing resources using those credentials.

Impact:

If you select Lock Workstation, the workstation is locked when the smart card is removed, allowing users to leave the area, take their smart card with them, and still maintain a protected session.

If you select Force Logoff, users are automatically logged off when their smart card is removed.

If you select Disconnect if a Remote Desktop Services session, removal of the smart card disconnects the session without logging the users off. This allows the user to insert the smart card and resume the session later, or at another smart card reader-equipped computer, without having to log on again. If the session is local, this policy will function identically to Lock Workstation.

Enforcing this setting on computers used by people who must log onto multiple computers in order to perform their duties could be frustrating and lower productivity. For example, if network administrators are limited to a single account but need to log into several computers simultaneously in order to effectively manage the network enforcing this setting will limit them to logging onto one computer at a time. For these reasons it is recommended that this setting only be enforced on workstations used for purposes commonly associated with typical users such as document creation and email.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed, noting that values of Force Logoff or Disconnect if a Remote Desktop Services session are also acceptable settings. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows  
NT\CurrentVersion\Winlogon:ScRemoveOption
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Lock Workstation (or, if applicable for your environment, Force Logoff or Disconnect if a Remote Desktop Services session):

```
Computer Configuration\Policies\Windows Settings\Security Settings\Local  
Policies\Security Options\Interactive logon: Smart card removal behavior
```

Default Value:

No action.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73807
Rule ID: SV-88473r1_rule
STIG ID: WN16-SO-000180
Severity: CAT II

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

2.3.8 Microsoft network client

This section contains recommendations related to configuring the Microsoft network client.

2.3.8.1 (L1) Ensure 'Microsoft network client: Digitally sign communications (always)' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether packet signing is required by the SMB client component.

Note: When Windows Vista-based computers have this policy setting enabled and they connect to file or print shares on remote servers, it is important that the setting is synchronized with its companion setting, **Microsoft network server: Digitally sign communications (always)**, on those servers. For more information about these settings, see the "Microsoft network client and server: Digitally sign communications (four related settings)" section in Chapter 5 of the Threats and Countermeasures guide.

The recommended state for this setting is: Enabled.

Rationale:

Session hijacking uses tools that allow attackers who have access to the same network as the client or server to interrupt, end, or steal a session in progress. Attackers can potentially intercept and modify unsigned SMB packets and then modify the traffic and forward it so that the server might perform undesirable actions. Alternatively, the attacker could pose as the server or client after legitimate authentication and gain unauthorized access to data.

SMB is the resource sharing protocol that is supported by many Windows operating systems. It is the basis of NetBIOS and many other protocols. SMB signatures authenticate both users and the servers that host the data. If either side fails the authentication process, data transmission will not take place.

Impact:

The Microsoft network client will not communicate with a Microsoft network server unless that server agrees to perform SMB packet signing.

The Windows 2000 Server, Windows 2000 Professional, Windows Server 2003, Windows XP Professional and Windows Vista implementations of the SMB file and print sharing protocol support mutual authentication, which prevents session hijacking attacks and supports message authentication to prevent man-in-the-middle attacks. SMB signing provides this authentication by placing a digital signature into each SMB, which is then verified by both the client and the server.

Implementation of SMB signing may negatively affect performance, because each packet needs to be signed and verified. If these settings are enabled on a server that is performing multiple roles, such as a small business server that is serving as a Domain Controller, file server, print server, and application server performance may be substantially slowed. Additionally, if you configure computers to ignore all unsigned SMB communications, older applications and operating systems will not be able to connect. However, if you completely disable all SMB signing, computers will be vulnerable to session hijacking attacks.

When SMB signing policies are enabled on Domain Controllers running Windows Server 2003 and member computers running Windows Vista SP1 or Windows Server 2008 group policy processing will fail. A hotfix is available from Microsoft that resolves this issue; see Microsoft Knowledge Base article 950876 for more details: [Group Policy settings are not applied on member computers that are running Windows Server 2008 or Windows Vista SP1 when certain SMB signing policies are enabled.](#)

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanWorkstation\Parameters:RequireSecuritySignature

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Microsoft network client: Digitally sign communications (always)

Default Value:

Disabled. (SMB packet signing is negotiated between the client and server.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73653
Rule ID: SV-88317r1_rule
STIG ID: WN16-SO-000190
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.8.2 (L1) Ensure 'Microsoft network client: Digitally sign communications (if server agrees)' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether the SMB client will attempt to negotiate SMB packet signing.

Note: Enabling this policy setting on SMB clients on your network makes them fully effective for packet signing with all clients and servers in your environment.

The recommended state for this setting is: Enabled.

Rationale:

Session hijacking uses tools that allow attackers who have access to the same network as the client or server to interrupt, end, or steal a session in progress. Attackers can potentially intercept and modify unsigned SMB packets and then modify the traffic and forward it so that the server might perform undesirable actions. Alternatively, the attacker could pose as the server or client after legitimate authentication and gain unauthorized access to data.

SMB is the resource sharing protocol that is supported by many Windows operating systems. It is the basis of NetBIOS and many other protocols. SMB signatures authenticate both users and the servers that host the data. If either side fails the authentication process, data transmission will not take place.

Impact:

None - this is the default behavior.

The Windows 2000 Server, Windows 2000 Professional, Windows Server 2003, Windows XP Professional and Windows Vista implementations of the SMB file and print sharing protocol support mutual authentication, which prevents session hijacking attacks and supports message authentication to prevent man-in-the-middle attacks. SMB signing provides this authentication by placing a digital signature into each SMB, which is then verified by both the client and the server.

Implementation of SMB signing may negatively affect performance, because each packet needs to be signed and verified. If these settings are enabled on a server that is performing multiple roles, such as a small business server that is serving as a Domain Controller, file server, print server, and application server performance may be substantially slowed. Additionally, if you configure computers to ignore all unsigned SMB communications, older applications and operating systems will not be able to connect. However, if you completely disable all SMB signing, computers will be vulnerable to session hijacking attacks.

When SMB signing policies are enabled on Domain Controllers running Windows Server 2003 and member computers running Windows Vista SP1 or Windows Server 2008 group policy processing will fail. A hotfix is available from Microsoft that resolves this issue; see Microsoft Knowledge Base article 950876 for more details: [Group Policy settings are not applied on member computers that are running Windows Server 2008 or Windows Vista SP1 when certain SMB signing policies are enabled.](#)

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanWorkstation\Parameters:EnableSecuritySignature

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Microsoft network client: Digitally sign communications (if server agrees)

Default Value:

Enabled. (The Microsoft network client will ask the server to perform SMB packet signing upon session setup. If packet signing has been enabled on the server, packet signing will be negotiated.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73655
Rule ID: SV-88319r1_rule
STIG ID: WN16-SO-000200
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.8.3 (L1) Ensure 'Microsoft network client: Send unencrypted password to third-party SMB servers' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether the SMB redirector will send plaintext passwords during authentication to third-party SMB servers that do not support password encryption.

It is recommended that you disable this policy setting unless there is a strong business case to enable it. If this policy setting is enabled, unencrypted passwords will be allowed across the network.

The recommended state for this setting is: `Disabled`.

Rationale:

If you enable this policy setting, the server can transmit passwords in plaintext across the network to other computers that offer SMB services, which is a significant security risk. These other computers may not use any of the SMB security mechanisms that are included with Windows Server 2003.

Impact:

None - this is the default behavior.

Some very old applications and operating systems such as MS-DOS, Windows for Workgroups 3.11, and Windows 95a may not be able to communicate with the servers in your organization by means of the SMB protocol.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanWorkstation\Parameters:EnablePlainTextPassword

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Microsoft network client: Send unencrypted password to third-party SMB servers

Default Value:

Disabled. (Plaintext passwords will not be sent during authentication to third-party SMB servers that do not support password encryption.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73657
Rule ID: SV-88321r1_rule
STIG ID: WN16-SO-000210
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.9 Microsoft network server

This section contains recommendations related to configuring the Microsoft network server.

2.3.9.1 (L1) Ensure 'Microsoft network server: Amount of idle time required before suspending session' is set to '15 or fewer minute(s)' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to specify the amount of continuous idle time that must pass in an SMB session before the session is suspended because of inactivity. Administrators can use this policy setting to control when a computer suspends an inactive SMB session. If client activity resumes, the session is automatically reestablished.

The maximum value is 99999, which is over 69 days; in effect, this value disables the setting.

The recommended state for this setting is: 15 or fewer minute(s).

Rationale:

Each SMB session consumes server resources, and numerous null sessions will slow the server or possibly cause it to fail. An attacker could repeatedly establish SMB sessions until the server's SMB services become slow or unresponsive.

Impact:

There will be little impact because SMB sessions will be re-established automatically if the client resumes activity.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanManServer\Parameters:
AutoDisconnect

Remediation:

To establish the recommended configuration via GP, set the following UI path to 15 or fewer minute(s):

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Microsoft network server: Amount of idle time required before suspending session

Default Value:

15 minutes.

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

2.3.9.2 (L1) Ensure 'Microsoft network server: Digitally sign communications (always)' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether packet signing is required by the SMB server component. Enable this policy setting in a mixed environment to prevent downstream clients from using the workstation as a network server.

The recommended state for this setting is: Enabled.

Rationale:

Session hijacking uses tools that allow attackers who have access to the same network as the client or server to interrupt, end, or steal a session in progress. Attackers can potentially intercept and modify unsigned SMB packets and then modify the traffic and forward it so that the server might perform undesirable actions. Alternatively, the attacker could pose as the server or client after legitimate authentication and gain unauthorized access to data.

SMB is the resource sharing protocol that is supported by many Windows operating systems. It is the basis of NetBIOS and many other protocols. SMB signatures authenticate both users and the servers that host the data. If either side fails the authentication process, data transmission will not take place.

Impact:

The Microsoft network server will not communicate with a Microsoft network client unless that client agrees to perform SMB packet signing.

The Windows 2000 Server, Windows 2000 Professional, Windows Server 2003, Windows XP Professional and Windows Vista implementations of the SMB file and print sharing protocol support mutual authentication, which prevents session hijacking attacks and supports message authentication to prevent man-in-the-middle attacks. SMB signing provides this authentication by placing a digital signature into each SMB, which is then verified by both the client and the server.

Implementation of SMB signing may negatively affect performance, because each packet needs to be signed and verified. If these settings are enabled on a server that is performing multiple roles, such as a small business server that is serving as a Domain Controller, file server, print server, and application server performance may be substantially slowed. Additionally, if you configure computers to ignore all unsigned SMB communications, older applications and operating systems will not be able to connect. However, if you completely disable all SMB signing, computers will be vulnerable to session hijacking attacks.

When SMB signing policies are enabled on Domain Controllers running Windows Server 2003 and member computers running Windows Vista SP1 or Windows Server 2008 group policy processing will fail. A hotfix is available from Microsoft that resolves this issue; see Microsoft Knowledge Base article 950876 for more details: [Group Policy settings are not applied on member computers that are running Windows Server 2008 or Windows Vista SP1 when certain SMB signing policies are enabled](#).

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanManServer\Parameters:  
RequireSecuritySignature
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

```
Computer Configuration\Policies\Windows Settings\Security Settings\Local  
Policies\Security Options\Microsoft network server: Digitally sign  
communications (always)
```

Default Value:

On Member Servers: Disabled. (SMB packet signing is negotiated between the client and server.)

On Domain Controllers: Enabled. (The Microsoft network server will not communicate with a Microsoft network client unless that client agrees to perform SMB packet signing.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73661
Rule ID: SV-88325r1_rule
STIG ID: WN16-SO-000230
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.9.3 (L1) Ensure 'Microsoft network server: Digitally sign communications (if client agrees)' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether the SMB server will negotiate SMB packet signing with clients that request it. If no signing request comes from the client, a connection will be allowed without a signature if the **Microsoft network server: Digitally sign communications (always)** setting is not enabled.

Note: Enable this policy setting on SMB clients on your network to make them fully effective for packet signing with all clients and servers in your environment.

The recommended state for this setting is: Enabled.

Rationale:

Session hijacking uses tools that allow attackers who have access to the same network as the client or server to interrupt, end, or steal a session in progress. Attackers can potentially intercept and modify unsigned SMB packets and then modify the traffic and forward it so that the server might perform undesirable actions. Alternatively, the attacker could pose as the server or client after legitimate authentication and gain unauthorized access to data.

SMB is the resource sharing protocol that is supported by many Windows operating systems. It is the basis of NetBIOS and many other protocols. SMB signatures authenticate both users and the servers that host the data. If either side fails the authentication process, data transmission will not take place.

Impact:

The Microsoft network server will negotiate SMB packet signing as requested by the client. That is, if packet signing has been enabled on the client, packet signing will be negotiated.

The Windows 2000 Server, Windows 2000 Professional, Windows Server 2003, Windows XP Professional and Windows Vista implementations of the SMB file and print sharing protocol support mutual authentication, which prevents session hijacking attacks and supports message authentication to prevent man-in-the-middle attacks. SMB signing provides this authentication by placing a digital signature into each SMB, which is then verified by both the client and the server.

Implementation of SMB signing may negatively affect performance, because each packet needs to be signed and verified. If these settings are enabled on a server that is performing multiple roles, such as a small business server that is serving as a Domain Controller, file server, print server, and application server performance may be substantially slowed. Additionally, if you configure computers to ignore all unsigned SMB communications, older applications and operating systems will not be able to connect. However, if you completely disable all SMB signing, computers will be vulnerable to session hijacking attacks.

When SMB signing policies are enabled on Domain Controllers running Windows Server 2003 and member computers running Windows Vista SP1 or Windows Server 2008 group policy processing will fail. A hotfix is available from Microsoft that resolves this issue; see Microsoft Knowledge Base article 950876 for more details: [Group Policy settings are not applied on member computers that are running Windows Server 2008 or Windows Vista SP1 when certain SMB signing policies are enabled.](#)

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanManServer\Parameters:
EnableSecuritySignature

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Microsoft network server: Digitally sign communications (if client agrees)

Default Value:

On Member Servers: Disabled. (The SMB client will never negotiate SMB packet signing.)

On Domain Controllers: Enabled. (The Microsoft network server will negotiate SMB packet signing as requested by the client. That is, if packet signing has been enabled on the client, packet signing will be negotiated.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73663
Rule ID: SV-88327r1_rule
STIG ID: WN16-SO-000240
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.9.4 (L1) Ensure 'Microsoft network server: Disconnect clients when logon hours expire' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This security setting determines whether to disconnect users who are connected to the local computer outside their user account's valid logon hours. This setting affects the Server Message Block (SMB) component. If you enable this policy setting you should also enable *Network security: Force logoff when logon hours expire* (Rule 2.3.11.6).

If your organization configures logon hours for users, this policy setting is necessary to ensure they are effective.

The recommended state for this setting is: Enabled.

Rationale:

If your organization configures logon hours for users, then it makes sense to enable this policy setting. Otherwise, users who should not have access to network resources outside of their logon hours may actually be able to continue to use those resources with sessions that were established during allowed hours.

Impact:

None - this is the default behavior. If logon hours are not used in your organization, this policy setting will have no impact. If logon hours are used, existing user sessions will be forcibly terminated when their logon hours expire.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanManServer\Parameters:
enableforcedlogoff

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Microsoft network server: Disconnect clients when logon hours expire

Default Value:

Enabled. (Client sessions with the SMB service are forcibly disconnected when the client's logon hours expire.)

CIS Controls:

Version 7

16.13 Alert on Account Login Behavior Deviation

Alert when users deviate from normal login behavior, such as time-of-day, workstation location and duration.

2.3.9.5 (L1) Ensure 'Microsoft network server: Server SPN target name validation level' is set to 'Accept if provided by client' or higher (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

This policy setting controls the level of validation a computer with shared folders or printers (the server) performs on the service principal name (SPN) that is provided by the client computer when it establishes a session using the server message block (SMB) protocol.

The server message block (SMB) protocol provides the basis for file and print sharing and other networking operations, such as remote Windows administration. The SMB protocol supports validating the SMB server service principal name (SPN) within the authentication blob provided by a SMB client to prevent a class of attacks against SMB servers referred to as SMB relay attacks. This setting will affect both SMB1 and SMB2.

The recommended state for this setting is: Accept if provided by client. Configuring this setting to Required from client also conforms to the benchmark.

Note: Since the release of the MS [KB3161561](#) security patch, this setting can cause significant issues (such as replication problems, group policy editing issues and blue screen crashes) on Domain Controllers when used *simultaneously* with UNC path hardening (i.e. Rule 18.5.14.1). **CIS therefore recommends against deploying this setting on Domain Controllers.**

Rationale:

The identity of a computer can be spoofed to gain unauthorized access to network resources.

Impact:

All Windows operating systems support both a client-side SMB component and a server-side SMB component. This setting affects the server SMB behavior, and its implementation should be carefully evaluated and tested to prevent disruptions to file and print serving capabilities.

If configured to `Accept if provided by client`, the SMB server will accept and validate the SPN provided by the SMB client and allow a session to be established if it matches the SMB server's list of SPN's for itself. If the SPN does NOT match, the session request for that SMB client will be denied.

If configured to `Required from client`, the SMB client MUST send a SPN name in session setup, and the SPN name provided MUST match the SMB server that is being requested to establish a connection. If no SPN is provided by client, or the SPN provided does not match, the session is denied.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanManServer\Parameters:  
SMBServerNameHardeningLevel
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to `Accept if provided by client` (configuring to `Required from client` also conforms to the benchmark):

```
Computer Configuration\Policies\Windows Settings\Security Settings\Local  
Policies\Security Options\Microsoft network server: Server SPN target name  
validation level
```

Default Value:

Off. (The SPN is not required or validated by the SMB server from a SMB client.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.10 Network access

This section contains recommendations related to network access.

2.3.10.1 (L1) Ensure 'Network access: Allow anonymous SID/Name translation' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether an anonymous user can request security identifier (SID) attributes for another user, or use a SID to obtain its corresponding user name.

The recommended state for this setting is: Disabled.

Rationale:

If this policy setting is enabled, a user with local access could use the well-known Administrator's SID to learn the real name of the built-in Administrator account, even if it has been renamed. That person could then use the account name to initiate a password guessing attack.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network access: Allow anonymous SID/Name translation

Default Value:

Disabled. (An anonymous user cannot request the SID attribute for another user.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.10.2 (L1) Ensure 'Network access: Do not allow anonymous enumeration of SAM accounts' is set to 'Enabled' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

This policy setting controls the ability of anonymous users to enumerate the accounts in the Security Accounts Manager (SAM). If you enable this policy setting, users with anonymous connections will not be able to enumerate domain account user names on the systems in your environment. This policy setting also allows additional restrictions on anonymous connections.

The recommended state for this setting is: Enabled.

Note: This policy has no effect on Domain Controllers.

Rationale:

An unauthorized user could anonymously list account names and use the information to attempt to guess passwords or perform social engineering attacks. (Social engineering attacks try to deceive users in some way to obtain passwords or some form of security information.)

Impact:

None - this is the default behavior. It will be impossible to establish trusts with Windows NT 4.0-based domains. Also, client computers that run older versions of the Windows operating system such as Windows NT 3.51 and Windows 95 will experience problems when they try to use resources on the server.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa:RestrictAnonymousSAM

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network access: Do not allow anonymous enumeration of SAM accounts

Default Value:

Enabled. (Do not allow anonymous enumeration of SAM accounts. This option replaces Everyone with Authenticated Users in the security permissions for resources.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73667
Rule ID: SV-88331r1_rule
STIG ID: WN16-SO-000260
Severity: CAT I

Note: This recommendation is intended for Member Servers only. The setting for Domain Controllers, according to the STIG, is located in the L3 Domain Controller profile.

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.10.3 (L3) Ensure 'Network access: Do not allow anonymous enumeration of SAM accounts' is set to 'Enabled' (DC only) (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller

Description:

This policy setting controls the ability of anonymous users to enumerate the accounts in the Security Accounts Manager (SAM). If you enable this policy setting, users with anonymous connections will not be able to enumerate domain account user names on the systems in your environment. This policy setting also allows additional restrictions on anonymous connections.

The recommended state for this setting is: Enabled.

Note: This policy has no effect on Domain Controllers.

Rationale:

An unauthorized user could anonymously list account names and use the information to attempt to guess passwords or perform social engineering attacks. (Social engineering attacks try to deceive users in some way to obtain passwords or some form of security information.)

Impact:

None - this is the default behavior. It will be impossible to establish trusts with Windows NT 4.0-based domains. Also, client computers that run older versions of the Windows operating system such as Windows NT 3.51 and Windows 95 will experience problems when they try to use resources on the server.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa:RestrictAnonymousSAM

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network access: Do not allow anonymous enumeration of SAM accounts

Default Value:

Enabled. (Do not allow anonymous enumeration of SAM accounts. This option replaces Everyone with Authenticated Users in the security permissions for resources.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73667
Rule ID: SV-88331r1_rule
STIG ID: WN16-SO-000260
Severity: CAT I

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.10.4 (L3) Ensure 'Network access: Do not allow anonymous enumeration of SAM accounts and shares' is set to 'Enabled' (DC only) (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller

Description:

This policy setting controls the ability of anonymous users to enumerate SAM accounts as well as shares. If you enable this policy setting, anonymous users will not be able to enumerate domain account user names and network share names on the systems in your environment.

The STIG recommended state for this setting is: Enabled.

Note: This policy has no effect on Domain Controllers.

Rationale:

An unauthorized user could anonymously list account names and shared resources and use the information to attempt to guess passwords or perform social engineering attacks. (Social engineering attacks try to deceive users in some way to obtain passwords or some form of security information.)

Impact:

It will be impossible to establish trusts with Windows NT 4.0-based domains. Also, client computers that run older versions of the Windows operating system such as Windows NT 3.51 and Windows 95 will experience problems when they try to use resources on the server. Users who access file and print servers anonymously will be unable to list the shared network resources on those servers; the users will have to authenticate before they can view the lists of shared folders and printers. However, even with this policy setting enabled, anonymous users will have access to resources with permissions that explicitly include the built-in group, ANONYMOUS LOGON.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa:RestrictAnonymous

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network access: Do not allow anonymous enumeration of SAM accounts and shares

Default Value:

Disabled. (Allow anonymous enumeration of SAM accounts and shares. No additional permissions can be assigned by the administrator for anonymous connections to the computer. Anonymous connections will rely on default permissions.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73669
Rule ID: SV-88333r1_rule
STIG ID: WN16-SO-000270
Severity: CAT I

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.10.5 (L1) Ensure 'Network access: Do not allow anonymous enumeration of SAM accounts and shares' is set to 'Enabled' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

This policy setting controls the ability of anonymous users to enumerate SAM accounts as well as shares. If you enable this policy setting, anonymous users will not be able to enumerate domain account user names and network share names on the systems in your environment.

The recommended state for this setting is: Enabled.

Note: This policy has no effect on Domain Controllers.

Rationale:

An unauthorized user could anonymously list account names and shared resources and use the information to attempt to guess passwords or perform social engineering attacks. (Social engineering attacks try to deceive users in some way to obtain passwords or some form of security information.)

Impact:

It will be impossible to establish trusts with Windows NT 4.0-based domains. Also, client computers that run older versions of the Windows operating system such as Windows NT 3.51 and Windows 95 will experience problems when they try to use resources on the server. Users who access file and print servers anonymously will be unable to list the shared network resources on those servers; the users will have to authenticate before they can view the lists of shared folders and printers. However, even with this policy setting enabled, anonymous users will have access to resources with permissions that explicitly include the built-in group, ANONYMOUS LOGON.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa:RestrictAnonymous

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network access: Do not allow anonymous enumeration of SAM accounts and shares

Default Value:

Disabled. (Allow anonymous enumeration of SAM accounts and shares. No additional permissions can be assigned by the administrator for anonymous connections to the computer. Anonymous connections will rely on default permissions.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73669
Rule ID: SV-88333r1_rule
STIG ID: WN16-SO-000270
Severity: CAT II

Note: This recommendation is intended for Member Servers only. The setting for Domain Controllers, according to the STIG, is located in the L3 Domain Controller profile.

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.10.6 (L2) Ensure 'Network access: Do not allow storage of passwords and credentials for network authentication' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting determines whether Credential Manager (formerly called Stored User Names and Passwords) saves passwords or credentials for later use when it gains domain authentication.

The recommended state for this setting is: Enabled.

Note: Changes to this setting will not take effect until Windows is restarted.

Rationale:

Passwords that are cached can be accessed by the user when logged on to the computer. Although this information may sound obvious, a problem can arise if the user unknowingly executes hostile code that reads the passwords and forwards them to another, unauthorized user.

Impact:

Credential Manager will not store passwords and credentials on the computer. Users will be forced to enter passwords whenever they log on to their Passport account or other network resources that aren't accessible to their domain account. Testing has shown that clients running Windows Vista or Windows Server 2008 will be unable to connect to Distributed File System (DFS) shares in untrusted domains. Enabling this setting also makes it impossible to specify alternate credentials for scheduled tasks, this can cause a variety of problems. For example, some third party backup products will no longer work. This policy setting should have no impact on users who access network resources that are configured to allow access with their Active Directory-based domain account.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa:DisableDomainCreds

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network access: Do not allow storage of passwords and credentials for network authentication

Default Value:

Disabled. (Credential Manager will store passwords and credentials on the computer for later use for domain authentication.)

CIS Controls:

Version 7

16.4 Encrypt or Hash all Authentication Credentials

Encrypt or hash with a salt all authentication credentials when stored.

2.3.10.7 (L1) Ensure 'Network access: Let Everyone permissions apply to anonymous users' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines what additional permissions are assigned for anonymous connections to the computer.

The recommended state for this setting is: Disabled.

Rationale:

An unauthorized user could anonymously list account names and shared resources and use the information to attempt to guess passwords, perform social engineering attacks, or launch DoS attacks.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa:EveryoneIncludesAnonymous

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network access: Let Everyone permissions apply to anonymous users

Default Value:

Disabled. (Anonymous users can only access those resources for which the built-in group ANONYMOUS LOGON has been explicitly given permission.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73673
Rule ID: SV-88337r1_rule
STIG ID: WN16-SO-000290
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.10.8 (L1) Configure 'Network access: Named Pipes that can be accessed anonymously' (DC only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller

Description:

This policy setting determines which communication sessions, or pipes, will have attributes and permissions that allow anonymous access.

The recommended state for this setting is: LSARPC, NETLOGON, SAMR and (when the legacy *Computer Browser* service is enabled) BROWSER.

Note: A Member Server that holds the *Remote Desktop Services* Role with *Remote Desktop Licensing* Role Service will require a special exception to this recommendation, to allow the HydraLSPipe and TermServLicensing Named Pipes to be accessed anonymously.

Rationale:

Limiting named pipes that can be accessed anonymously will reduce the attack surface of the system.

Impact:

Null session access over named pipes will be disabled unless they are included, and applications that rely on this feature or on unauthenticated access to named pipes will no longer function. The BROWSER named pipe may need to be added to this list if the *Computer Browser* service is needed for supporting legacy components. The *Computer Browser* service is disabled by default.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanManServer\Parameters:  
NullSessionPipes
```

Remediation:

To establish the recommended configuration via GP, configure the following UI path:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network access: Named Pipes that can be accessed anonymously

Default Value:

None.

CIS Controls:

Version 7

14.1 Segment the Network Based on Sensitivity

Segment the network based on the label or classification level of the information stored on the servers, locate all sensitive information on separated Virtual Local Area Networks (VLANs).

14.2 Enable Firewall Filtering Between VLANs

Enable firewall filtering between VLANs to ensure that only authorized systems are able to communicate with other systems necessary to fulfill their specific responsibilities.

2.3.10.9 (L1) Configure 'Network access: Named Pipes that can be accessed anonymously' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

This policy setting determines which communication sessions, or pipes, will have attributes and permissions that allow anonymous access.

The recommended state for this setting is: <blank> (i.e. None), or (when the legacy *Computer Browser* service is enabled) `BROWSER`.

Note: A Member Server that holds the *Remote Desktop Services* Role with *Remote Desktop Licensing* Role Service will require a special exception to this recommendation, to allow the `HydraLSPipe` and `TermServLicensing` Named Pipes to be accessed anonymously.

Rationale:

Limiting named pipes that can be accessed anonymously will reduce the attack surface of the system.

Impact:

Null session access over named pipes will be disabled unless they are included, and applications that rely on this feature or on unauthenticated access to named pipes will no longer function. The `BROWSER` named pipe may need to be added to this list if the *Computer Browser* service is needed for supporting legacy components. The *Computer Browser* service is disabled by default.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanManServer\Parameters:  
NullSessionPipes
```

Remediation:

To establish the recommended configuration via GP, configure the following UI path:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network access: Named Pipes that can be accessed anonymously

Default Value:

None.

CIS Controls:

Version 7

14.1 Segment the Network Based on Sensitivity

Segment the network based on the label or classification level of the information stored on the servers, locate all sensitive information on separated Virtual Local Area Networks (VLANs).

14.2 Enable Firewall Filtering Between VLANs

Enable firewall filtering between VLANs to ensure that only authorized systems are able to communicate with other systems necessary to fulfill their specific responsibilities.

2.3.10.10 (L1) Configure 'Network access: Remotely accessible registry paths' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines which registry paths will be accessible over the network, regardless of the users or groups listed in the access control list (ACL) of the `winreg` registry key.

Note: This setting does not exist in Windows XP. There was a setting with that name in Windows XP, but it is called "Network access: Remotely accessible registry paths and sub-paths" in Windows Server 2003, Windows Vista, and Windows Server 2008 (non-R2).

Note #2: When you configure this setting you specify a list of one or more objects. The delimiter used when entering the list is a line feed or carriage return, that is, type the first object on the list, press the Enter button, type the next object, press Enter again, etc. The setting value is stored as a comma-delimited list in group policy security templates. It is also rendered as a comma-delimited list in Group Policy Editor's display pane and the Resultant Set of Policy console. It is recorded in the registry as a line-feed delimited list in a `REG_MULTI_SZ` value.

The recommended state for this setting is:

```
System\CurrentControlSet\Control\ProductOption  
System\CurrentControlSet\Control\Server Applications  
Software\Microsoft\Windows NT\CurrentVersion
```

Rationale:

The registry is a database that contains computer configuration information, and much of the information is sensitive. An attacker could use this information to facilitate unauthorized activities. To reduce the risk of such an attack, suitable ACLs are assigned throughout the registry to help protect it from access by unauthorized users.

Impact:

None - this is the default behavior. However, if you remove the default registry paths from the list of accessible ones, remote management tools such as the Microsoft Baseline Security Analyzer and Microsoft Systems Management Server could fail, as they require remote access to the registry to properly monitor and manage computers.

Note: If you want to allow remote access, you must also enable the Remote Registry service.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\SecurePipeServers\Winreg\AllowedExactPaths:Machine

Remediation:

To establish the recommended configuration via GP, set the following UI path to:

System\CurrentControlSet\Control\ProductOptions
System\CurrentControlSet\Control\Server Applications
Software\Microsoft\Windows NT\CurrentVersion

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network access: Remotely accessible registry paths

Default Value:

System\CurrentControlSet\Control\ProductOptions
System\CurrentControlSet\Control\Server Applications
Software\Microsoft\Windows NT\CurrentVersion

CIS Controls:

Version 7

14.9 Enforce Detail Logging for Access or Changes to Sensitive Data

Enforce detailed audit logging for access to sensitive data or changes to sensitive data (utilizing tools such as File Integrity Monitoring or Security Information and Event Monitoring).

2.3.10.11 (L1) Configure 'Network access: Remotely accessible registry paths and sub-paths' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Member Server
- Level 3 - STIG Domain Controller

Description:

This policy setting determines which registry paths and sub-paths will be accessible over the network, regardless of the users or groups listed in the access control list (ACL) of the `winreg` registry key.

Note: In Windows XP this setting is called "Network access: Remotely accessible registry paths," the setting with that same name in Windows Vista, Windows Server 2008 (non-R2), and Windows Server 2003 does not exist in Windows XP.

Note #2: When you configure this setting you specify a list of one or more objects. The delimiter used when entering the list is a line feed or carriage return, that is, type the first object on the list, press the Enter button, type the next object, press Enter again, etc. The setting value is stored as a comma-delimited list in group policy security templates. It is also rendered as a comma-delimited list in Group Policy Editor's display pane and the Resultant Set of Policy console. It is recorded in the registry as a line-feed delimited list in a REG_MULTI_SZ value.

The recommended state for this setting is:

```
System\CurrentControlSet\Control\Print\Printers  
System\CurrentControlSet\Services\Eventlog  
Software\Microsoft\OLAP Server  
Software\Microsoft\Windows NT\CurrentVersion\Print  
Software\Microsoft\Windows NT\CurrentVersion\Windows  
System\CurrentControlSet\Control\ContentIndex  
System\CurrentControlSet\Control\Terminal Server  
System\CurrentControlSet\Control\Terminal Server\UserConfig  
System\CurrentControlSet\Control\Terminal Server\DefaultUserConfiguration  
Software\Microsoft\Windows NT\CurrentVersion\Perflib  
System\CurrentControlSet\Services\SysmonLog
```

The recommended state for servers that hold the *Active Directory Certificate Services Role* with *Certification Authority* Role Service includes the above list and:

```
System\CurrentControlSet\Services\CertSvc
```

The recommended state for servers that have the *WINS Server* Feature installed includes the above list and:

```
System\CurrentControlSet\Services\WINS
```

Rationale:

The registry contains sensitive computer configuration information that could be used by an attacker to facilitate unauthorized activities. The fact that the default ACLs assigned throughout the registry are fairly restrictive and help to protect the registry from access by unauthorized users reduces the risk of such an attack.

Impact:

None - this is the default behavior. However, if you remove the default registry paths from the list of accessible ones, remote management tools such as the Microsoft Baseline Security Analyzer and Microsoft Systems Management Server could fail, as they require remote access to the registry to properly monitor and manage computers.

Note: If you want to allow remote access, you must also enable the Remote Registry service.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\SecurePipeServers\Winreg\AllowedPaths:Machine
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to:

```
System\CurrentControlSet\Control\Print\Printers  
System\CurrentControlSet\Services\Eventlog  
Software\Microsoft\OLAP Server  
Software\Microsoft\Windows NT\CurrentVersion\Print  
Software\Microsoft\Windows NT\CurrentVersion\Windows  
System\CurrentControlSet\Control\ContentIndex  
System\CurrentControlSet\Control\Terminal Server  
System\CurrentControlSet\Control\Terminal Server\UserConfig  
System\CurrentControlSet\Control\Terminal Server\DefaultUserConfiguration  
Software\Microsoft\Windows NT\CurrentVersion\Perflib  
System\CurrentControlSet\Services\SysmonLog
```

```
Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network access: Remotely accessible registry paths and sub-paths
```

When a server holds the *Active Directory Certificate Services* Role with *Certification Authority* Role Service, the above list should also include:

```
System\CurrentControlSet\Services\CertSvc.
```

When a server has the *WINS Server* Feature installed, the above list should also include:

```
System\CurrentControlSet\Services\WINS
```

Default Value:

```
System\CurrentControlSet\Control\Print\Printers  
System\CurrentControlSet\Services\Eventlog  
Software\Microsoft\OLAP Server  
Software\Microsoft\Windows NT\CurrentVersion\Print  
Software\Microsoft\Windows NT\CurrentVersion\Windows  
System\CurrentControlSet\Control\ContentIndex  
System\CurrentControlSet\Control\Terminal Server  
System\CurrentControlSet\Control\Terminal Server\UserConfig  
System\CurrentControlSet\Control\Terminal Server\DefaultUserConfiguration  
Software\Microsoft\Windows NT\CurrentVersion\Perflib  
System\CurrentControlSet\Services\SysmonLog
```

CIS Controls:

Version 7

14.6 Protect Information through Access Control Lists

Protect all information stored on systems with file system, network share, claims, application, or database specific access control lists. These controls will enforce the principle that only authorized individuals should have access to the information based on their need to access the information as a part of their responsibilities.

14.9 Enforce Detail Logging for Access or Changes to Sensitive Data

Enforce detailed audit logging for access to sensitive data or changes to sensitive data (utilizing tools such as File Integrity Monitoring or Security Information and Event Monitoring).

2.3.10.12 (L1) Ensure 'Network access: Restrict anonymous access to Named Pipes and Shares' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

When enabled, this policy setting restricts anonymous access to only those shares and pipes that are named in the Network access: Named pipes that can be accessed anonymously and Network access: Shares that can be accessed anonymously settings. This policy setting controls null session access to shares on your computers by adding `RestrictNullSessAccess` with the value 1 in the

`HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanManServer\Parameters`

registry key. This registry value toggles null session shares on or off to control whether the server service restricts unauthenticated clients' access to named resources.

The recommended state for this setting is: Enabled.

Rationale:

Null sessions are a weakness that can be exploited through shares (including the default shares) on computers in your environment.

Impact:

None - this is the default behavior. If you choose to enable this setting and are supporting Windows NT 4.0 domains, you should check if any of the named pipes are required to maintain trust relationships between the domains, and then add the pipe to the **Network access: Named pipes that can be accessed anonymously** list:

- COMNAP: SNA session access
- COMNODE: SNA session access
- SQL\QUERY: SQL instance access
- SPOOLSS: Spooler service
- LLSRPC: License Logging service
- NETLOGON: Net Logon service
- LSARPC: LSA access
- SAMR: Remote access to SAM objects
- BROWSER: Computer Browser service

Previous to the release of Windows Server 2003 with Service Pack 1 (SP1) these named pipes were allowed anonymous access by default, but with the increased hardening in Windows Server 2003 with SP1 these pipes must be explicitly added if needed.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanManServer\Parameters:
RestrictNullSessAccess

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network access: Restrict anonymous access to Named Pipes and Shares

Default Value:

Enabled. (Anonymous access is restricted to shares and pipes listed in the Network access: Named pipes that can be accessed anonymously and Network access: Shares that can be accessed anonymously settings.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73675
Rule ID: SV-88339r1_rule
STIG ID: WN16-SO-000300
Severity: CAT II

CIS Controls:

Version 7

14.6 Protect Information through Access Control Lists

Protect all information stored on systems with file system, network share, claims, application, or database specific access control lists. These controls will enforce the principle that only authorized individuals should have access to the information based on their need to access the information as a part of their responsibilities.

2.3.10.13 (L1) Ensure 'Network access: Restrict clients allowed to make remote calls to SAM' is set to 'Administrators: Remote Access: Allow' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

This policy setting allows you to restrict remote RPC connections to SAM.

The recommended state for this setting is: Administrators : Remote Access : Allow.

Note: A Windows 10 R1607, Server 2016 or newer OS is required to access and set this value in Group Policy.

Rationale:

To ensure that an unauthorized user cannot anonymously list local account names or groups and use the information to attempt to guess passwords or perform social engineering attacks. (Social engineering attacks try to deceive users in some way to obtain passwords or some form of security information.)

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa:restrictremotesam

Remediation:

To establish the recommended configuration via GP, set the following UI path to Administrators: Remote Access: Allow:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network access: Restrict clients allowed to make remote calls to SAM

Default Value:

Administrators: Remote Access: Allow.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73677
Rule ID: SV-88341r2_rule
STIG ID: WN16-MS-000310
Severity: CAT II

CIS Controls:

Version 7

4.3 Ensure the Use of Dedicated Administrative Accounts

Ensure that all users with administrative account access use a dedicated or secondary account for elevated activities. This account should only be used for administrative activities and not internet browsing, email, or similar activities.

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

2.3.10.14 (L1) Ensure 'Network access: Shares that can be accessed anonymously' is set to 'None' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines which network shares can be accessed by anonymous users. The default configuration for this policy setting has little effect because all users have to be authenticated before they can access shared resources on the server.

The recommended state for this setting is: <blank> (i.e. None).

Rationale:

It is very dangerous to allow any values in this setting. Any shares that are listed can be accessed by any network user, which could lead to the exposure or corruption of sensitive data.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanManServer\Parameters: NullSessionShares
--

Remediation:

To establish the recommended configuration via GP, set the following UI path to <blank> (i.e. None):

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network access: Shares that can be accessed anonymously

Default Value:

None. (Only authenticated users will have access to all shared resources on the server.)

CIS Controls:

Version 7

14.6 Protect Information through Access Control Lists

Protect all information stored on systems with file system, network share, claims, application, or database specific access control lists. These controls will enforce the principle that only authorized individuals should have access to the information based on their need to access the information as a part of their responsibilities.

2.3.10.15 (L1) Ensure 'Network access: Sharing and security model for local accounts' is set to 'Classic - local users authenticate as themselves' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines how network logons that use local accounts are authenticated. The Classic option allows precise control over access to resources, including the ability to assign different types of access to different users for the same resource. The Guest only option allows you to treat all users equally. In this context, all users authenticate as Guest only to receive the same access level to a given resource.

The recommended state for this setting is: Classic – local users authenticate as themselves.

Note: This setting does not affect interactive logons that are performed remotely by using such services as Telnet or Remote Desktop Services (formerly called Terminal Services).

Rationale:

With the Guest only model, any user who can authenticate to your computer over the network does so with guest privileges, which probably means that they will not have write access to shared resources on that computer. Although this restriction does increase security, it makes it more difficult for authorized users to access shared resources on those computers because ACLs on those resources must include access control entries (ACEs) for the Guest account. With the Classic model, local accounts should be password protected. Otherwise, if Guest access is enabled, anyone can use those user accounts to access shared system resources.

Impact:

None - this is the default configuration for domain-joined computers.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa:ForceGuest

Remediation:

To establish the recommended configuration via GP, set the following UI path to Classic - local users authenticate as themselves:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network access: Sharing and security model for local accounts

Default Value:

On domain-joined computers: Classic - local users authenticate as themselves. (Network logons that use local account credentials authenticate by using those credentials.)

On stand-alone computers: Guest only - local users authenticate as Guest. (Network logons that use local accounts are automatically mapped to the Guest account.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.11 Network security

This section contains recommendations related to network security.

2.3.11.1 (L1) Ensure 'Network security: Allow Local System to use computer identity for NTLM' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether Local System services that use Negotiate when reverting to NTLM authentication can use the computer identity. This policy is supported on at least Windows 7 or Windows Server 2008 R2.

The recommended state for this setting is: Enabled.

Rationale:

When connecting to computers running versions of Windows earlier than Windows Vista or Windows Server 2008 (non-R2), services running as Local System and using SPNEGO (Negotiate) that revert to NTLM use the computer identity. In Windows 7, if you are connecting to a computer running Windows Server 2008 or Windows Vista, then a system service uses either the computer identity or a NULL session. When connecting with a NULL session, a system-generated session key is created, which provides no protection but allows applications to sign and encrypt data without errors. When connecting with the computer identity, both signing and encryption is supported in order to provide data protection.

Impact:

Services running as Local System that use Negotiate when reverting to NTLM authentication will use the computer identity. This might cause some authentication requests between Windows operating systems to fail and log an error.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa:UseMachineId

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network security: Allow Local System to use computer identity for NTLM

Default Value:

Disabled. (Services running as Local System that use Negotiate when reverting to NTLM authentication will authenticate anonymously.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73679
Rule ID: SV-88343r1_rule
STIG ID: WN16-SO-000320
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

2.3.11.2 (L1) Ensure 'Network security: Allow LocalSystem NULL session fallback' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether NTLM is allowed to fall back to a NULL session when used with LocalSystem.

The recommended state for this setting is: `Disabled`.

Rationale:

NULL sessions are less secure because by definition they are unauthenticated.

Impact:

Any applications that require NULL sessions for LocalSystem will not work as designed.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa\MSV1_0:AllowNullSessionFallback`

Remediation:

To establish the recommended configuration via GP, set the following UI path to `Disabled`:

`Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network security: Allow LocalSystem NULL session fallback`

Default Value:

On Windows Server 2008 (non-R2): Enabled. (NTLM will be permitted to fall back to a NULL session when used with LocalSystem.)

On Windows Server 2008 R2 and newer: Disabled. (NTLM will not be permitted to fall back to a NULL session when used with LocalSystem.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73681
Rule ID: SV-88345r1_rule
STIG ID: WN16-SO-000330
Severity: CAT II

CIS Controls:

Version 7

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

2.3.11.3 (L1) Ensure 'Network Security: Allow PKU2U authentication requests to this computer to use online identities' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting determines if online identities are able to authenticate to this computer.

The Public Key Cryptography Based User-to-User (PKU2U) protocol introduced in Windows 7 and Windows Server 2008 R2 is implemented as a security support provider (SSP). The SSP enables peer-to-peer authentication, particularly through the Windows 7 media and file sharing feature called HomeGroup, which permits sharing between computers that are not members of a domain.

With PKU2U, a new extension was introduced to the Negotiate authentication package, Spnego.dll. In previous versions of Windows, Negotiate decided whether to use Kerberos or NTLM for authentication. The extension SSP for Negotiate, Negoexts.dll, which is treated as an authentication protocol by Windows, supports Microsoft SSPs including PKU2U.

When computers are configured to accept authentication requests by using online IDs, Negoexts.dll calls the PKU2U SSP on the computer that is used to log on. The PKU2U SSP obtains a local certificate and exchanges the policy between the peer computers. When validated on the peer computer, the certificate within the metadata is sent to the logon peer for validation and associates the user's certificate to a security token and the logon process completes.

The recommended state for this setting is: Disabled.

Rationale:

The PKU2U protocol is a peer-to-peer authentication protocol - authentication should be managed centrally in most managed networks.

Impact:

None - this is the default configuration for domain-joined computers.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa\pku2u:AllowOnlineID

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network Security: Allow PKU2U authentication requests to this computer to use online identities

Default Value:

Disabled. (Online identities will not be allowed to authenticate to a domain-joined machine.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73683
Rule ID: SV-88347r1_rule
STIG ID: WN16-SO-000340
Severity: CAT II

CIS Controls:

Version 7

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

2.3.11.4 (L1) Ensure 'Network security: Configure encryption types allowed for Kerberos' is set to 'AES128_HMAC_SHA1, AES256_HMAC_SHA1, Future encryption types' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to set the encryption types that Kerberos is allowed to use.

The recommended state for this setting is: AES128_HMAC_SHA1, AES256_HMAC_SHA1, Future encryption types.

Rationale:

The strength of each encryption algorithm varies from one to the next, choosing stronger algorithms will reduce the risk of compromise however doing so may cause issues when the computer attempts to authenticate with systems that do not support them.

Impact:

If not selected, the encryption type will not be allowed. This setting may affect compatibility with client computers or services and applications. Multiple selections are permitted.

Note: Some legacy applications and OSes may require RC4_HMAC_MD5 - we recommend you test in your environment and verify whether you can safely remove it.

Note #2: Windows Server 2008 (non-R2) and below allow DES for Kerberos by default, but later OS versions do not.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System\Kerberos\Parameters:SupportedEncryptionTypes

Remediation:

To establish the recommended configuration via GP, set the following UI path to AES128_HMAC_SHA1, AES256_HMAC_SHA1, Future encryption types:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network security: Configure encryption types allowed for Kerberos

Default Value:

RC4_HMAC_MD5, AES128_HMAC_SHA1, AES256_HMAC_SHA1, Future encryption types.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73685
Rule ID: SV-88349r2_rule
STIG ID: WN16-SO-000350
Severity: CAT II

CIS Controls:

Version 7

16.4 Encrypt or Hash all Authentication Credentials

Encrypt or hash with a salt all authentication credentials when stored.

16.5 Encrypt Transmittal of Username and Authentication Credentials

Ensure that all account usernames and authentication credentials are transmitted across networks using encrypted channels.

2.3.11.5 (L1) Ensure 'Network security: Do not store LAN Manager hash value on next password change' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether the LAN Manager (LM) hash value for the new password is stored when the password is changed. The LM hash is relatively weak and prone to attack compared to the cryptographically stronger Microsoft Windows NT hash. Since LM hashes are stored on the local computer in the security database, passwords can then be easily compromised if the database is attacked.

Note: Older operating systems and some third-party applications may fail when this policy setting is enabled. Also, note that the password will need to be changed on all accounts after you enable this setting to gain the proper benefit.

The recommended state for this setting is: Enabled.

Rationale:

The SAM file can be targeted by attackers who seek access to username and password hashes. Such attacks use special tools to crack passwords, which can then be used to impersonate users and gain access to resources on your network. These types of attacks will not be prevented if you enable this policy setting, but it will be much more difficult for these types of attacks to succeed.

Impact:

None - this is the default behavior. Earlier operating systems such as Windows 95, Windows 98, and Windows ME as well as some third-party applications will fail.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa>NoLMHash

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network security: Do not store LAN Manager hash value on next password change

Default Value:

Enabled. (LAN Manager hash values are not stored when passwords are changed.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73687
Rule ID: SV-88351r1_rule
STIG ID: WN16-SO-000360
Severity: CAT I

CIS Controls:

Version 7

16.4 Encrypt or Hash all Authentication Credentials

Encrypt or hash with a salt all authentication credentials when stored.

16.5 Encrypt Transmittal of Username and Authentication Credentials

Ensure that all account usernames and authentication credentials are transmitted across networks using encrypted channels.

2.3.11.6 (L1) Ensure 'Network security: Force logoff when logon hours expire' is set to 'Enabled' (Manual)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether to disconnect users who are connected to the local computer outside their user account's valid logon hours. This setting affects the Server Message Block (SMB) component. If you enable this policy setting you should also enable *Microsoft network server: Disconnect clients when logon hours expire* (Rule 2.3.9.4).

The recommended state for this setting is: Enabled.

Rationale:

If this setting is disabled, a user could remain connected to the computer outside of their allotted logon hours.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled.

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network security: Force logoff when logon hours expire

Default Value:

Enabled. (When a user's logon time expires, client sessions with the SMB server will be forcibly disconnected. The user will be unable to log on to the computer until their next scheduled access time commences.)

CIS Controls:

Version 7

16.13 Alert on Account Login Behavior Deviation

Alert when users deviate from normal login behavior, such as time-of-day, workstation location and duration.

2.3.11.7 (L1) Ensure 'Network security: LAN Manager authentication level' is set to 'Send NTLMv2 response only. Refuse LM & NTLM' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

LAN Manager (LM) was a family of early Microsoft client/server software (predating Windows NT) that allowed users to link personal computers together on a single network. LM network capabilities included transparent file and print sharing, user security features, and network administration tools. In Active Directory domains, the Kerberos protocol is the default authentication protocol. However, if the Kerberos protocol is not negotiated for some reason, Active Directory will use LM, NTLM, or NTLMv2. LAN Manager authentication includes the LM, NTLM, and NTLM version 2 (NTLMv2) variants, and is the protocol that is used to authenticate all Windows clients when they perform the following operations:

- Join a domain
- Authenticate between Active Directory forests
- Authenticate to down-level domains
- Authenticate to computers that do not run Windows 2000, Windows Server 2003, or Windows XP
- Authenticate to computers that are not in the domain

The Network security: LAN Manager authentication level setting determines which challenge/response authentication protocol is used for network logons. This choice affects the level of authentication protocol used by clients, the level of session security negotiated, and the level of authentication accepted by servers.

The recommended state for this setting is: Send NTLMv2 response only. Refuse LM & NTLM.

Rationale:

Windows 2000 and Windows XP clients were configured by default to send LM and NTLM authentication responses (Windows 95-based and Windows 98-based clients only send LM). The default settings in OSes predating Windows Vista / Windows Server 2008 (non-R2) allowed all clients to authenticate with servers and use their resources. However, this meant that LM responses - the weakest form of authentication response - were sent over the network, and it was potentially possible for attackers to sniff that traffic to more easily reproduce the user's password.

The Windows 95, Windows 98, and Windows NT operating systems cannot use the Kerberos version 5 protocol for authentication. For this reason, in a Windows Server 2003 domain, these computers authenticate by default with both the LM and NTLM protocols for network authentication. You can enforce a more secure authentication protocol for Windows 95, Windows 98, and Windows NT by using NTLMv2. For the logon process, NTLMv2 uses a secure channel to protect the authentication process. Even if you use NTLMv2 for older clients and servers, Windows-based clients and servers that are members of the domain will use the Kerberos authentication protocol to authenticate with Windows Server 2003 or newer Domain Controllers. For these reasons, it is strongly preferred to restrict the use of LM & NTLM (non-v2) as much as possible.

Impact:

Clients use NTLMv2 authentication only and use NTLMv2 session security if the server supports it; Domain Controllers refuse LM and NTLM (accept only NTLMv2 authentication). Clients that do not support NTLMv2 authentication will not be able to authenticate in the domain and access domain resources by using LM and NTLM.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa:ImCompatibilityLevel`

Remediation:

To establish the recommended configuration via GP, set the following UI path to: Send NTLMv2 response only. Refuse LM & NTLM:

`Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network security: LAN Manager authentication level`

Default Value:

Send NTLMv2 response only. (Clients use NTLMv2 authentication only and use NTLMv2 session security if the server supports it; Domain Controllers accept LM, NTLM & NTLMv2 authentication.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73691
Rule ID: SV-88355r1_rule
STIG ID: WN16-SO-000380
Severity: CAT I

CIS Controls:

Version 7

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

2.3.11.8 (L1) Ensure 'Network security: LDAP client signing requirements' is set to 'Negotiate signing' or higher (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines the level of data signing that is requested on behalf of clients that issue LDAP BIND requests.

Note: This policy setting does not have any impact on LDAP simple bind (`ldap_simple_bind`) or LDAP simple bind through SSL (`ldap_simple_bind_s`). No Microsoft LDAP clients that are included with Windows XP Professional use `ldap_simple_bind` or `ldap_simple_bind_s` to communicate with a Domain Controller.

The recommended state for this setting is: Negotiate signing. Configuring this setting to Require signing also conforms to the benchmark.

Rationale:

Unsigned network traffic is susceptible to man-in-the-middle attacks in which an intruder captures the packets between the client and server, modifies them, and then forwards them to the server. For an LDAP server, this susceptibility means that an attacker could cause a server to make decisions that are based on false or altered data from the LDAP queries. To lower this risk in your network, you can implement strong physical security measures to protect the network infrastructure. Also, you can make all types of man-in-the-middle attacks extremely difficult if you require digital signatures on all network packets by means of IPsec authentication headers.

Impact:

None - this is the default behavior. However, if you choose instead to configure the server to *require* LDAP signatures then you must also configure the client. If you do not configure the client it will not be able to communicate with the server, which could cause many features to fail, including user authentication, Group Policy, and logon scripts, because the caller will be told that the LDAP BIND command request failed.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LDAP:LDAPClientIntegrity

Remediation:

To establish the recommended configuration via GP, set the following UI path to Negotiate signing (configuring to Require signing also conforms to the benchmark):

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Network security: LDAP client signing requirements

Default Value:

Negotiate signing. (If Transport Layer Security/Secure Sockets Layer (TLS/SSL) has not been started, the LDAP BIND request is initiated with the LDAP data signing option set in addition to the caller-specified options. If TLS/SSL has been started, the LDAP BIND request is initiated with the caller-specified options.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73693
Rule ID: SV-88357r1_rule
STIG ID: WN16-SO-000390
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.11.9 (L1) Ensure 'Network security: Minimum session security for NTLM SSP based (including secure RPC) clients' is set to 'Require NTLMv2 session security, Require 128-bit encryption' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines which behaviors are allowed by clients for applications using the NTLM Security Support Provider (SSP). The SSP Interface (SSPI) is used by applications that need authentication services. The setting does not modify how the authentication sequence works but instead require certain behaviors in applications that use the SSPI.

The recommended state for this setting is: `Require NTLMv2 session security, Require 128-bit encryption`.

Note: These values are dependent on the *Network security: LAN Manager Authentication Level* (Rule 2.3.11.7) security setting value.

Rationale:

You can enable both options for this policy setting to help protect network traffic that uses the NTLM Security Support Provider (NTLM SSP) from being exposed or tampered with by an attacker who has gained access to the same network. In other words, these options help protect against man-in-the-middle attacks.

Impact:

NTLM connections will fail if NTLMv2 protocol and strong encryption (128-bit) are not **both** negotiated. Client applications that are enforcing these settings will be unable to communicate with older servers that do not support them. This setting could impact Windows Clustering when applied to servers running Windows Server 2003, see Microsoft Knowledge Base article 890761: [You receive an "Error 0x8007042b" error message when you add or join a node to a cluster if you use NTLM version 2 in Windows Server 2003](#) for more information on possible issues and how to resolve them.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa\MSV1_0:NTLMMinClients  
ec
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to **Require NTLMv2 session security, Require 128-bit encryption**:

```
Computer Configuration\Policies\Windows Settings\Security Settings\Local  
Policies\Security Options\Network security: Minimum session security for NTLM  
SSP based (including secure RPC) clients
```

Default Value:

On Windows Server 2008 (non-R2): No requirements.

On Windows Server 2008 R2 and newer: Require 128-bit encryption. (NTLM connections will fail if strong encryption (128-bit) is not negotiated.)

Additional Information:

This Benchmark Recommendation maps to:

```
Microsoft Windows Server 2016 Security Technical Implementation Guide:  
Version 1, Release 13, Benchmark Date: May 15, 2020
```

```
Vul ID: V-73695  
Rule ID: SV-88359r1_rule  
STIG ID: WN16-SO-000400  
Severity: CAT II
```

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.11.10 (L1) Ensure 'Network security: Minimum session security for NTLM SSP based (including secure RPC) servers' is set to 'Require NTLMv2 session security, Require 128-bit encryption' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines which behaviors are allowed by servers for applications using the NTLM Security Support Provider (SSP). The SSP Interface (SSPI) is used by applications that need authentication services. The setting does not modify how the authentication sequence works but instead require certain behaviors in applications that use the SSPI.

The recommended state for this setting is: **Require NTLMv2 session security, Require 128-bit encryption.**

Note: These values are dependent on the *Network security: LAN Manager Authentication Level* (Rule 2.3.11.7) security setting value.

Rationale:

You can enable all of the options for this policy setting to help protect network traffic that uses the NTLM Security Support Provider (NTLM SSP) from being exposed or tampered with by an attacker who has gained access to the same network. That is, these options help protect against man-in-the-middle attacks.

Impact:

NTLM connections will fail if NTLMv2 protocol and strong encryption (128-bit) are not **both** negotiated. Server applications that are enforcing these settings will be unable to communicate with older servers that do not support them. This setting could impact Windows Clustering when applied to servers running Windows Server 2003, see Microsoft Knowledge Base article 890761: [You receive an "Error 0x8007042b" error message when you add or join a node to a cluster if you use NTLM version 2 in Windows Server 2003](#) for more information on possible issues and how to resolve them.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa\MSV1_0:NTLMMinServerS  
ec
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to **Require NTLMv2 session security, Require 128-bit encryption**:

```
Computer Configuration\Policies\Windows Settings\Security Settings\Local  
Policies\Security Options\Network security: Minimum session security for NTLM  
SSP based (including secure RPC) servers
```

Default Value:

On Windows Server 2008 (non-R2): No requirements.

On Windows Server 2008 R2 and newer: Require 128-bit encryption. (NTLM connections will fail if strong encryption (128-bit) is not negotiated.)

Additional Information:

This Benchmark Recommendation maps to:

```
Microsoft Windows Server 2016 Security Technical Implementation Guide:  
Version 1, Release 13, Benchmark Date: May 15, 2020
```

```
Vul ID: V-73697  
Rule ID: SV-88361r1_rule  
STIG ID: WN16-SO-000410  
Severity: CAT II
```

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.12 Recovery console

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

2.3.13 Shutdown

This section contains recommendations related to the Windows shutdown functionality.

2.3.13.1 (L1) Ensure 'Shutdown: Allow system to be shut down without having to log on' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether a computer can be shut down when a user is not logged on. If this policy setting is enabled, the shutdown command is available on the Windows logon screen. It is recommended to disable this policy setting to restrict the ability to shut down the computer to users with credentials on the system.

The recommended state for this setting is: **Disabled**.

Note: In Server 2008 R2 and older versions, this setting had no impact on Remote Desktop (RDP) / Terminal Services sessions - it only affected the local console. However, Microsoft changed the behavior in Windows Server 2012 (non-R2) and above, where if set to Enabled, RDP sessions are also allowed to shut down or restart the server.

Rationale:

Users who can access the console locally could shut down the computer. Attackers could also walk to the local console and restart the server, which would cause a temporary DoS condition. Attackers could also shut down the server and leave all of its applications and services unavailable. As noted in the Description above, the Denial of Service (DoS) risk of enabling this setting dramatically increases in Windows Server 2012 (non-R2) and above, as even remote users could then shut down or restart the server from the logon screen of an RDP session.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System:
ShutdownWithoutLogon

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\Shutdown: Allow system to be shut down without having to log on

Default Value:

Disabled. (Operators will have to log on to servers to shut them down or restart them.)

CIS Controls:

Version 7

4.3 Ensure the Use of Dedicated Administrative Accounts

Ensure that all users with administrative account access use a dedicated or secondary account for elevated activities. This account should only be used for administrative activities and not internet browsing, email, or similar activities.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

2.3.14 System cryptography

This section contains recommendations related to configuring System cryptography.

2.3.14.1 (L3) System cryptography: Force strong key protection for user keys stored on the computer is set to 'User must enter a password each time they use a key' (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller

Description:

This policy setting determines whether users can use private keys, such as their Secure/Multipurpose Internet Mail Extensions (S/MIME) key, without a password.

The recommended state for this setting is: User must enter a password each time they use a key.

Rationale:

If a private key is compromised, an attacker can use the keys that are stored to gain access to the network. If users must provide a password each time they use the key, it will make it more difficult for an attacker to access locally stored keys.

Impact:

A user must provide a password each time they use a key. This is in addition to their domain password.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\Software\Policies\Microsoft\Cryptography:ForceKeyProtectio
n

Remediation:

To establish the recommended configuration via GP, set the following UI path to User must enter a password each time they use a key:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\System Cryptography: Force strong key protection for user keys stored on the computer

Default Value:

Domain Controller Policy - Not Configured

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73699
Rule ID: SV-88363r1_rule
STIG ID: WN16-SO-000420
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.14.2 (L3) '*System cryptography: Use FIPS compliant algorithms for encryption, hashing, and signing*' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller

Description:

This policy setting determines if the Federal Information Processing Standard (FIPS) compliant algorithms for encryption, hashing, and signing are used.

FIPS is a set of security implementation standards that are used for document processing, encryption algorithms and other information technology standards. These standards are used by departments and agencies of the United States federal government.

The STIG recommended state for this setting is: Enabled.

Note: For TLS/SSL this setting determines whether the security provider supports only the FIPS-compliant strong cipher suite known as TLS_RSA_WITH_3DES_EDE_CBC_SHA.

Note #2: For the Encrypting File System (EFS) service, this policy setting supports the 3DES and Advanced Encryption Standard (AES) encryption algorithms for encrypting file data supported by the NTFS file system.

Note #3: For Remote Desktop Services (RDP), this policy should only be enabled if the 3DES encryption algorithm is supported.

Note #4: For BitLocker this policy setting needs to be enabled before any encryption key is generated.

Note #5: For more information on this policy setting please visit [System cryptography Use FIPS compliant algorithms for encryption, hashing, and signing \(Windows 10\) - Windows security | Microsoft Docs](#) and [FIPS 140 Validation - Windows security | Microsoft Docs](#).

Rationale:

This policy setting ensures that the system uses algorithms that are Federal Information Processing Standard (FIPS) compliant for digital encryption, hashing, and signing.

Impact:

Client devices that have this policy setting enabled will not be able to communicate by means of digitally encrypted or signed protocols with servers that do not support these algorithms. Network clients that do not support these algorithms will not be able to use servers that require them for network communications.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa\FIPSAlogithmPolicy:Enabled

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\System cryptography: Use FIPS compliant algorithms for encryption, hashing, and signing

Default Value:

Disabled

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73701
Rule ID: SV-88365r1_rule
STIG ID: WN16-SO-000430
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.15 System objects

This section contains recommendations related to system objects.

2.3.15.1 (L1) Ensure 'System objects: Require case insensitivity for non-Windows subsystems' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether case insensitivity is enforced for all subsystems. The Microsoft Win32 subsystem is case insensitive. However, the kernel supports case sensitivity for other subsystems, such as the Portable Operating System Interface for UNIX (POSIX). Because Windows is case insensitive (but the POSIX subsystem will support case sensitivity), failure to enforce this policy setting makes it possible for a user of the POSIX subsystem to create a file with the same name as another file by using mixed case to label it. Such a situation can block access to these files by another user who uses typical Win32 tools, because only one of the files will be available.

The recommended state for this setting is: Enabled.

Rationale:

Because Windows is case-insensitive but the POSIX subsystem will support case sensitivity, failure to enable this policy setting would make it possible for a user of that subsystem to create a file with the same name as another file but with a different mix of upper and lower case letters. Such a situation could potentially confuse users when they try to access such files from normal Win32 tools because only one of the files will be available.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Kernel:ObCaseInsensitive

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\System objects: Require case insensitivity for non-Windows subsystems

Default Value:

Enabled. (All subsystems will be forced to observe case insensitivity. This configuration may confuse users who are familiar with any UNIX-based operating systems that is case-sensitive.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.15.2 (L1) Ensure 'System objects: Strengthen default permissions of internal system objects (e.g. Symbolic Links)' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines the strength of the default discretionary access control list (DACL) for objects. Active Directory maintains a global list of shared system resources, such as DOS device names, mutexes, and semaphores. In this way, objects can be located and shared among processes. Each type of object is created with a default DACL that specifies who can access the objects and what permissions are granted.

The recommended state for this setting is: Enabled.

Rationale:

This setting determines the strength of the default DACL for objects. Windows maintains a global list of shared computer resources so that objects can be located and shared among processes. Each type of object is created with a default DACL that specifies who can access the objects and with what permissions.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager:ProtectionMode

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\System objects: Strengthen default permissions of internal system objects (e.g. Symbolic Links)

Default Value:

Enabled. (The default DACL is stronger, allowing users who are not administrators to read shared objects but not allowing these users to modify shared objects that they did not create.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73705
Rule ID: SV-88369r1_rule
STIG ID: WN16-SO-000450
Severity: CAT III

CIS Controls:

Version 7

14.6 Protect Information through Access Control Lists

Protect all information stored on systems with file system, network share, claims, application, or database specific access control lists. These controls will enforce the principle that only authorized individuals should have access to the information based on their need to access the information as a part of their responsibilities.

2.3.16 System settings

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

2.3.17 User Account Control

This section contains recommendations related to User Account Control.

2.3.17.1 (L1) Ensure 'User Account Control: Admin Approval Mode for the Built-in Administrator account' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls the behavior of Admin Approval Mode for the built-in Administrator account.

The recommended state for this setting is: Enabled.

Rationale:

One of the risks that the User Account Control feature introduced with Windows Vista is trying to mitigate is that of malicious software running under elevated credentials without the user or administrator being aware of its activity. An attack vector for these programs was to discover the password of the account named "Administrator" because that user account was created for all installations of Windows. To address this risk, in Windows Vista and newer, the built-in Administrator account is now disabled by default. In a default installation of a new computer, accounts with administrative control over the computer are initially set up in one of two ways:

- If the computer is not joined to a domain, the first user account you create has the equivalent permissions as a local administrator.
- If the computer is joined to a domain, no local administrator accounts are created. The Enterprise or Domain Administrator must log on to the computer and create one if a local administrator account is warranted.

Once Windows is installed, the built-in Administrator account may be manually enabled, but we strongly recommend that this account remain disabled.

Impact:

The built-in Administrator account uses Admin Approval Mode. Users that log on using the local Administrator account will be prompted for consent whenever a program requests an elevation in privilege, just like any other user would.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System:
FilterAdministratorToken

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\User Account Control: Admin Approval Mode for the Built-in Administrator account

Default Value:

Disabled. (The built-in Administrator account runs all applications with full administrative privilege.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73707
Rule ID: SV-88371r1_rule
STIG ID: WN16-SO-000460
Severity: CAT II

CIS Controls:

Version 7

4.4 Use Unique Passwords

Where multi-factor authentication is not supported (such as local administrator, root, or service accounts), accounts will use passwords that are unique to that system.

2.3.17.2 (L3) Ensure 'User Account Control: Allow UIAccess applications to prompt for elevation without using the secure desktop' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This security setting controls whether User Interface Accessibility (UIAccess or UIA) programs can automatically disable the secure desktop for elevation prompts that are used by a standard user.

The recommended state for this setting is: `Disabled`.

Note: This setting does not change the behavior of the UAC elevation prompt for administrators.

Rationale:

UIA programs are designed to interact with Windows and application programs on behalf of a user. This setting allows UIA programs to bypass the secure desktop to increase usability in certain cases, but it allows elevation requests to appear on the regular interactive desktop instead of on the secure desktop. This increases the risk that a malicious program could intercept data that is being transferred between the UI and the application. Because UIA programs must be able to respond to prompts regarding security issues, such as the UAC elevation prompt, UIA programs must be highly trusted. To be considered trusted, a UIA program must be digitally signed. By default, UIA programs can be run only from the following protected paths:

- ..\Program Files\ (and subfolders)
- ..\Program Files (x86)\ (and subfolders, in 64-bit versions of Windows only)
- ..\Windows\System32\

The requirement to be in a protected path can be disabled by the **2.3.17.6 (L1) Ensure 'User Account Control: Only elevate UIAccess applications that are installed in secure locations'** recommendation. Although this setting applies to any UIA program, it is used primarily in certain Windows Remote Assistance scenarios.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System:
EnableUIADesktopToggle

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\User Account Control: Allow UIAccess applications to prompt for elevation without using the secure desktop

Default Value:

Disabled

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73709
Rule ID: SV-88373r1_rule
STIG ID: WN16-SO-000470
Severity: CAT II

CIS Controls:

Version 7

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

2.3.17.3 (L1) Ensure 'User Account Control: Behavior of the elevation prompt for administrators in Admin Approval Mode' is set to 'Prompt for consent on the secure desktop' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls the behavior of the elevation prompt for administrators.

The recommended state for this setting is: Prompt for consent on the secure desktop.

Rationale:

One of the risks that the UAC feature introduced with Windows Vista is trying to mitigate is that of malicious software running under elevated credentials without the user or administrator being aware of its activity. This setting raises awareness to the administrator of elevated privilege operations and permits the administrator to prevent a malicious program from elevating its privilege when the program attempts to do so.

Impact:

When an operation (including execution of a Windows binary) requires elevation of privilege, the user is prompted on the secure desktop to select either Permit or Deny. If the user selects Permit, the operation continues with the user's highest available privilege.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System:
ConsentPromptBehaviorAdmin

Remediation:

To establish the recommended configuration via GP, set the following UI path to Prompt for consent on the secure desktop:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\User Account Control: Behavior of the elevation prompt for administrators in Admin Approval Mode

Default Value:

Prompt for consent for non-Windows binaries. (When an operation for a non-Microsoft application requires elevation of privilege, the user is prompted on the secure desktop to select either Permit or Deny. If the user selects Permit, the operation continues with the user's highest available privilege.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73711
Rule ID: SV-88375r1_rule
STIG ID: WN16-SO-000480
Severity: CAT II

CIS Controls:

Version 7

4.3 Ensure the Use of Dedicated Administrative Accounts

Ensure that all users with administrative account access use a dedicated or secondary account for elevated activities. This account should only be used for administrative activities and not internet browsing, email, or similar activities.

2.3.17.4 (L1) Ensure 'User Account Control: Behavior of the elevation prompt for standard users' is set to 'Automatically deny elevation requests' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls the behavior of the elevation prompt for standard users.

The recommended state for this setting is: Automatically deny elevation requests.

Rationale:

One of the risks that the User Account Control feature introduced with Windows Vista is trying to mitigate is that of malicious programs running under elevated credentials without the user or administrator being aware of their activity. This setting raises awareness to the user that a program requires the use of elevated privilege operations and requires that the user be able to supply administrative credentials in order for the program to run.

Impact:

When an operation requires elevation of privilege, a configurable access denied error message is displayed. An enterprise that is running desktops as standard user may choose this setting to reduce help desk calls.

Note: With this setting configured as recommended, the default error message displayed when a user attempts to perform an operation or run a program requiring privilege elevation (without Administrator rights) is "*This program will not run. This program is blocked by group policy. For more information, contact your system administrator.*" Some users who are not used to seeing this message may believe that the operation or program they attempted to run is specifically blocked by group policy, as that is what the message seems to imply. This message may therefore result in user questions as to why that specific operation/program is blocked, when in fact, the problem is that they need to perform the operation or run the program with an Administrative account (or "Run as Administrator" if it *is* already an Administrator account), and they are not doing that.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System:
ConsentPromptBehaviorUser

Remediation:

To establish the recommended configuration via GP, set the following UI path to Automatically deny elevation requests:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\User Account Control: Behavior of the elevation prompt for standard users

Default Value:

Prompt for credentials. (When an operation requires elevation of privilege, the user is prompted to enter an administrative user name and password. If the user enters valid credentials, the operation continues with the applicable privilege.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73713
Rule ID: SV-88377r1_rule
STIG ID: WN16-SO-000490
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

2.3.17.5 (L1) Ensure 'User Account Control: Detect application installations and prompt for elevation' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls the behavior of application installation detection for the computer.

The recommended state for this setting is: Enabled.

Rationale:

Some malicious software will attempt to install itself after being given permission to run. For example, malicious software with a trusted application shell. The user may have given permission for the program to run because the program is trusted, but if they are then prompted for installation of an unknown component this provides another way of trapping the software before it can do damage

Impact:

When an application installation package is detected that requires elevation of privilege, the user is prompted to enter an administrative user name and password. If the user enters valid credentials, the operation continues with the applicable privilege.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System:
EnableInstallerDetection

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\User Account Control: Detect application installations and prompt for elevation

Default Value:

Disabled. (Default for enterprise. Application installation packages are not detected and prompted for elevation.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73715
Rule ID: SV-88379r1_rule
STIG ID: WN16-SO-000500
Severity: CAT II

CIS Controls:

Version 7

2.6 Address unapproved software

Ensure that unauthorized software is either removed or the inventory is updated in a timely manner

2.7 Utilize Application Whitelisting

Utilize application whitelisting technology on all assets to ensure that only authorized software executes and all unauthorized software is blocked from executing on assets.

2.3.17.6 (L1) Ensure 'User Account Control: Only elevate UIAccess applications that are installed in secure locations' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls whether applications that request to run with a User Interface Accessibility (UIAccess) integrity level must reside in a secure location in the file system. Secure locations are limited to the following:

- ...\\Program Files\\, including subfolders
- ...\\Windows\\System32\\
- ...\\Program Files (x86)\\, including subfolders (for 64-bit versions of Windows)

Note: Windows enforces a public key infrastructure (PKI) signature check on any interactive application that requests to run with a UIAccess integrity level regardless of the state of this security setting.

The recommended state for this setting is: Enabled.

Rationale:

UIAccess Integrity allows an application to bypass User Interface Privilege Isolation (UIPI) restrictions when an application is elevated in privilege from a standard user to an administrator. This is required to support accessibility features such as screen readers that are transmitting user interfaces to alternative forms. A process that is started with UIAccess rights has the following abilities:

- To set the foreground window.
- To drive any application window using SendInput function.
- To use read input for all integrity levels using low-level hooks, raw input, GetKeyState, GetAsyncKeyState, and GetKeyboardInput.
- To set journal hooks.
- To uses AttachThreadInput to attach a thread to a higher integrity input queue.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System:
EnableSecureUIAPaths

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\User Account Control: Only elevate UIAccess applications that are installed in secure locations

Default Value:

Enabled. (If an application resides in a secure location in the file system, it runs only with UIAccess integrity.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73717
Rule ID: SV-88381r1_rule
STIG ID: WN16-SO-000510
Severity: CAT II

CIS Controls:

Version 7

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

2.3.17.7 (L1) Ensure 'User Account Control: Run all administrators in Admin Approval Mode' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls the behavior of all User Account Control (UAC) policy settings for the computer. If you change this policy setting, you must restart your computer.

The recommended state for this setting is: Enabled.

Note: If this policy setting is disabled, the Security Center notifies you that the overall security of the operating system has been reduced.

Rationale:

This is the setting that turns on or off UAC. If this setting is disabled, UAC will not be used and any security benefits and risk mitigations that are dependent on UAC will not be present on the system.

Impact:

None - this is the default behavior. Users and administrators will need to learn to work with UAC prompts and adjust their work habits to use least privilege operations.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System:
EnableLUA

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\User Account Control: Run all administrators in Admin Approval Mode

Default Value:

Enabled. (Admin Approval Mode is enabled. This policy must be enabled and related UAC policy settings must also be set appropriately to allow the built-in Administrator account and all other users who are members of the Administrators group to run in Admin Approval Mode.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73719
Rule ID: SV-88383r1_rule
STIG ID: WN16-SO-000520
Severity: CAT II

CIS Controls:

Version 7

4.3 Ensure the Use of Dedicated Administrative Accounts

Ensure that all users with administrative account access use a dedicated or secondary account for elevated activities. This account should only be used for administrative activities and not internet browsing, email, or similar activities.

2.3.17.8 (L1) Ensure 'User Account Control: Switch to the secure desktop when prompting for elevation' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls whether the elevation request prompt is displayed on the interactive user's desktop or the secure desktop.

The recommended state for this setting is: Enabled.

Rationale:

Standard elevation prompt dialog boxes can be spoofed, which may cause users to disclose their passwords to malicious software. The secure desktop presents a very distinct appearance when prompting for elevation, where the user desktop dims, and the elevation prompt UI is more prominent. This increases the likelihood that users who become accustomed to the secure desktop will recognize a spoofed elevation prompt dialog box and not fall for the trick.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System:
PromptOnSecureDesktop

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\User Account Control: Switch to the secure desktop when prompting for elevation

Default Value:

Enabled. (All elevation requests go to the secure desktop regardless of prompt behavior policy settings for administrators and standard users.)

CIS Controls:

Version 7

4.3 Ensure the Use of Dedicated Administrative Accounts

Ensure that all users with administrative account access use a dedicated or secondary account for elevated activities. This account should only be used for administrative activities and not internet browsing, email, or similar activities.

2.3.17.9 (L1) Ensure 'User Account Control: Virtualize file and registry write failures to per-user locations' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls whether application write failures are redirected to defined registry and file system locations. This policy setting mitigates applications that run as administrator and write run-time application data to:

- %ProgramFiles%
- %windir%
- %windir%\System32
- HKEY_LOCAL_MACHINE\SOFTWARE

The recommended state for this setting is: Enabled.

Rationale:

This setting reduces vulnerabilities by ensuring that legacy applications only write data to permitted locations.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System:
EnableVirtualization

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Windows Settings\Security Settings\Local Policies\Security Options\User Account Control: Virtualize file and registry write failures to per-user locations

Default Value:

Enabled. (Application write failures are redirected at run time to defined user locations for both the file system and registry.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73721
Rule ID: SV-88385r1_rule
STIG ID: WN16-SO-000530
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

3 Event Log

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

4 Restricted Groups

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

5 System Services

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

6 Registry

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

7 File System

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

8 Wired Network (IEEE 802.3) Policies

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

9 Windows Firewall with Advanced Security

This section contains recommendations for configuring the Windows Firewall.

9.1 Domain Profile

This section contains recommendations for the Domain Profile of the Windows Firewall.

9.1.1 (L1) Ensure 'Windows Firewall: Domain: Firewall state' is set to 'On (recommended)' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Select On (recommended) to have Windows Firewall with Advanced Security use the settings for this profile to filter network traffic. If you select Off, Windows Firewall with Advanced Security will not use any of the firewall rules or connection security rules for this profile.

The recommended state for this setting is: On (recommended).

Rationale:

If the firewall is turned off all traffic will be able to access the system and an attacker may be more easily able to remotely exploit a weakness in a network service.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\ Policies\Microsoft\WindowsFirewall\DomainProfile\EnableFirewall

Remediation:

To establish the recommended configuration via GP, set the following UI path to On (recommended) :

Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Domain Profile\Firewall state

Default Value:

On (recommended). (The Windows Firewall with Advanced Security will be active in this profile.)

Additional Information:

This Benchmark Recommendation maps to:

Windows Firewall with Advanced Security Security Technical Implementation Guide:

Version 1, Release 7, Benchmark Date: April 27, 2018

Vul ID: V-17415

Rule ID: SV-54833r2_rule

STIG ID: WNFWA-000001

Severity: CAT II

CIS Controls:

Version 7

9.4 Apply Host-based Firewalls or Port Filtering

Apply host-based firewalls or port filtering tools on end systems, with a default-deny rule that drops all traffic except those services and ports that are explicitly allowed.

11.1 Maintain Standard Security Configurations for Network Devices

Maintain standard, documented security configuration standards for all authorized network devices.

11.2 Document Traffic Configuration Rules

All configuration rules that allow traffic to flow through network devices should be documented in a configuration management system with a specific business reason for each rule, a specific individual's name responsible for that business need, and an expected duration of the need.

11.3 Use Automated Tools to Verify Standard Device Configurations and Detect Changes

Compare all network device configuration against approved security configurations defined for each network device in use and alert when any deviations are discovered.

9.1.2 (L1) Ensure 'Windows Firewall: Domain: Inbound connections' is set to 'Block (default)' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting determines the behavior for inbound connections that do not match an inbound firewall rule.

The recommended state for this setting is: Block (default).

Rationale:

If the firewall allows all traffic to access the system then an attacker may be more easily able to remotely exploit a weakness in a network service.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\DomainProfile\DefaultInboundAction

Remediation:

To establish the recommended configuration via GP, set the following UI path to Block (default):

Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Domain Profile\Inbound connections

Default Value:

Block (default). (The Windows Firewall with Advanced Security will block all inbound connections that do not match an inbound firewall rule in this profile.)

Additional Information:

This Benchmark Recommendation maps to:

Windows Firewall with Advanced Security Security Technical Implementation Guide:

Version 1, Release 7, Benchmark Date: April 27, 2018

Vul ID: V-17418

Rule ID: SV-54859r3_rule

STIG ID: WNFWA-000004

Severity: CAT I

CIS Controls:

Version 7

9.4 Apply Host-based Firewalls or Port Filtering

Apply host-based firewalls or port filtering tools on end systems, with a default-deny rule that drops all traffic except those services and ports that are explicitly allowed.

11.2 Document Traffic Configuration Rules

All configuration rules that allow traffic to flow through network devices should be documented in a configuration management system with a specific business reason for each rule, a specific individual's name responsible for that business need, and an expected duration of the need.

11.3 Use Automated Tools to Verify Standard Device Configurations and Detect Changes

Compare all network device configuration against approved security configurations defined for each network device in use and alert when any deviations are discovered.

9.1.3 (L1) Ensure 'Windows Firewall: Domain: Outbound connections' is set to 'Allow (default)' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting determines the behavior for outbound connections that do not match an outbound firewall rule.

The recommended state for this setting is: Allow (default).

Rationale:

Some people believe that it is prudent to block all outbound connections except those specifically approved by the user or administrator. Microsoft disagrees with this opinion, blocking outbound connections by default will force users to deal with a large number of dialog boxes prompting them to authorize or block applications such as their web browser or instant messaging software. Additionally, blocking outbound traffic has little value because if an attacker has compromised the system they can reconfigure the firewall anyway.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\DomainProfile\  
DefaultOutboundAction
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Allow (default):

Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Domain Profile\Outbound connections

Default Value:

Allow (default). (The Windows Firewall with Advanced Security will allow all outbound connections in this profile unless there is a firewall rule explicitly blocking it.)

Additional Information:

This Benchmark Recommendation maps to:

Windows Firewall with Advanced Security Security Technical Implementation Guide:
Version 1, Release 7, Benchmark Date: April 27, 2018

Vul ID: V-17419
Rule ID: SV-54863r3_rule
STIG ID: WNFWA-000005
Severity: CAT II

CIS Controls:

Version 7

9.4 Apply Host-based Firewalls or Port Filtering

Apply host-based firewalls or port filtering tools on end systems, with a default-deny rule that drops all traffic except those services and ports that are explicitly allowed.

11.2 Document Traffic Configuration Rules

All configuration rules that allow traffic to flow through network devices should be documented in a configuration management system with a specific business reason for each rule, a specific individual's name responsible for that business need, and an expected duration of the need.

11.3 Use Automated Tools to Verify Standard Device Configurations and Detect Changes

Compare all network device configuration against approved security configurations defined for each network device in use and alert when any deviations are discovered.

9.1.4 (L1) Ensure 'Windows Firewall: Domain: Settings: Display a notification' is set to 'No' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Select this option to have Windows Firewall with Advanced Security display notifications to the user when a program is blocked from receiving inbound connections.

The recommended state for this setting is: No.

Note: When the Apply local firewall rules setting is configured to No, it's recommended to also configure the Display a notification setting to No. Otherwise, users will continue to receive messages that ask if they want to unblock a restricted inbound connection, but the user's response will be ignored.

Rationale:

Firewall notifications can be complex and may confuse the end users, who would not be able to address the alert.

Impact:

Windows Firewall will not display a notification when a program is blocked from receiving inbound connections.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\DomainProfile\DisableNotifications

Remediation:

To establish the recommended configuration via GP, set the following UI path to No:

Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Domain Profile\Settings Customize\Display a notification

Default Value:

Yes. (Windows Firewall with Advanced Security will display a notification when a program is blocked from receiving inbound connections.)

CIS Controls:

Version 7

11.2 Document Traffic Configuration Rules

All configuration rules that allow traffic to flow through network devices should be documented in a configuration management system with a specific business reason for each rule, a specific individual's name responsible for that business need, and an expected duration of the need.

11.3 Use Automated Tools to Verify Standard Device Configurations and Detect Changes

Compare all network device configuration against approved security configurations defined for each network device in use and alert when any deviations are discovered.

9.1.5 (L1) Ensure 'Windows Firewall: Domain: Logging: Name' is set to '%SystemRoot%\System32\logfiles\firewall\domainfw.log' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Member Server
- Level 3 - STIG Domain Controller

Description:

Use this option to specify the path and name of the file in which Windows Firewall will write its log information.

The recommended state for this setting is:

%SystemRoot%\System32\logfiles\firewall\domainfw.log.

Rationale:

If events are not recorded it may be difficult or impossible to determine the root cause of system problems or the unauthorized activities of malicious users.

Impact:

The log file will be stored in the specified file.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\DomainProfile\Logging\LogFilePath

Remediation:

To establish the recommended configuration via GP, set the following UI path to %SystemRoot%\System32\logfiles\firewall\domainfw.log:

Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Domain Profile\Logging Customize\Name

Default Value:

%SystemRoot%\System32\logfiles\firewall\pfirewall.log

CIS Controls:

Version 7

6.2 Activate audit logging

Ensure that local logging has been enabled on all systems and networking devices.

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

9.1.6 (L1) Ensure 'Windows Firewall: Domain: Logging: Size limit (KB)' is set to '16,384 KB or greater' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Use this option to specify the size limit of the file in which Windows Firewall will write its log information.

The recommended state for this setting is: 16,384 KB or greater.

Rationale:

If events are not recorded it may be difficult or impossible to determine the root cause of system problems or the unauthorized activities of malicious users.

Impact:

The log file size will be limited to the specified size, old events will be overwritten by newer ones when the limit is reached.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\DomainProfile\Logging\LogFileSize

Remediation:

To establish the recommended configuration via GP, set the following UI path to 16,384 KB or greater:

Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Domain Profile\Logging Customize\Size limit (KB)

Default Value:

4,096 KB.

Additional Information:

This Benchmark Recommendation maps to:

Windows Firewall with Advanced Security Security Technical Implementation Guide:
Version 1, Release 7, Benchmark Date: April 27, 2018

Vul ID: V-17425
Rule ID: SV-54874r3_rule
STIG ID: WNFWA-000009
Severity: CAT III

CIS Controls:

Version 7

6.4 Ensure adequate storage for logs

Ensure that all systems that store logs have adequate storage space for the logs generated.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

9.1.7 (L1) Ensure 'Windows Firewall: Domain: Logging: Log dropped packets' is set to 'Yes' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Use this option to log when Windows Firewall with Advanced Security discards an inbound packet for any reason. The log records why and when the packet was dropped. Look for entries with the word `DROP` in the action column of the log.

The recommended state for this setting is: `Yes`.

Rationale:

If events are not recorded it may be difficult or impossible to determine the root cause of system problems or the unauthorized activities of malicious users.

Impact:

Information about dropped packets will be recorded in the firewall log file.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\DomainProfile\Logging\LogDroppedPackets`

Remediation:

To establish the recommended configuration via GP, set the following UI path to `Yes`:

`Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Domain Profile\Logging Customize\Log dropped packets`

Default Value:

No (default). (Information about dropped packets will not be recorded in the firewall log file.)

Additional Information:

This Benchmark Recommendation maps to:

Windows Firewall with Advanced Security Security Technical Implementation Guide:

Version 1, Release 7, Benchmark Date: April 27, 2018

Vul ID: V-17426

Rule ID: SV-54877r3_rule

STIG ID: WNFWA-000010

Severity: CAT III

CIS Controls:

Version 7

6.2 Activate audit logging

Ensure that local logging has been enabled on all systems and networking devices.

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

9.1.8 (L1) Ensure 'Windows Firewall: Domain: Logging: Log successful connections' is set to 'Yes' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Use this option to log when Windows Firewall with Advanced Security allows an inbound connection. The log records why and when the connection was formed. Look for entries with the word ALLOW in the action column of the log.

The recommended state for this setting is: Yes.

Rationale:

If events are not recorded it may be difficult or impossible to determine the root cause of system problems or the unauthorized activities of malicious users.

Impact:

Information about successful connections will be recorded in the firewall log file.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\DomainProfile\Logging\LogSuccessfulConnections

Remediation:

To establish the recommended configuration via GP, set the following UI path to Yes:

Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Domain Profile\Logging Customize\Log successful connections

Default Value:

No (default). (Information about successful connections will not be recorded in the firewall log file.)

Additional Information:

This Benchmark Recommendation maps to:

Windows Firewall with Advanced Security Security Technical Implementation Guide:

Version 1, Release 7, Benchmark Date: April 27, 2018

Vul ID: V-17427

Rule ID: SV-54878r3_rule

STIG ID: WNFWA-000011

Severity: CAT III

CIS Controls:

Version 7

6.2 Activate audit logging

Ensure that local logging has been enabled on all systems and networking devices.

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

9.2 Private Profile

This section contains recommendations for the Private Profile of the Windows Firewall.

9.2.1 (L1) Ensure 'Windows Firewall: Private: Firewall state' is set to 'On (recommended)' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Select On (recommended) to have Windows Firewall with Advanced Security use the settings for this profile to filter network traffic. If you select Off, Windows Firewall with Advanced Security will not use any of the firewall rules or connection security rules for this profile.

The recommended state for this setting is: On (recommended).

Rationale:

If the firewall is turned off all traffic will be able to access the system and an attacker may be more easily able to remotely exploit a weakness in a network service.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\PrivateProfile  
:EnableFirewall
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to On (recommended) :

Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Private Profile\Firewall state

Default Value:

On (recommended). (The Windows Firewall with Advanced Security will be active in this profile.)

Additional Information:

This Benchmark Recommendation maps to:

Windows Firewall with Advanced Security Security Technical Implementation Guide:
Version 1, Release 7, Benchmark Date: April 27, 2018

Vul ID: V-17416
Rule ID: SV-54849r2_rule
STIG ID: WNFWA-000002
Severity: CAT II

CIS Controls:

Version 7

9.4 Apply Host-based Firewalls or Port Filtering

Apply host-based firewalls or port filtering tools on end systems, with a default-deny rule that drops all traffic except those services and ports that are explicitly allowed.

11.2 Document Traffic Configuration Rules

All configuration rules that allow traffic to flow through network devices should be documented in a configuration management system with a specific business reason for each rule, a specific individual's name responsible for that business need, and an expected duration of the need.

11.3 Use Automated Tools to Verify Standard Device Configurations and Detect Changes

Compare all network device configuration against approved security configurations defined for each network device in use and alert when any deviations are discovered.

9.2.2 (L1) Ensure 'Windows Firewall: Private: Inbound connections' is set to 'Block (default)' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting determines the behavior for inbound connections that do not match an inbound firewall rule.

The recommended state for this setting is: Block (default).

Rationale:

If the firewall allows all traffic to access the system then an attacker may be more easily able to remotely exploit a weakness in a network service.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\PrivateProfile  
:DefaultInboundAction
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Block (default):

```
Computer Configuration\Policies\Windows Settings\Security Settings\Windows  
Firewall with Advanced Security\Windows Firewall with Advanced  
Security\Windows Firewall Properties\Private Profile\Inbound connections
```

Default Value:

Block (default). (The Windows Firewall with Advanced Security will block all inbound connections that do not match an inbound firewall rule in this profile.)

Additional Information:

This Benchmark Recommendation maps to:

Windows Firewall with Advanced Security Security Technical Implementation Guide:
Version 1, Release 7, Benchmark Date: April 27, 2018

Vul ID: V-17428
Rule ID: SV-54879r3_rule
STIG ID: WNFWA-000012
Severity: CAT I

CIS Controls:

Version 7

9.4 Apply Host-based Firewalls or Port Filtering

Apply host-based firewalls or port filtering tools on end systems, with a default-deny rule that drops all traffic except those services and ports that are explicitly allowed.

11.2 Document Traffic Configuration Rules

All configuration rules that allow traffic to flow through network devices should be documented in a configuration management system with a specific business reason for each rule, a specific individual's name responsible for that business need, and an expected duration of the need.

11.3 Use Automated Tools to Verify Standard Device Configurations and Detect Changes

Compare all network device configuration against approved security configurations defined for each network device in use and alert when any deviations are discovered.

9.2.3 (L1) Ensure 'Windows Firewall: Private: Outbound connections' is set to 'Allow (default)' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Member Server
- Level 3 - STIG Domain Controller

Description:

This setting determines the behavior for outbound connections that do not match an outbound firewall rule.

The recommended state for this setting is: Allow (default).

Note: If you set Outbound connections to Block and then deploy the firewall policy by using a GPO, computers that receive the GPO settings cannot receive subsequent Group Policy updates unless you create and deploy an outbound rule that enables Group Policy to work. Predefined rules for Core Networking include outbound rules that enable Group Policy to work. Ensure that these outbound rules are active, and thoroughly test firewall profiles before deploying.

Rationale:

Some people believe that it is prudent to block all outbound connections except those specifically approved by the user or administrator. Microsoft disagrees with this opinion, blocking outbound connections by default will force users to deal with a large number of dialog boxes prompting them to authorize or block applications such as their web browser or instant messaging software. Additionally, blocking outbound traffic has little value because if an attacker has compromised the system they can reconfigure the firewall anyway.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\ Policies\Microsoft\WindowsFirewall\PrivateProfile  
:DefaultOutboundAction
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Allow (default):

```
Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Private Profile\Outbound connections
```

Default Value:

Allow (default). (The Windows Firewall with Advanced Security will allow all outbound connections in this profile unless there is a firewall rule explicitly blocking it.)

Additional Information:

This Benchmark Recommendation maps to:

```
Windows Firewall with Advanced Security Security Technical Implementation Guide:  
Version 1, Release 7, Benchmark Date: April 27, 2018  
  
Vul ID: V-17429  
Rule ID: SV-54890r3_rule  
STIG ID: WNFWA-000013  
Severity: CAT II
```

CIS Controls:

Version 7

9.4 Apply Host-based Firewalls or Port Filtering

Apply host-based firewalls or port filtering tools on end systems, with a default-deny rule that drops all traffic except those services and ports that are explicitly allowed.

11.2 Document Traffic Configuration Rules

All configuration rules that allow traffic to flow through network devices should be documented in a configuration management system with a specific business reason for each rule, a specific individual's name responsible for that business need, and an expected duration of the need.

11.3 Use Automated Tools to Verify Standard Device Configurations and Detect Changes

Compare all network device configuration against approved security configurations defined for each network device in use and alert when any deviations are discovered.

9.2.4 (L1) Ensure 'Windows Firewall: Private: Settings: Display a notification' is set to 'No' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Select this option to have Windows Firewall with Advanced Security display notifications to the user when a program is blocked from receiving inbound connections.

The recommended state for this setting is: No.

Note: When the Apply local firewall rules setting is configured to No, it's recommended to also configure the Display a notification setting to No. Otherwise, users will continue to receive messages that ask if they want to unblock a restricted inbound connection, but the user's response will be ignored.

Rationale:

Firewall notifications can be complex and may confuse the end users, who would not be able to address the alert.

Impact:

Windows Firewall will not display a notification when a program is blocked from receiving inbound connections.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\PrivateProfile  
:DisableNotifications
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to No:

Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Private Profile\Settings Customize\Display a notification

Default Value:

Yes. (Windows Firewall with Advanced Security will display a notification when a program is blocked from receiving inbound connections.)

CIS Controls:

Version 7

11.2 Document Traffic Configuration Rules

All configuration rules that allow traffic to flow through network devices should be documented in a configuration management system with a specific business reason for each rule, a specific individual's name responsible for that business need, and an expected duration of the need.

11.3 Use Automated Tools to Verify Standard Device Configurations and Detect Changes

Compare all network device configuration against approved security configurations defined for each network device in use and alert when any deviations are discovered.

9.2.5 (L1) Ensure 'Windows Firewall: Private: Logging: Name' is set to '%SystemRoot%\System32\logfiles\firewall\privatefw.log' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller

Description:

Use this option to specify the path and name of the file in which Windows Firewall will write its log information.

The recommended state for this setting is:

%SystemRoot%\System32\logfiles\firewall\privatefw.log.

Rationale:

If events are not recorded it may be difficult or impossible to determine the root cause of system problems or the unauthorized activities of malicious users.

Impact:

The log file will be stored in the specified file.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\PrivateProfile\Logging:LogFile Path

Remediation:

To establish the recommended configuration via GP, set the following UI path to %SystemRoot%\System32\logfiles\firewall\privatefw.log:

Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Private Profile\Logging Customize\Name

Default Value:

%SystemRoot%\System32\logfiles\firewall\pfirewall.log

CIS Controls:

Version 7

6.2 Activate audit logging

Ensure that local logging has been enabled on all systems and networking devices.

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

9.2.6 (L1) Ensure 'Windows Firewall: Private: Logging: Size limit (KB)' is set to '16,384 KB or greater' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Use this option to specify the size limit of the file in which Windows Firewall will write its log information.

The recommended state for this setting is: 16,384 KB or greater.

Rationale:

If events are not recorded it may be difficult or impossible to determine the root cause of system problems or the unauthorized activities of malicious users.

Impact:

The log file size will be limited to the specified size, old events will be overwritten by newer ones when the limit is reached.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\PrivateProfile\\Logging:LogFileSize

Remediation:

To establish the recommended configuration via GP, set the following UI path to 16,384 KB or greater:

```
Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Private Profile\Logging Customize\Size limit (KB)
```

Default Value:

4,096 KB.

Additional Information:

This Benchmark Recommendation maps to:

```
Windows Firewall with Advanced Security Security Technical Implementation Guide:  
Version 1, Release 7, Benchmark Date: April 27, 2018  
  
Vul ID: V-17435  
Rule ID: SV-54903r3_rule  
STIG ID: WNFWA-000017  
Severity: CAT III
```

CIS Controls:

Version 7

6.4 Ensure adequate storage for logs

Ensure that all systems that store logs have adequate storage space for the logs generated.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

9.2.7 (L1) Ensure 'Windows Firewall: Private: Logging: Log dropped packets' is set to 'Yes' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Use this option to log when Windows Firewall with Advanced Security discards an inbound packet for any reason. The log records why and when the packet was dropped. Look for entries with the word `DROP` in the action column of the log.

The recommended state for this setting is: `Yes`.

Rationale:

If events are not recorded it may be difficult or impossible to determine the root cause of system problems or the unauthorized activities of malicious users.

Impact:

Information about dropped packets will be recorded in the firewall log file.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\PrivateProfile
\Logging:LogDroppedPackets
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to `Yes`:

```
Computer Configuration\Policies\Windows Settings\Security Settings\Windows
Firewall with Advanced Security\Windows Firewall with Advanced
Security\Windows Firewall Properties\Private Profile\Logging Customize\Log
dropped packets
```

Default Value:

No (default). (Information about dropped packets will not be recorded in the firewall log file.)

Additional Information:

This Benchmark Recommendation maps to:

Windows Firewall with Advanced Security Security Technical Implementation Guide:

Version 1, Release 7, Benchmark Date: April 27, 2018

Vul ID: V-17436

Rule ID: SV-54904r3_rule

STIG ID: WNFWA-000018

Severity: CAT III

CIS Controls:

Version 7

6.2 Activate audit logging

Ensure that local logging has been enabled on all systems and networking devices.

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

9.2.8 (L1) Ensure 'Windows Firewall:Private:Logging: Log successful connections' is set to 'Yes' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Use this option to log when Windows Firewall with Advanced Security allows an inbound connection. The log records why and when the connection was formed. Look for entries with the word ALLOW in the action column of the log.

The recommended state for this setting is: Yes.

Rationale:

If events are not recorded it may be difficult or impossible to determine the root cause of system problems or the unauthorized activities of malicious users.

Impact:

Information about successful connections will be recorded in the firewall log file.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\PrivateProfile
\Logging:LogSuccessfulConnections

Remediation:

To establish the recommended configuration via GP, set the following UI path to Yes:

Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Private Profile\Logging Customize\Log successful connections

Default Value:

No (default). (Information about successful connections will not be recorded in the firewall log file.)

Additional Information:

This Benchmark Recommendation maps to:

Windows Firewall with Advanced Security Security Technical Implementation Guide:

Version 1, Release 7, Benchmark Date: April 27, 2018

Vul ID: V-17437

Rule ID: SV-54905r3_rule

STIG ID: WNFWA-000019

Severity: CAT III

CIS Controls:

Version 7

6.2 Activate audit logging

Ensure that local logging has been enabled on all systems and networking devices.

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

9.3 Public Profile

This section contains recommendations for the Public Profile of the Windows Firewall.

9.3.1 (L1) Ensure 'Windows Firewall: Public: Firewall state' is set to 'On (recommended)' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Select On (recommended) to have Windows Firewall with Advanced Security use the settings for this profile to filter network traffic. If you select Off, Windows Firewall with Advanced Security will not use any of the firewall rules or connection security rules for this profile.

The recommended state for this setting is: On (recommended).

Rationale:

If the firewall is turned off all traffic will be able to access the system and an attacker may be more easily able to remotely exploit a weakness in a network service.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\PublicProfile:
EnableFirewall

Remediation:

To establish the recommended configuration via GP, set the following UI path to On (recommended) :

Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Public Profile\Firewall state

Default Value:

On (recommended). (The Windows Firewall with Advanced Security will be active in this profile.)

Additional Information:

This Benchmark Recommendation maps to:

Windows Firewall with Advanced Security Security Technical Implementation Guide:
Version 1, Release 7, Benchmark Date: April 27, 2018

Vul ID: V-17417
Rule ID: SV-54855r2_rule
STIG ID: WNFWA-000003
Severity: CAT II

CIS Controls:

Version 7

9.4 Apply Host-based Firewalls or Port Filtering

Apply host-based firewalls or port filtering tools on end systems, with a default-deny rule that drops all traffic except those services and ports that are explicitly allowed.

11.2 Document Traffic Configuration Rules

All configuration rules that allow traffic to flow through network devices should be documented in a configuration management system with a specific business reason for each rule, a specific individual's name responsible for that business need, and an expected duration of the need.

11.3 Use Automated Tools to Verify Standard Device Configurations and Detect Changes

Compare all network device configuration against approved security configurations defined for each network device in use and alert when any deviations are discovered.

9.3.2 (L1) Ensure 'Windows Firewall: Public: Inbound connections' is set to 'Block (default)' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting determines the behavior for inbound connections that do not match an inbound firewall rule.

The recommended state for this setting is: Block (default).

Rationale:

If the firewall allows all traffic to access the system then an attacker may be more easily able to remotely exploit a weakness in a network service.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\PublicProfile:  
DefaultInboundAction
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Block (default):

```
Computer Configuration\Policies\Windows Settings\Security Settings\Windows  
Firewall with Advanced Security\Windows Firewall with Advanced  
Security\Windows Firewall Properties\Public Profile\Inbound connections
```

Default Value:

Block (default). (The Windows Firewall with Advanced Security will block all inbound connections that do not match an inbound firewall rule in this profile.)

Additional Information:

This Benchmark Recommendation maps to:

Windows Firewall with Advanced Security Security Technical Implementation Guide:
Version 1, Release 7, Benchmark Date: April 27, 2018

Vul ID: V-17438
Rule ID: SV-54906r3_rule
STIG ID: WNFWA-000020
Severity: CAT I

CIS Controls:

Version 7

9.4 Apply Host-based Firewalls or Port Filtering

Apply host-based firewalls or port filtering tools on end systems, with a default-deny rule that drops all traffic except those services and ports that are explicitly allowed.

11.2 Document Traffic Configuration Rules

All configuration rules that allow traffic to flow through network devices should be documented in a configuration management system with a specific business reason for each rule, a specific individual's name responsible for that business need, and an expected duration of the need.

11.3 Use Automated Tools to Verify Standard Device Configurations and Detect Changes

Compare all network device configuration against approved security configurations defined for each network device in use and alert when any deviations are discovered.

9.3.3 (L1) Ensure 'Windows Firewall: Public: Outbound connections' is set to 'Allow (default)' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting determines the behavior for outbound connections that do not match an outbound firewall rule.

The recommended state for this setting is: Allow (default).

Note: If you set Outbound connections to Block and then deploy the firewall policy by using a GPO, computers that receive the GPO settings cannot receive subsequent Group Policy updates unless you create and deploy an outbound rule that enables Group Policy to work. Predefined rules for Core Networking include outbound rules that enable Group Policy to work. Ensure that these outbound rules are active, and thoroughly test firewall profiles before deploying.

Rationale:

Some people believe that it is prudent to block all outbound connections except those specifically approved by the user or administrator. Microsoft disagrees with this opinion, blocking outbound connections by default will force users to deal with a large number of dialog boxes prompting them to authorize or block applications such as their web browser or instant messaging software. Additionally, blocking outbound traffic has little value because if an attacker has compromised the system they can reconfigure the firewall anyway.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\PublicProfile:
DefaultOutboundAction

Remediation:

To establish the recommended configuration via GP, set the following UI path to Allow (default):

Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Public Profile\Outbound connections

Default Value:

Allow (default). (The Windows Firewall with Advanced Security will allow all outbound connections in this profile unless there is a firewall rule explicitly blocking it.)

Additional Information:

This Benchmark Recommendation maps to:

Windows Firewall with Advanced Security Security Technical Implementation Guide:
Version 1, Release 7, Benchmark Date: April 27, 2018

Vul ID: V-17439
Rule ID: SV-54908r3_rule
STIG ID: WNFWA-000021
Severity: CAT II

CIS Controls:

Version 7

9.4 Apply Host-based Firewalls or Port Filtering

Apply host-based firewalls or port filtering tools on end systems, with a default-deny rule that drops all traffic except those services and ports that are explicitly allowed.

11.2 Document Traffic Configuration Rules

All configuration rules that allow traffic to flow through network devices should be documented in a configuration management system with a specific business reason for each rule, a specific individual's name responsible for that business need, and an expected duration of the need.

11.3 Use Automated Tools to Verify Standard Device Configurations and Detect Changes

Compare all network device configuration against approved security configurations defined for each network device in use and alert when any deviations are discovered.

9.3.4 (L1) Ensure 'Windows Firewall: Public: Settings: Display a notification' is set to 'No' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Select this option to have Windows Firewall with Advanced Security display notifications to the user when a program is blocked from receiving inbound connections.

The recommended state for this setting is: No.

Rationale:

Some organizations may prefer to avoid alarming users when firewall rules block certain types of network activity. However, notifications can be helpful when troubleshooting network issues involving the firewall.

Impact:

Windows Firewall will not display a notification when a program is blocked from receiving inbound connections.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\PublicProfile:
DisableNotifications

Remediation:

To establish the recommended configuration via GP, set the following UI path to 'No':

Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Public Profile\Settings Customize\Display a notification

Default Value:

Yes. (Windows Firewall with Advanced Security will display a notification when a program is blocked from receiving inbound connections.)

CIS Controls:

Version 7

11.2 Document Traffic Configuration Rules

All configuration rules that allow traffic to flow through network devices should be documented in a configuration management system with a specific business reason for each rule, a specific individual's name responsible for that business need, and an expected duration of the need.

11.3 Use Automated Tools to Verify Standard Device Configurations and Detect Changes

Compare all network device configuration against approved security configurations defined for each network device in use and alert when any deviations are discovered.

9.3.5 (L1) Ensure 'Windows Firewall: Public: Settings: Apply local firewall rules' is set to 'No' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting controls whether local administrators are allowed to create local firewall rules that apply together with firewall rules configured by Group Policy.

The recommended state for this setting is: No.

Note: When the `Apply local firewall rules` setting is configured to `No`, it's recommended to also configure the `Display a notification` setting to `No`. Otherwise, users will continue to receive messages that ask if they want to unblock a restricted inbound connection, but the user's response will be ignored.

Rationale:

When in the Public profile, there should be no special local firewall exceptions per computer. These settings should be managed by a centralized policy.

Impact:

Administrators can still create firewall rules, but the rules will not be applied.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\PublicProfile:  
AllowLocalPolicyMerge
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to No:

Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Public Profile\Settings Customize\Apply local firewall rules

Default Value:

Yes (default). (Firewall rules created by administrators will be applied.)

Additional Information:

This Benchmark Recommendation maps to:

Windows Firewall with Advanced Security Security Technical Implementation Guide:
Version 1, Release 7, Benchmark Date: April 27, 2018

Vul ID: V-17442
Rule ID: SV-54917r3_rule
STIG ID: WNFWA-000024
Severity: CAT II

CIS Controls:

Version 7

11.2 Document Traffic Configuration Rules

All configuration rules that allow traffic to flow through network devices should be documented in a configuration management system with a specific business reason for each rule, a specific individual's name responsible for that business need, and an expected duration of the need.

11.3 Use Automated Tools to Verify Standard Device Configurations and Detect Changes

Compare all network device configuration against approved security configurations defined for each network device in use and alert when any deviations are discovered.

9.3.6 (L1) Ensure 'Windows Firewall: Public: Settings: Apply local connection security rules' is set to 'No' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting controls whether local administrators are allowed to create connection security rules that apply together with connection security rules configured by Group Policy.

The recommended state for this setting is: No.

Rationale:

Users with administrative privileges might create firewall rules that expose the system to remote attack.

Impact:

Administrators can still create local connection security rules, but the rules will not be applied.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\PublicProfile:  
AllowLocalIPsecPolicyMerge
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to No:

Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Public Profile\Settings Customize\Apply local connection security rules

Default Value:

Yes (default). (Local connection security rules created by administrators will be applied.)

Additional Information:

This Benchmark Recommendation maps to:

Windows Firewall with Advanced Security Security Technical Implementation Guide:
Version 1, Release 7, Benchmark Date: April 27, 2018

Vul ID: V-17443
Rule ID: SV-54918r3_rule
STIG ID: WNFWA-000025
Severity: CAT II

CIS Controls:

Version 7

11.2 Document Traffic Configuration Rules

All configuration rules that allow traffic to flow through network devices should be documented in a configuration management system with a specific business reason for each rule, a specific individual's name responsible for that business need, and an expected duration of the need.

11.3 Use Automated Tools to Verify Standard Device Configurations and Detect Changes

Compare all network device configuration against approved security configurations defined for each network device in use and alert when any deviations are discovered.

.3.7 (L1) Ensure 'Windows Firewall: Public: Logging: Name' is set to '%SystemRoot%\System32\logfiles\firewall\publicfw.log' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Member Server
- Level 3 - STIG Domain Controller

Description:

Use this option to specify the path and name of the file in which Windows Firewall will write its log information.

The recommended state for this setting is:

%SystemRoot%\System32\logfiles\firewall\publicfw.log.

Rationale:

If events are not recorded it may be difficult or impossible to determine the root cause of system problems or the unauthorized activities of malicious users.

Impact:

The log file will be stored in the specified file.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\PublicProfile\Logging\LogFilePath

Remediation:

To establish the recommended configuration via GP, set the following UI path to %SystemRoot%\System32\logfiles\firewall\publicfw.log:

Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Public Profile\Logging Customize\Name

Default Value:

%SystemRoot%\System32\logfiles\firewall\pfirewall.log

CIS Controls:

Version 7

6.2 Activate audit logging

Ensure that local logging has been enabled on all systems and networking devices.

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

9.3.8 (L1) Ensure 'Windows Firewall: Public: Logging: Size limit (KB)' is set to '16,384 KB or greater' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Use this option to specify the size limit of the file in which Windows Firewall will write its log information.

The recommended state for this setting is: 16,384 KB or greater.

Rationale:

If events are not recorded it may be difficult or impossible to determine the root cause of system problems or the unauthorized activities of malicious users.

Impact:

The log file size will be limited to the specified size, old events will be overwritten by newer ones when the limit is reached.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\PublicProfile\Logging:LogFileSize

Remediation:

To establish the recommended configuration via GP, set the following UI path to 16,384 KB or greater:

Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Public Profile\Logging Customize\Size limit (KB)

Default Value:

4,096 KB.

Additional Information:

This Benchmark Recommendation maps to:

Windows Firewall with Advanced Security Security Technical Implementation Guide:
Version 1, Release 7, Benchmark Date: April 27, 2018

Vul ID: V-17445
Rule ID: SV-54921r3_rule
STIG ID: WNFWA-000027
Severity: CAT III

CIS Controls:

Version 7

6.4 Ensure adequate storage for logs

Ensure that all systems that store logs have adequate storage space for the logs generated.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

9.3.9 (L1) Ensure 'Windows Firewall: Public: Logging: Log dropped packets' is set to 'Yes' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Use this option to log when Windows Firewall with Advanced Security discards an inbound packet for any reason. The log records why and when the packet was dropped. Look for entries with the word `DROP` in the action column of the log.

The recommended state for this setting is: `Yes`.

Rationale:

If events are not recorded it may be difficult or impossible to determine the root cause of system problems or the unauthorized activities of malicious users.

Impact:

Information about dropped packets will be recorded in the firewall log file.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\PublicProfile\Logging:LogDroppedPackets`

Remediation:

To establish the recommended configuration via GP, set the following UI path to `Yes`:

`Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Public Profile\Logging Customize\Log dropped packets`

Default Value:

No (default). (Information about dropped packets will not be recorded in the firewall log file.)

Additional Information:

This Benchmark Recommendation maps to:

Windows Firewall with Advanced Security Security Technical Implementation Guide:

Version 1, Release 7, Benchmark Date: April 27, 2018

Vul ID: V-17446

Rule ID: SV-54922r3_rule

STIG ID: WNFWA-000028

Severity: CAT III

CIS Controls:

Version 7

6.2 Activate audit logging

Ensure that local logging has been enabled on all systems and networking devices.

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

9.3.10 (L1) Ensure 'Windows Firewall: Public: Logging: Log successful connections' is set to 'Yes' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Use this option to log when Windows Firewall with Advanced Security allows an inbound connection. The log records why and when the connection was formed. Look for entries with the word ALLOW in the action column of the log.

The recommended state for this setting is: Yes.

Rationale:

If events are not recorded it may be difficult or impossible to determine the root cause of system problems or the unauthorized activities of malicious users.

Impact:

Information about successful connections will be recorded in the firewall log file.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsFirewall\PublicProfile\Logging:LogSuccessfulConnections

Remediation:

To establish the recommended configuration via GP, set the following UI path to Yes:

Computer Configuration\Policies\Windows Settings\Security Settings\Windows Firewall with Advanced Security\Windows Firewall with Advanced Security\Windows Firewall Properties\Public Profile\Logging Customize\Log successful connections

Default Value:

No (default). (Information about successful connections will not be recorded in the firewall log file.)

Additional Information:

This Benchmark Recommendation maps to:

Windows Firewall with Advanced Security Security Technical Implementation Guide:

Version 1, Release 7, Benchmark Date: April 27, 2018

Vul ID: V-17447

Rule ID: SV-54923r3_rule

STIG ID: WNFWA-000029

Severity: CAT III

CIS Controls:

Version 7

6.2 Activate audit logging

Ensure that local logging has been enabled on all systems and networking devices.

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

10 Network List Manager Policies

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

11 Wireless Network (IEEE 802.11) Policies

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

12 Public Key Policies

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

13 Software Restriction Policies

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

14 Network Access Protection NAP Client Configuration

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

15 Application Control Policies

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

16 IP Security Policies

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

17 Advanced Audit Policy Configuration

This section contains recommendations for configuring the Windows audit facilities.

17.1 Account Logon

This section contains recommendations for configuring the Account Logon audit policy.

17.1.1 (L1) Ensure 'Audit Credential Validation' is set to 'Success and Failure' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory reports the results of validation tests on credentials submitted for a user account logon request. These events occur on the computer that is authoritative for the credentials. For domain accounts, the Domain Controller is authoritative, whereas for local accounts, the local computer is authoritative. In domain environments, most of the Account Logon events occur in the Security log of the Domain Controllers that are authoritative for the domain accounts. However, these events can occur on other computers in the organization when local accounts are used to log on. Events for this subcategory include:

- 4774: An account was mapped for logon.
- 4775: An account could not be mapped for logon.
- 4776: The Domain Controller attempted to validate the credentials for an account.
- 4777: The Domain Controller failed to validate the credentials for an account.

The recommended state for this setting is: Success and Failure.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Success and Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Account Logon\Audit Credential Validation

Default Value:

Success.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73413 and V-73415
Rule ID: SV-88065r1_rule and SV-88067r1_rule
STIG ID: WN16-AU-000070 and WN16-AU-000080
Severity: CAT II

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

16.12 Monitor Attempts to Access Deactivated Accounts

Monitor attempts to access deactivated accounts through audit logging.

16.13 Alert on Account Login Behavior Deviation

Alert when users deviate from normal login behavior, such as time-of-day, workstation location and duration.

16.9 Disable Dormant Accounts

Automatically disable dormant accounts after a set period of inactivity.

17.1.2 (L1) Ensure 'Audit Kerberos Authentication Service' is set to 'Success and Failure' (DC Only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller

Description:

This subcategory reports the results of events generated after a Kerberos authentication TGT request. Kerberos is a distributed authentication service that allows a client running on behalf of a user to prove its identity to a server without sending data across the network. This helps mitigate an attacker or server from impersonating a user.

- 4768: A Kerberos authentication ticket (TGT) was requested.
- 4771: Kerberos pre-authentication failed.
- 4772: A Kerberos authentication ticket request failed.

The recommended state for this setting is: Success and Failure.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Success and Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Account Logon\Audit Kerberos Authentication Service

Default Value:

Success.

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

16.12 Monitor Attempts to Access Deactivated Accounts

Monitor attempts to access deactivated accounts through audit logging.

16.13 Alert on Account Login Behavior Deviation

Alert when users deviate from normal login behavior, such as time-of-day, workstation location and duration.

16.9 Disable Dormant Accounts

Automatically disable dormant accounts after a set period of inactivity.

17.1.3 (L1) Ensure 'Audit Kerberos Service Ticket Operations' is set to 'Success and Failure' (DC Only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller

Description:

This subcategory reports the results of events generated by Kerberos authentication ticket-granting ticket (TGT) requests. Kerberos Service Ticket requests (TGS requests) occur as part of service use and access requests by specific accounts. Auditing these events will record the IP address from which the account requested TGS, when TGS was requested, and which encryption type was used.

- 4769: A Kerberos service ticket was requested.
- 4770: A Kerberos service ticket was renewed.
- 4773: A Kerberos service ticket request failed.

The recommended state for this setting is: Success and Failure.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Success and Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Account Logon\Audit Kerberos Service Ticket Operations

Default Value:

Success.

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

16.12 Monitor Attempts to Access Deactivated Accounts

Monitor attempts to access deactivated accounts through audit logging.

16.13 Alert on Account Login Behavior Deviation

Alert when users deviate from normal login behavior, such as time-of-day, workstation location and duration.

16.9 Disable Dormant Accounts

Automatically disable dormant accounts after a set period of inactivity.

17.2 Account Management

This section contains recommendations for configuring the Account Management audit policy.

17.2.1 (L1) Ensure 'Audit Application Group Management' is set to 'Success and Failure' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to audit events generated by changes to application groups such as the following:

- Application group is created, changed, or deleted.
- Member is added or removed from an application group.

Application groups are utilized by Windows Authorization Manager, which is a flexible framework created by Microsoft for integrating role-based access control (RBAC) into applications. More information on Windows Authorization Manager is available at [MSDN - Windows Authorization Manager](#).

The recommended state for this setting is: Success and Failure.

Rationale:

Auditing events in this category may be useful when investigating an incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Success and Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Account Management\Audit Application Group Management

Default Value:

No Auditing.

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

16.12 Monitor Attempts to Access Deactivated Accounts

Monitor attempts to access deactivated accounts through audit logging.

16.9 Disable Dormant Accounts

Automatically disable dormant accounts after a set period of inactivity.

17.2.2 (L1) Ensure 'Audit Computer Account Management' is set to include 'Success' (DC only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller

Description:

This subcategory reports each event of computer account management, such as when a computer account is created, changed, deleted, renamed, disabled, or enabled. Events for this subcategory include:

- 4741: A computer account was created.
- 4742: A computer account was changed.
- 4743: A computer account was deleted.

The recommended state for this setting is to include: Success.

Rationale:

Auditing events in this category may be useful when investigating an incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Success:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Account Management\Audit Computer Account Management

Default Value:

Success.

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

17.2.3 (L1) Ensure 'Audit Distribution Group Management' is set to include 'Success' (DC only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller

Description:

This subcategory reports each event of distribution group management, such as when a distribution group is created, changed, or deleted or when a member is added to or removed from a distribution group. If you enable this Audit policy setting, administrators can track events to detect malicious, accidental, and authorized creation of group accounts. Events for this subcategory include:

- 4744: A security-disabled local group was created.
- 4745: A security-disabled local group was changed.
- 4746: A member was added to a security-disabled local group.
- 4747: A member was removed from a security-disabled local group.
- 4748: A security-disabled local group was deleted.
- 4749: A security-disabled global group was created.
- 4750: A security-disabled global group was changed.
- 4751: A member was added to a security-disabled global group.
- 4752: A member was removed from a security-disabled global group.
- 4753: A security-disabled global group was deleted.
- 4759: A security-disabled universal group was created.
- 4760: A security-disabled universal group was changed.
- 4761: A member was added to a security-disabled universal group.
- 4762: A member was removed from a security-disabled universal group.
- 4763: A security-disabled universal group was deleted.

The recommended state for this setting is to include: Success.

Rationale:

Auditing these events may provide an organization with insight when investigating an incident. For example, when a given unauthorized user was added to a sensitive distribution group.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Success:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Account Management\Audit Distribution Group Management

Default Value:

No Auditing.

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

16.6 Maintain an Inventory of Accounts

Maintain an inventory of all accounts organized by authentication system.

17.2.4 (L1) Ensure 'Audit Other Account Management Events' is set to include 'Success' (DC only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller

Description:

This subcategory reports other account management events. Events for this subcategory include:

- 4782: The password hash an account was accessed.
- 4793: The Password Policy Checking API was called.

The recommended state for this setting is to include: Success.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Success:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Account Management\Audit Other Account Management Events

Default Value:

No Auditing.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73419
Rule ID: SV-88071r1_rule
STIG ID: WN16-AU-000100
Severity: CAT II

Note: This recommendation is intended for Domain Controllers only. The setting for Member Servers, according to the STIG, is located in the L3 Member Server profile.

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

16.6 Maintain an Inventory of Accounts

Maintain an inventory of all accounts organized by authentication system.

17.2.5 (L3) Ensure 'Audit Other Account Management Events' is set to include 'Success' (MS only) (Automated)

Profile Applicability:

- Level 3 - STIG Member Server

Description:

This subcategory reports other account management events. Events for this subcategory include:

- 4782: The password hash an account was accessed.
- 4793: The Password Policy Checking API was called.

The recommended state for this setting is to include: Success.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Success:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Account Management\Audit Other Account Management Events

Default Value:

No Auditing.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73419
Rule ID: SV-88071r1_rule
STIG ID: WN16-AU-000100
Severity: CAT II

Note: This recommendation is intended for Domain Controllers only. The setting for Member Servers, according to the STIG, is located in the L3 Member Server profile.

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

16.6 Maintain an Inventory of Accounts

Maintain an inventory of all accounts organized by authentication system.

17.2.6 (L1) Ensure 'Audit Security Group Management' is set to include 'Success' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory reports each event of security group management, such as when a security group is created, changed, or deleted or when a member is added to or removed from a security group. If you enable this Audit policy setting, administrators can track events to detect malicious, accidental, and authorized creation of security group accounts. Events for this subcategory include:

- 4727: A security-enabled global group was created.
- 4728: A member was added to a security-enabled global group.
- 4729: A member was removed from a security-enabled global group.
- 4730: A security-enabled global group was deleted.
- 4731: A security-enabled local group was created.
- 4732: A member was added to a security-enabled local group.
- 4733: A member was removed from a security-enabled local group.
- 4734: A security-enabled local group was deleted.
- 4735: A security-enabled local group was changed.
- 4737: A security-enabled global group was changed.
- 4754: A security-enabled universal group was created.
- 4755: A security-enabled universal group was changed.
- 4756: A member was added to a security-enabled universal group.
- 4757: A member was removed from a security-enabled universal group.
- 4758: A security-enabled universal group was deleted.
- 4764: A group's type was changed.

The recommended state for this setting is to include: Success.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Success:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Account Management\Audit Security Group Management

Default Value:

Success.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73423
Rule ID: SV-88075r1_rule
STIG ID: WN16-AU-000120
Severity: CAT II

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

16.6 Maintain an Inventory of Accounts

Maintain an inventory of all accounts organized by authentication system.

17.2.7 (L1) Ensure 'Audit User Account Management' is set to 'Success and Failure' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory reports each event of user account management, such as when a user account is created, changed, or deleted; a user account is renamed, disabled, or enabled; or a password is set or changed. If you enable this Audit policy setting, administrators can track events to detect malicious, accidental, and authorized creation of user accounts.

Events for this subcategory include:

- 4720: A user account was created.
- 4722: A user account was enabled.
- 4723: An attempt was made to change an account's password.
- 4724: An attempt was made to reset an account's password.
- 4725: A user account was disabled.
- 4726: A user account was deleted.
- 4738: A user account was changed.
- 4740: A user account was locked out.
- 4765: SID History was added to an account.
- 4766: An attempt to add SID History to an account failed.
- 4767: A user account was unlocked.
- 4780: The ACL was set on accounts which are members of administrators groups.
- 4781: The name of an account was changed.
- 4794: An attempt was made to set the Directory Services Restore Mode.
- 5376: Credential Manager credentials were backed up.
- 5377: Credential Manager credentials were restored from a backup.

The recommended state for this setting is: Success and Failure.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Success and Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Account Management\Audit User Account Management

Default Value:

Success.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73427 and V-73429
Rule ID: SV-88079r1_rule and SV-88081r1_rule
STIG ID: WN16-AU-000140 and WN16-AU-000150
Severity: CAT II

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

16.6 Maintain an Inventory of Accounts

Maintain an inventory of all accounts organized by authentication system.

17.3 Detailed Tracking

This section contains recommendations for configuring the Detailed Tracking audit policy.

17.3.1 (L1) Ensure 'Audit PNP Activity' is set to include 'Success' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to audit when plug and play detects an external device.

The recommended state for this setting is to include: Success.

Note: A Windows 10, Server 2016 or newer OS is required to access and set this value in Group Policy.

Rationale:

Enabling this setting will allow a user to audit events when a device is plugged into a system. This can help alert IT staff if unapproved devices are plugged in.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Success:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Detailed Tracking\Audit PNP Activity

Default Value:

No Auditing.

CIS Controls:

Version 7

8.4 Configure Anti-Malware Scanning of Removable Devices

Configure devices so that they automatically conduct an anti-malware scan of removable media when inserted or connected.

8.5 Configure Devices Not To Auto-run Content

Configure devices to not auto-run content from removable media.

13.7 Manage USB Devices

If USB storage devices are required, enterprise software should be used that can configure systems to allow the use of specific devices. An inventory of such devices should be maintained.

17.3.2 (L1) Ensure 'Audit Process Creation' is set to include 'Success' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory reports the creation of a process and the name of the program or user that created it. Events for this subcategory include:

- 4688: A new process has been created.
- 4696: A primary token was assigned to process.

Refer to Microsoft Knowledge Base article 947226: [Description of security events in Windows Vista and in Windows Server 2008](#) for the most recent information about this setting.

The recommended state for this setting is to include: Success.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Success:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Detailed Tracking\Audit Process Creation

Default Value:

No Auditing.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73433
Rule ID: SV-88085r1_rule
STIG ID: WN16-AU-000170
Severity: CAT II

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

17.4 DS Access

This section contains recommendations for configuring the Directory Services Access audit policy.

17.4.1 (L1) Ensure 'Audit Directory Service Access' is set to include 'Failure' (DC only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller

Description:

This subcategory reports when an AD DS object is accessed. Only objects with SACLs cause audit events to be generated, and only when they are accessed in a manner that matches their SACL. These events are similar to the directory service access events in previous versions of Windows Server. This subcategory applies only to Domain Controllers. Events for this subcategory include:

- 4662 : An operation was performed on an object.

The recommended state for this setting is to include: Failure.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\DS Access\Audit Directory Service Access

Default Value:

Success.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73437
Rule ID: SV-88089r1_rule
STIG ID: WN16-DC-000250
Severity: CAT II

Note: The STIG recommendation for the setting "Audit Directory Service Access" is for "Success and Failure". The CIS recommendation for this setting is for "Failure" only. Please see the L3 Domain Controller profile for "Audit Directory Service Access" for the "Success" setting.

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

14.6 Protect Information through Access Control Lists

Protect all information stored on systems with file system, network share, claims, application, or database specific access control lists. These controls will enforce the principle that only authorized individuals should have access to the information based on their need to access the information as a part of their responsibilities.

17.4.2 (L3) Ensure 'Audit Directory Service Access' is set to include 'Success' (DC only) (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller

Description:

This subcategory reports when an AD DS object is accessed. Only objects with SACLs cause audit events to be generated, and only when they are accessed in a manner that matches their SACL. These events are similar to the directory service access events in previous versions of Windows Server. This subcategory applies only to Domain Controllers. Events for this subcategory include:

- 4662 : An operation was performed on an object.

The STIG recommended state for this setting is to include: Success.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Success:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\DS Access\Audit Directory Service Access

Default Value:

Success.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73435
Rule ID: SV-88087r1_rule
STIG ID: WN16-DC-000240
Severity: CAT II

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

14.6 Protect Information through Access Control Lists

Protect all information stored on systems with file system, network share, claims, application, or database specific access control lists. These controls will enforce the principle that only authorized individuals should have access to the information based on their need to access the information as a part of their responsibilities.

17.4.3 (L1) Ensure 'Audit Directory Service Changes' is set to include 'Success' (DC only) (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller

Description:

This subcategory reports changes to objects in Active Directory Domain Services (AD DS). The types of changes that are reported are create, modify, move, and undelete operations that are performed on an object. DS Change auditing, where appropriate, indicates the old and new values of the changed properties of the objects that were changed. Only objects with SACLs cause audit events to be generated, and only when they are accessed in a manner that matches their SACL. Some objects and properties do not cause audit events to be generated due to settings on the object class in the schema. This subcategory applies only to Domain Controllers. Events for this subcategory include:

- 5136 : A directory service object was modified.
- 5137 : A directory service object was created.
- 5138 : A directory service object was undeleted.
- 5139 : A directory service object was moved.

The recommended state for this setting is to include: Success.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Success:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\DS Access\Audit Directory Service Changes

Default Value:

No Auditing.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73439
Rule ID: SV-88091rl_rule
STIG ID: WN16-DC-000260
Severity: CAT II

Note: The STIG recommendation for the setting "Audit Directory Service Changes" is for "Success and Failure". The CIS recommendation for this setting is for "Success" only. Please see the L3 Domain Controller profile for "Audit Directory Service Changes" for the "Failure" setting.

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

14.6 Protect Information through Access Control Lists

Protect all information stored on systems with file system, network share, claims, application, or database specific access control lists. These controls will enforce the principle that only authorized individuals should have access to the information based on their need to access the information as a part of their responsibilities.

17.4.4 (L3) Ensure 'Audit Directory Service Changes' is set to include 'Failure' (DC only) (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller

Description:

This subcategory reports changes to objects in Active Directory Domain Services (AD DS). The types of changes that are reported are create, modify, move, and undelete operations that are performed on an object. DS Change auditing, where appropriate, indicates the old and new values of the changed properties of the objects that were changed. Only objects with SACLs cause audit events to be generated, and only when they are accessed in a manner that matches their SACL. Some objects and properties do not cause audit events to be generated due to settings on the object class in the schema. This subcategory applies only to Domain Controllers. Events for this subcategory include:

- 5136 : A directory service object was modified.
- 5137 : A directory service object was created.
- 5138 : A directory service object was undeleted.
- 5139 : A directory service object was moved.

The recommended state for this setting is to include: Failure.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\DS Access\Audit Directory Service Changes

Default Value:

No Auditing.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73441
Rule ID: SV-88093r1_rule
STIG ID: WN16-DC-000270
Severity: CAT II

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

14.6 Protect Information through Access Control Lists

Protect all information stored on systems with file system, network share, claims, application, or database specific access control lists. These controls will enforce the principle that only authorized individuals should have access to the information based on their need to access the information as a part of their responsibilities.

17.5 Logon/Logoff

This section contains recommendations for configuring the Logon/Logoff audit policy.

17.5.1 (L1) Ensure 'Audit Account Lockout' is set to include 'Failure' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory reports when a user's account is locked out as a result of too many failed logon attempts. Events for this subcategory include:

- 4625: An account failed to log on.

The recommended state for this setting is to include: Failure.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Logon/Logoff\Audit Account Lockout

Default Value:

Success.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73445
Rule ID: SV-88097r3_rule
STIG ID: WN16-AU-000230
Severity: CAT II

Note: The STIG recommendation for the setting "Audit Account Lockout" is for "Success and Failure". The CIS recommendation for this setting is for "Failure" only. Please see the L3 Domain Controller profile for "Audit Account Lockout" for the "Success" setting.

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

16.6 Maintain an Inventory of Accounts

Maintain an inventory of all accounts organized by authentication system.

17.5.2 (L3) Ensure 'Audit Account Lockout' is set to include 'Success' (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory reports when a user's account is locked out as a result of too many failed logon attempts. Events for this subcategory include:

- 4625: An account failed to log on.

The recommended state for this setting is to include: Success.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Success:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Logon/Logoff\Audit Account Lockout

Default Value:

Success.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73443
Rule ID: SV-88095r3_rule
STIG ID: WN16-AU-000220
Severity: CAT II

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

16.6 Maintain an Inventory of Accounts

Maintain an inventory of all accounts organized by authentication system.

17.5.3 (L1) Ensure 'Audit Group Membership' is set to include 'Success' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Member Server
- Level 3 - STIG Domain Controller

Description:

This policy allows you to audit the group membership information in the user's logon token. Events in this subcategory are generated on the computer on which a logon session is created. For an interactive logon, the security audit event is generated on the computer that the user logged on to. For a network logon, such as accessing a shared folder on the network, the security audit event is generated on the computer hosting the resource.

The recommended state for this setting is to include: Success.

Note: A Windows 10, Server 2016 or newer OS is required to access and set this value in Group Policy.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Success:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Logon/Logoff\Audit Group Membership

Default Value:

No Auditing.

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

16.6 Maintain an Inventory of Accounts

Maintain an inventory of all accounts organized by authentication system.

17.5.4 (L1) Ensure 'Audit Logoff' is set to include 'Success' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory reports when a user logs off from the system. These events occur on the accessed computer. For interactive logons, the generation of these events occurs on the computer that is logged on to. If a network logon takes place to access a share, these events generate on the computer that hosts the accessed resource. If you configure this setting to No auditing, it is difficult or impossible to determine which user has accessed or attempted to access organization computers. Events for this subcategory include:

- 4634: An account was logged off.
- 4647: User initiated logoff.

The recommended state for this setting is to include: Success.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Success:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Logon/Logoff\Audit Logoff

Default Value:

Success.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73449
Rule ID: SV-88101r1_rule
STIG ID: WN16-AU-000250
Severity: CAT II

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

16.13 Alert on Account Login Behavior Deviation

Alert when users deviate from normal login behavior, such as time-of-day, workstation location and duration.

16.6 Maintain an Inventory of Accounts

Maintain an inventory of all accounts organized by authentication system.

17.5.5 (L1) Ensure 'Audit Logon' is set to 'Success and Failure' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory reports when a user attempts to log on to the system. These events occur on the accessed computer. For interactive logons, the generation of these events occurs on the computer that is logged on to. If a network logon takes place to access a share, these events generate on the computer that hosts the accessed resource. If you configure this setting to No auditing, it is difficult or impossible to determine which user has accessed or attempted to access organization computers. Events for this subcategory include:

- 4624: An account was successfully logged on.
- 4625: An account failed to log on.
- 4648: A logon was attempted using explicit credentials.
- 4675: SIDs were filtered.

The recommended state for this setting is: Success and Failure.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Success and Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Logon/Logoff\Audit Logon

Default Value:

Success and Failure.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73451 and V-73453
Rule ID: SV-88103r1_rule and SV-88105r1_rule
STIG ID: WN16-AU-000260 and WN16-AU-000270
Severity: CAT II

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

16.13 Alert on Account Login Behavior Deviation

Alert when users deviate from normal login behavior, such as time-of-day, workstation location and duration.

16.6 Maintain an Inventory of Accounts

Maintain an inventory of all accounts organized by authentication system.

17.5.6 (L1) Ensure 'Audit Other Logon/Logoff Events' is set to 'Success and Failure' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory reports other logon/logoff-related events, such as Remote Desktop Services session disconnects and reconnects, using RunAs to run processes under a different account, and locking and unlocking a workstation. Events for this subcategory include:

- 4649: A replay attack was detected.
- 4778: A session was reconnected to a Window Station.
- 4779: A session was disconnected from a Window Station.
- 4800: The workstation was locked.
- 4801: The workstation was unlocked.
- 4802: The screen saver was invoked.
- 4803: The screen saver was dismissed.
- 5378: The requested credentials delegation was disallowed by policy.
- 5632: A request was made to authenticate to a wireless network.
- 5633: A request was made to authenticate to a wired network.

The recommended state for this setting is: Success and Failure.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Success and Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Logon/Logoff\Audit Other Logon/Logoff Events

Default Value:

No Auditing.

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

16.13 Alert on Account Login Behavior Deviation

Alert when users deviate from normal login behavior, such as time-of-day, workstation location and duration.

16.6 Maintain an Inventory of Accounts

Maintain an inventory of all accounts organized by authentication system.

17.5.7 (L1) Ensure 'Audit Special Logon' is set to include 'Success' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory reports when a special logon is used. A special logon is a logon that has administrator-equivalent privileges and can be used to elevate a process to a higher level. Events for this subcategory include:

- 4964 : Special groups have been assigned to a new logon.

The recommended state for this setting is to include: Success.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Success:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Logon/Logoff\Audit Special Logon

Default Value:

Success.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73455
Rule ID: SV-88107r1_rule
STIG ID: WN16-AU-000280
Severity: CAT II

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

16.6 Maintain an Inventory of Accounts

Maintain an inventory of all accounts organized by authentication system.

17.6 Object Access

This section contains recommendations for configuring the Object Access audit policy.

17.6.1 (L1) Ensure 'Audit Detailed File Share' is set to include 'Failure' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory allows you to audit attempts to access files and folders on a shared folder. Events for this subcategory include:

- 5145: network share object was checked to see whether client can be granted desired access.

The recommended state for this setting is to include: Failure

Rationale:

Auditing the Failures will log which unauthorized users attempted (and failed) to get access to a file or folder on a network share on this computer, which could possibly be an indication of malicious intent.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Object Access\Audit Detailed File Share

Default Value:

No Auditing.

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

14.6 Protect Information through Access Control Lists

Protect all information stored on systems with file system, network share, claims, application, or database specific access control lists. These controls will enforce the principle that only authorized individuals should have access to the information based on their need to access the information as a part of their responsibilities.

17.6.2 (L1) Ensure 'Audit File Share' is set to 'Success and Failure' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to audit attempts to access a shared folder.

The recommended state for this setting is: Success and Failure.

Note: There are no system access control lists (SACLs) for shared folders. If this policy setting is enabled, access to all shared folders on the system is audited.

Rationale:

In an enterprise managed environment, it's important to track deletion, creation, modification, and access events for network shares. Any unusual file sharing activity may be useful in an investigation of potentially malicious activity.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Success and Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Object Access\Audit File Share

Default Value:

No Auditing.

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

14.6 Protect Information through Access Control Lists

Protect all information stored on systems with file system, network share, claims, application, or database specific access control lists. These controls will enforce the principle that only authorized individuals should have access to the information based on their need to access the information as a part of their responsibilities.

17.6.3 (L1) Ensure 'Audit Other Object Access Events' is set to 'Success and Failure' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to audit events generated by the management of task scheduler jobs or COM+ objects.

For scheduler jobs, the following are audited:

- Job created.
- Job deleted.
- Job enabled.
- Job disabled.
- Job updated.

For COM+ objects, the following are audited:

- Catalog object added.
- Catalog object updated.
- Catalog object deleted.

The recommended state for this setting is: Success and Failure.

Rationale:

The unexpected creation of scheduled tasks and COM+ objects could potentially be an indication of malicious activity. Since these types of actions are generally low volume, it may be useful to capture them in the audit logs for use during an investigation.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Success and Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Object Access\Audit Other Object Access Events

Default Value:

No Auditing.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-90359 and V-90361
Rule ID: SV-101009r1_rule and SV-101011r1_rule
STIG ID: WN16-AU-000285 and WN16-AU-000286
Severity: CAT II

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

17.6.4 (L1) Ensure 'Audit Removable Storage' is set to 'Success and Failure' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to audit user attempts to access file system objects on a removable storage device. A security audit event is generated only for all objects for all types of access requested. If you configure this policy setting, an audit event is generated each time an account accesses a file system object on a removable storage. Success audits record successful attempts and Failure audits record unsuccessful attempts. If you do not configure this policy setting, no audit event is generated when an account accesses a file system object on a removable storage.

The recommended state for this setting is: Success and Failure.

Note: A Windows 8.0, Server 2012 (non-R2) or newer OS is required to access and set this value in Group Policy.

Rationale:

Auditing removable storage may be useful when investigating an incident. For example, if an individual is suspected of copying sensitive information onto a USB drive.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Success and Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Object Access\Audit Removable Storage

Default Value:

No Auditing.

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

8.4 Configure Anti-Malware Scanning of Removable Devices

Configure devices so that they automatically conduct an anti-malware scan of removable media when inserted or connected.

8.5 Configure Devices Not To Auto-run Content

Configure devices to not auto-run content from removable media.

13.8 Manage System's External Removable Media's Read/write Configurations

Configure systems not to write data to external removable media, if there is no business need for supporting such devices.

17.7 Policy Change

This section contains recommendations for configuring the Policy Change audit policy.

17.7.1 (L1) Ensure 'Audit Audit Policy Change' is set to include 'Success' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory reports changes in audit policy including SACL changes. Events for this subcategory include:

- 4715: The audit policy (SACL) on an object was changed.
- 4719: System audit policy was changed.
- 4902: The Per-user audit policy table was created.
- 4904: An attempt was made to register a security event source.
- 4905: An attempt was made to unregister a security event source.
- 4906: The CrashOnAuditFail value has changed.
- 4907: Auditing settings on object were changed.
- 4908: Special Groups Logon table modified.
- 4912: Per User Audit Policy was changed.

The recommended state for this setting is include: Success.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Success:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Policy Change\Audit Audit Policy Change

Default Value:

Success.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73461
Rule ID: SV-88113r1_rule
STIG ID: WN16-AU-000310
Severity: CAT II

Note: The STIG recommendation for the setting "Audit Audit Policy Change" is for "Success and Failure". The CIS recommendation for this setting is for "Success" only. Please see the L3 Domain Controller profile for "Audit Audit Policy Change" for the "Failure" setting.

CIS Controls:

Version 7

5.5 Implement Automated Configuration Monitoring Systems

Utilize a Security Content Automation Protocol (SCAP) compliant configuration monitoring system to verify all security configuration elements, catalog approved exceptions, and alert when unauthorized changes occur.

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

14.9 Enforce Detail Logging for Access or Changes to Sensitive Data

Enforce detailed audit logging for access to sensitive data or changes to sensitive data (utilizing tools such as File Integrity Monitoring or Security Information and Event Monitoring).

17.7.2 (L3) Ensure 'Audit Audit Policy Change' is set to include 'Failure' (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory reports changes in audit policy including SACL changes. Events for this subcategory include:

- 4715: The audit policy (SACL) on an object was changed.
- 4719: System audit policy was changed.
- 4902: The Per-user audit policy table was created.
- 4904: An attempt was made to register a security event source.
- 4905: An attempt was made to unregister a security event source.
- 4906: The CrashOnAuditFail value has changed.
- 4907: Auditing settings on object were changed.
- 4908: Special Groups Logon table modified.
- 4912: Per User Audit Policy was changed.

The recommended state for this setting is include: Failure.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Policy Change\Audit Audit Policy Change

Default Value:

Success.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73463
Rule ID: SV-88115r1_rule
STIG ID: WN16-AU-000320
Severity: CAT II

CIS Controls:

Version 7

5.5 Implement Automated Configuration Monitoring Systems

Utilize a Security Content Automation Protocol (SCAP) compliant configuration monitoring system to verify all security configuration elements, catalog approved exceptions, and alert when unauthorized changes occur.

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

14.9 Enforce Detail Logging for Access or Changes to Sensitive Data

Enforce detailed audit logging for access to sensitive data or changes to sensitive data (utilizing tools such as File Integrity Monitoring or Security Information and Event Monitoring).

17.7.3 (L1) Ensure 'Audit Authentication Policy Change' is set to include 'Success' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory reports changes in authentication policy. Events for this subcategory include:

- 4706: A new trust was created to a domain.
- 4707: A trust to a domain was removed.
- 4713: Kerberos policy was changed.
- 4716: Trusted domain information was modified.
- 4717: System security access was granted to an account.
- 4718: System security access was removed from an account.
- 4739: Domain Policy was changed.
- 4864: A namespace collision was detected.
- 4865: A trusted forest information entry was added.
- 4866: A trusted forest information entry was removed.
- 4867: A trusted forest information entry was modified.

The recommended state for this setting is to include: Success.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Success:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Policy Change\Audit Authentication Policy Change

Default Value:

Success.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73465
Rule ID: SV-88117r1_rule
STIG ID: WN16-AU-000330
Severity: CAT II

CIS Controls:

Version 7

5.5 Implement Automated Configuration Monitoring Systems

Utilize a Security Content Automation Protocol (SCAP) compliant configuration monitoring system to verify all security configuration elements, catalog approved exceptions, and alert when unauthorized changes occur.

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

14.9 Enforce Detail Logging for Access or Changes to Sensitive Data

Enforce detailed audit logging for access to sensitive data or changes to sensitive data (utilizing tools such as File Integrity Monitoring or Security Information and Event Monitoring).

17.7.4 (L1) Ensure 'Audit Authorization Policy Change' is set to include 'Success' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory reports changes in authorization policy. Events for this subcategory include:

- 4704: A user right was assigned.
- 4705: A user right was removed.
- 4706: A new trust was created to a domain.
- 4707: A trust to a domain was removed.
- 4714: Encrypted data recovery policy was changed.

The recommended state for this setting is to include: Success.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Success:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Policy Change\Audit Authorization Policy Change

Default Value:

Success.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73467
Rule ID: SV-88119r1_rule
STIG ID: WN16-AU-000340
Severity: CAT II

CIS Controls:

Version 7

5.5 Implement Automated Configuration Monitoring Systems

Utilize a Security Content Automation Protocol (SCAP) compliant configuration monitoring system to verify all security configuration elements, catalog approved exceptions, and alert when unauthorized changes occur.

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

14.9 Enforce Detail Logging for Access or Changes to Sensitive Data

Enforce detailed audit logging for access to sensitive data or changes to sensitive data (utilizing tools such as File Integrity Monitoring or Security Information and Event Monitoring).

17.7.5 (L1) Ensure 'Audit MPSSVC Rule-Level Policy Change' is set to 'Success and Failure' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory determines whether the operating system generates audit events when changes are made to policy rules for the Microsoft Protection Service (MPSSVC.exe). Events for this subcategory include:

- 4944: The following policy was active when the Windows Firewall started.
- 4945: A rule was listed when the Windows Firewall started.
- 4946: A change has been made to Windows Firewall exception list. A rule was added.
- 4947: A change has been made to Windows Firewall exception list. A rule was modified.
- 4948: A change has been made to Windows Firewall exception list. A rule was deleted.
- 4949: Windows Firewall settings were restored to the default values.
- 4950: A Windows Firewall setting has changed.
- 4951: A rule has been ignored because its major version number was not recognized by Windows Firewall.
- 4952: Parts of a rule have been ignored because its minor version number was not recognized by Windows Firewall. The other parts of the rule will be enforced.
- 4953: A rule has been ignored by Windows Firewall because it could not parse the rule.
- 4954: Windows Firewall Group Policy settings have changed. The new settings have been applied.
- 4956: Windows Firewall has changed the active profile.
- 4957: Windows Firewall did not apply the following rule.
- 4958: Windows Firewall did not apply the following rule because the rule referred to items not configured on this computer.

The recommended state for this setting is : Success and Failure

Rationale:

Changes to firewall rules are important for understanding the security state of the computer and how well it is protected against network attacks.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Success and Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Policy Change\Audit MPSSVC Rule-Level Policy Change

Default Value:

No Auditing.

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

17.7.6 (L1) Ensure 'Audit Other Policy Change Events' is set to include 'Failure' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory contains events about EFS Data Recovery Agent policy changes, changes in Windows Filtering Platform filter, status on Security policy settings updates for local Group Policy settings, Central Access Policy changes, and detailed troubleshooting events for Cryptographic Next Generation (CNG) operations.

- 5063: A cryptographic provider operation was attempted.
- 5064: A cryptographic context operation was attempted.
- 5065: A cryptographic context modification was attempted.
- 5066: A cryptographic function operation was attempted.
- 5067: A cryptographic function modification was attempted.
- 5068: A cryptographic function provider operation was attempted.
- 5069: A cryptographic function property operation was attempted.
- 5070: A cryptographic function property modification was attempted.
- 6145: One or more errors occurred while processing security policy in the group policy objects.

The recommended state for this setting is to include: Failure.

Rationale:

This setting can help detect errors in applied Security settings which came from Group Policy, and failure events related to Cryptographic Next Generation (CNG) functions.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Policy Change\Audit Other Policy Change Events

Default Value:

No Auditing.

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

17.8 Privilege Use

This section contains recommendations for configuring the Privilege Use audit policy.

17.8.1 (L1) Ensure 'Audit Sensitive Privilege Use' is set to 'Success and Failure' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory reports when a user account or service uses a sensitive privilege. A sensitive privilege includes the following user rights:

- Act as part of the operating system
- Back up files and directories
- Create a token object
- Debug programs
- Enable computer and user accounts to be trusted for delegation
- Generate security audits
- Impersonate a client after authentication
- Load and unload device drivers
- Manage auditing and security log
- Modify firmware environment values
- Replace a process-level token
- Restore files and directories
- Take ownership of files or other objects

Auditing this subcategory will create a high volume of events. Events for this subcategory include:

- 4672: Special privileges assigned to new logon.
- 4673: A privileged service was called.
- 4674: An operation was attempted on a privileged object.

The recommended state for this setting is: Success and Failure.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Success and Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\Privilege Use\Audit Sensitive Privilege Use

Default Value:

No Auditing.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73469 and V-73471
Rule ID: SV-88121r1_rule and SV-88123r1_rule
STIG ID: WN16-AU-000350 and WN16-AU-000360
Severity: CAT II

CIS Controls:

Version 7

4.3 Ensure the Use of Dedicated Administrative Accounts

Ensure that all users with administrative account access use a dedicated or secondary account for elevated activities. This account should only be used for administrative activities and not internet browsing, email, or similar activities.

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

17.9 System

This section contains recommendations for configuring the System audit policy.

17.9.1 (L1) Ensure 'Audit IPsec Driver' is set to 'Success and Failure' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory reports on the activities of the Internet Protocol security (IPsec) driver. Events for this subcategory include:

- 4960: IPsec dropped an inbound packet that failed an integrity check. If this problem persists, it could indicate a network issue or that packets are being modified in transit to this computer. Verify that the packets sent from the remote computer are the same as those received by this computer. This error might also indicate interoperability problems with other IPsec implementations.
- 4961: IPsec dropped an inbound packet that failed a replay check. If this problem persists, it could indicate a replay attack against this computer.
- 4962: IPsec dropped an inbound packet that failed a replay check. The inbound packet had too low a sequence number to ensure it was not a replay.
- 4963: IPsec dropped an inbound clear text packet that should have been secured. This is usually due to the remote computer changing its IPsec policy without informing this computer. This could also be a spoofing attack attempt.
- 4965: IPsec received a packet from a remote computer with an incorrect Security Parameter Index (SPI). This is usually caused by malfunctioning hardware that is corrupting packets. If these errors persist, verify that the packets sent from the remote computer are the same as those received by this computer. This error may also indicate interoperability problems with other IPsec implementations. In that case, if connectivity is not impeded, then these events can be ignored.
- 5478: IPsec Services has started successfully.
- 5479: IPsec Services has been shut down successfully. The shutdown of IPsec Services can put the computer at greater risk of network attack or expose the computer to potential security risks.

- 5480: IPsec Services failed to get the complete list of network interfaces on the computer. This poses a potential security risk because some of the network interfaces may not get the protection provided by the applied IPsec filters. Use the IP Security Monitor snap-in to diagnose the problem.
- 5483: IPsec Services failed to initialize RPC server. IPsec Services could not be started.
- 5484: IPsec Services has experienced a critical failure and has been shut down. The shutdown of IPsec Services can put the computer at greater risk of network attack or expose the computer to potential security risks.
- 5485: IPsec Services failed to process some IPsec filters on a plug-and-play event for network interfaces. This poses a potential security risk because some of the network interfaces may not get the protection provided by the applied IPsec filters. Use the IP Security Monitor snap-in to diagnose the problem.

The recommended state for this setting is: Success and Failure.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Success and Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\System\Audit IPsec Driver

Default Value:

No Auditing.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73473 and V-73475
Rule ID: SV-88125r1_rule and SV-88127r1_rule
STIG ID: WN16-AU-000370 and WN16-AU-000380
Severity: CAT II

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

6.4 Ensure adequate storage for logs

Ensure that all systems that store logs have adequate storage space for the logs generated.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

17.9.2 (L1) Ensure 'Audit Other System Events' is set to 'Success and Failure' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory reports on other system events. Events for this subcategory include:

- 5024 : The Windows Firewall Service has started successfully.
- 5025 : The Windows Firewall Service has been stopped.
- 5027 : The Windows Firewall Service was unable to retrieve the security policy from the local storage. The service will continue enforcing the current policy.
- 5028 : The Windows Firewall Service was unable to parse the new security policy. The service will continue with currently enforced policy.
- 5029: The Windows Firewall Service failed to initialize the driver. The service will continue to enforce the current policy.
- 5030: The Windows Firewall Service failed to start.
- 5032: Windows Firewall was unable to notify the user that it blocked an application from accepting incoming connections on the network.
- 5033 : The Windows Firewall Driver has started successfully.
- 5034 : The Windows Firewall Driver has been stopped.
- 5035 : The Windows Firewall Driver failed to start.
- 5037 : The Windows Firewall Driver detected critical runtime error. Terminating.
- 5058: Key file operation.
- 5059: Key migration operation.

The recommended state for this setting is: Success and Failure.

Rationale:

Capturing these audit events may be useful for identifying when the Windows Firewall is not performing as expected.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Success and Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\System\Audit Other System Events

Default Value:

Success and Failure.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73477 and V-73479
Rule ID: SV-88129r3_rule and SV-88131r3_rule
STIG ID: WN16-AU-000390 and WN16-AU-000400
Severity: CAT II

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

6.4 Ensure adequate storage for logs

Ensure that all systems that store logs have adequate storage space for the logs generated.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

9.4 Apply Host-based Firewalls or Port Filtering

Apply host-based firewalls or port filtering tools on end systems, with a default-deny rule that drops all traffic except those services and ports that are explicitly allowed.

17.9.3 (L1) Ensure 'Audit Security State Change' is set to include 'Success' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory reports changes in security state of the system, such as when the security subsystem starts and stops. Events for this subcategory include:

- 4608: Windows is starting up.
- 4609: Windows is shutting down.
- 4616: The system time was changed.
- 4621: Administrator recovered system from CrashOnAuditFail. Users who are not administrators will now be allowed to log on. Some auditable activity might not have been recorded.

The recommended state for this setting is to include: Success.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Success:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\System\Audit Security State Change

Default Value:

Success.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73481
Rule ID: SV-88133r1_rule
STIG ID: WN16-AU-000410
Severity: CAT II

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

6.4 Ensure adequate storage for logs

Ensure that all systems that store logs have adequate storage space for the logs generated.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

17.9.4 (L1) Ensure 'Audit Security System Extension' is set to include 'Success' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This subcategory reports the loading of extension code such as authentication packages by the security subsystem. Events for this subcategory include:

- 4610: An authentication package has been loaded by the Local Security Authority.
- 4611: A trusted logon process has been registered with the Local Security Authority.
- 4614: A notification package has been loaded by the Security Account Manager.
- 4622: A security package has been loaded by the Local Security Authority.
- 4697: A service was installed in the system.

The recommended state for this setting is to include: Success.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to include Success:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\System\Audit Security System Extension

Default Value:

No Auditing.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73483
Rule ID: SV-88135r1_rule
STIG ID: WN16-AU-000420
Severity: CAT II

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

6.4 Ensure adequate storage for logs

Ensure that all systems that store logs have adequate storage space for the logs generated.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

17.9.5 (L1) Ensure 'Audit System Integrity' is set to 'Success and Failure' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Member Server
- Level 3 - STIG Domain Controller

Description:

This subcategory reports on violations of integrity of the security subsystem. Events for this subcategory include:

- 4612 : Internal resources allocated for the queuing of audit messages have been exhausted, leading to the loss of some audits.
- 4615 : Invalid use of LPC port.
- 4618 : A monitored security event pattern has occurred.
- 4816 : RPC detected an integrity violation while decrypting an incoming message.
- 5038 : Code integrity determined that the image hash of a file is not valid. The file could be corrupt due to unauthorized modification or the invalid hash could indicate a potential disk device error.
- 5056: A cryptographic self test was performed.
- 5057: A cryptographic primitive operation failed.
- 5060: Verification operation failed.
- 5061: Cryptographic operation.
- 5062: A kernel-mode cryptographic self test was performed.

The recommended state for this setting is: Success and Failure.

Rationale:

Auditing these events may be useful when investigating a security incident.

Impact:

If no audit settings are configured, or if audit settings are too lax on the computers in your organization, security incidents might not be detected or not enough evidence will be available for network forensic analysis after security incidents occur. However, if audit settings are too severe, critically important entries in the Security log may be obscured by all of the meaningless entries and computer performance and the available amount of data storage may be seriously affected. Companies that operate in certain regulated industries may have legal obligations to log certain events or activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration via GP, set the following UI path to Success and Failure:

Computer Configuration\Policies\Windows Settings\Security Settings\Advanced Audit Policy Configuration\Audit Policies\System\Audit System Integrity

Default Value:

Success and Failure.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73489 and V-73491
Rule ID: SV-88141r1_rule and SV-88143r1_rule
STIG ID: WN16-AU-000440 and WN16-AU-000450
Severity: CAT II

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

6.4 Ensure adequate storage for logs

Ensure that all systems that store logs have adequate storage space for the logs generated.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

18 Administrative Templates (Computer)

This section contains computer-based recommendations from Group Policy Administrative Templates (ADMX).

18.1 Control Panel

This section contains recommendations for Control Panel settings.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.1.1 Personalization

This section contains recommendations for Control Panel personalization settings.

This Group Policy section is provided by the Group Policy template `ControlPanelDisplay.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.1.1.1 (L1) Ensure 'Prevent enabling lock screen camera' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Disables the lock screen camera toggle switch in PC Settings and prevents a camera from being invoked on the lock screen.

The recommended state for this setting is: Enabled.

Rationale:

Disabling the lock screen camera extends the protection afforded by the lock screen to camera features.

Impact:

If you enable this setting, users will no longer be able to enable or disable lock screen camera access in PC Settings, and the camera cannot be invoked on the lock screen.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\Personalization>NoLockScreenCamera

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Control Panel\Personalization\Prevent enabling lock screen camera

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template ControlPanelDisplay.admx/adml that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

Default Value:

Disabled. (Users can enable invocation of an available camera on the lock screen.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

18.1.1.2 (L1) Ensure 'Prevent enabling lock screen slide show' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Disables the lock screen slide show settings in PC Settings and prevents a slide show from playing on the lock screen.

The recommended state for this setting is: Enabled.

Rationale:

Disabling the lock screen slide show extends the protection afforded by the lock screen to slide show contents.

Impact:

If you enable this setting, users will no longer be able to modify slide show settings in PC Settings, and no slide show will ever start.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\Personalization>NoLock
ScreenSlideshow

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Control Panel\Personalization\Prevent enabling lock screen slide show

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template ControlPanelDisplay.admx/adml that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

Default Value:

Disabled. (Users can enable a slide show that will run after they lock the machine.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73493
Rule ID: SV-88145r1_rule
STIG ID: WN16-CC-000010
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

18.1.2 Regional and Language Options

This section contains recommendation settings for Regional and Language Options.

This Group Policy section is provided by the Group Policy template `Globalization.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.1.2.1 Handwriting personalization

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Globalization.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.1.2.2 (L1) Ensure 'Allow users to enable online speech recognition services' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy enables the automatic learning component of input personalization that includes speech, inking, and typing. Automatic learning enables the collection of speech and handwriting patterns, typing history, contacts, and recent calendar information. It is required for the use of Cortana. Some of this collected information may be stored on the user's OneDrive, in the case of inking and typing; some of the information will be uploaded to Microsoft to personalize speech.

The recommended state for this setting is: `Disabled`.

Rationale:

If this setting is Enabled sensitive information could be stored in the cloud or sent to Microsoft.

Impact:

Automatic learning of speech, inking, and typing stops and users cannot change its value via PC Settings.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\InputPersonalization:AllowInputPersonalization

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Control Panel\Regional and Language Options\Allow users to enable online speech recognition services

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template Globalization.admx/adml that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

Note #2: In older Microsoft Windows Administrative Templates, this setting was initially named *Allow input personalization*, but it was renamed to *Allow users to enable online speech recognition services* starting with the Windows 10 R1809 & Server 2019 Administrative Templates.

Default Value:

Enabled. (Automatic learning of speech, inking and typing is enabled, but users may change this value via PC Settings.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

18.1.3 (L2) Ensure 'Allow Online Tips' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting configures the retrieval of online tips and help for the Settings app.

The recommended state for this setting is: `Disabled`.

Rationale:

Due to privacy concerns, data should never be sent to any 3rd party since this data could contain sensitive information.

Impact:

Settings will not contact Microsoft content services to retrieve tips and help content.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\Explore  
r:AllowOnlineTips
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to `Disabled`:

```
Computer Configuration\Policies\Administrative Templates\Control Panel\Allow  
Online Tips
```

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `ControlPanel.admx/adml` that is included with the Microsoft Windows 10 Release 1709 Administrative Templates (or newer).

Default Value:

Enabled. (Settings will contact Microsoft content services to retrieve tips and help content.)

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.2 LAPS

This section contains recommendations for configuring Microsoft Local Administrator Password Solution (LAPS).

This Group Policy section is provided by the Group Policy template `AdmPwd.admx/adml` that is included with LAPS.

18.2.1 (L1) Ensure LAPS AdmPwd GPO Extension / CSE is installed (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

In May 2015, Microsoft released the Local Administrator Password Solution (LAPS) tool, which is free and supported software that allows an organization to automatically set randomized and unique local Administrator account passwords on domain-attached workstations and Member Servers. The passwords are stored in a confidential attribute of the domain computer account and can be retrieved from Active Directory by approved Sysadmins when needed.

The LAPS tool requires a small Active Directory Schema update in order to implement, as well as installation of a Group Policy Client Side Extension (CSE) on targeted computers. Please see the LAPS documentation for details.

LAPS supports Windows Vista or newer workstation OSes, and Server 2003 or newer server OSes. LAPS does not support standalone computers - they must be joined to a domain.

Note: Organizations that utilize 3rd-party commercial software to manage unique & complex local Administrator passwords on domain members may opt to disregard these LAPS recommendations.

Note #2: LAPS is only designed to manage *local* Administrator passwords, and is therefore not recommended (or supported) for use directly on Domain Controllers, which do not have a traditional local Administrator account. We strongly encourage you to only deploy the LAPS CSE and LAPS GPO settings to member servers and workstations.

Rationale:

Due to the difficulty in managing local Administrator passwords, many organizations choose to use the same password on all workstations and/or Member Servers when deploying them. This creates a serious attack surface security risk because if an attacker manages to compromise one system and learn the password to its local Administrator account, then they can leverage that account to instantly gain access to all other computers that also use that password for their local Administrator account.

Impact:

No impact. When installed and registered properly, `AdmPwd.dll` takes no action unless given appropriate GPO commands during Group Policy refresh. It is not a memory-resident agent or service.

In a disaster recovery scenario where Active Directory is not available, the local Administrator password will not be retrievable and a local password reset using a tool (such as Microsoft's Disaster and Recovery Toolset (DaRT) Recovery Image) may be necessary.

Audit:

The LAPS AdmPwd GPO Extension / CSE can be verified to be installed by the presence of the following registry value:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows  
NT\CurrentVersion\Winlogon\GPExtensions\{D76B9641-3288-4f75-942D-  
087DE603E3EA}:DllName
```

Remediation:

In order to utilize LAPS, a minor Active Directory Schema update is required, and a Group Policy Client Side Extension (CSE) must be installed on each managed computer. When LAPS is installed, the file `AdmPwd.dll` must be present in the following location and registered in Windows (the LAPS AdmPwd GPO Extension / CSE installation does this for you):

```
C:\Program Files\LAPS\CSE\AdmPwd.dll
```

Default Value:

Not Installed.

CIS Controls:

Version 7

4.4 Use Unique Passwords

Where multi-factor authentication is not supported (such as local administrator, root, or service accounts), accounts will use passwords that are unique to that system.

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

18.2.2 (L1) Ensure 'Do not allow password expiration time longer than required by policy' is set to 'Enabled' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

In May 2015, Microsoft released the Local Administrator Password Solution (LAPS) tool, which is free and supported software that allows an organization to automatically set randomized and unique local Administrator account passwords on domain-attached workstations and Member Servers. The passwords are stored in a confidential attribute of the domain computer account and can be retrieved from Active Directory by approved Sysadmins when needed.

The LAPS tool requires a small Active Directory Schema update in order to implement, as well as installation of a Group Policy Client Side Extension (CSE) on targeted computers. Please see the LAPS documentation for details.

LAPS supports Windows Vista or newer workstation OSes, and Server 2003 or newer server OSes. LAPS does not support standalone computers - they must be joined to a domain.

The recommended state for this setting is: Enabled.

Note: Organizations that utilize 3rd-party commercial software to manage unique & complex local Administrator passwords on domain members may opt to disregard these LAPS recommendations.

Note #2: LAPS is only designed to manage *local* Administrator passwords, and is therefore not recommended (or supported) for use directly on Domain Controllers, which do not have a traditional local Administrator account. We strongly encourage you to only deploy the LAPS CSE and LAPS GPO settings to member servers and workstations.

Note #2: LAPS is only designed to manage *local* Administrator passwords, and is therefore not recommended (or supported) for use directly on Domain Controllers, which do not have a traditional local Administrator account. We strongly encourage you to only deploy the LAPS CSE and LAPS GPO settings to member servers and workstations.

Rationale:

Due to the difficulty in managing local Administrator passwords, many organizations choose to use the same password on all workstations and/or Member Servers when deploying them. This creates a serious attack surface security risk because if an attacker manages to compromise one system and learn the password to its local Administrator account, then they can leverage that account to instantly gain access to all other computers that also use that password for their local Administrator account.

Impact:

Planned password expiration longer than password age dictated by "Password Settings" policy is NOT allowed.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft  
Services\AdmPwd:PwdExpirationProtectionEnabled
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

```
Computer Configuration\Policies\Administrative Templates\LAPS\Do not allow  
password expiration time longer than required by policy
```

Note: This Group Policy path does not exist by default. An additional Group Policy template (`AdmPwd.admx/adml`) is required - it is included with Microsoft Local Administrator Password Solution (LAPS).

Default Value:

Disabled. (Password expiration time may be longer than required by the "Password Settings" policy.)

CIS Controls:

Version 7

16.10 Ensure All Accounts Have An Expiration Date

Ensure that all accounts have an expiration date that is monitored and enforced.

18.2.3 (L1) Ensure 'Enable Local Admin Password Management' is set to 'Enabled' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

In May 2015, Microsoft released the Local Administrator Password Solution (LAPS) tool, which is free and supported software that allows an organization to automatically set randomized and unique local Administrator account passwords on domain-attached workstations and Member Servers. The passwords are stored in a confidential attribute of the domain computer account and can be retrieved from Active Directory by approved Sysadmins when needed.

The LAPS tool requires a small Active Directory Schema update in order to implement, as well as installation of a Group Policy Client Side Extension (CSE) on targeted computers. Please see the LAPS documentation for details.

LAPS supports Windows Vista or newer workstation OSes, and Server 2003 or newer server OSes. LAPS does not support standalone computers - they must be joined to a domain.

The recommended state for this setting is: Enabled.

Note: Organizations that utilize 3rd-party commercial software to manage unique & complex local Administrator passwords on domain members may opt to disregard these LAPS recommendations.

Note #2: LAPS is only designed to manage *local* Administrator passwords, and is therefore not recommended (or supported) for use directly on Domain Controllers, which do not have a traditional local Administrator account. We strongly encourage you to only deploy the LAPS CSE and LAPS GPO settings to member servers and workstations.

Rationale:

Due to the difficulty in managing local Administrator passwords, many organizations choose to use the same password on all workstations and/or Member Servers when deploying them. This creates a serious attack surface security risk because if an attacker manages to compromise one system and learn the password to its local Administrator account, then they can leverage that account to instantly gain access to all other computers that also use that password for their local Administrator account.

Impact:

The local administrator password is managed (provided that the LAPS AdmPwd GPO Extension / CSE is installed on the target computer (see Rule 18.2.1), the Active Directory domain schema and account permissions have been properly configured on the domain).

In a disaster recovery scenario where Active Directory is not available, the local Administrator password will not be retrievable and a local password reset using a tool (such as Microsoft's Disaster and Recovery Toolset (DaRT) Recovery Image) may be necessary.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft Services\AdmPwd:AdmPwdEnabled

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\LAPS\Enable Local Admin Password Management

Note: This Group Policy path does not exist by default. An additional Group Policy template (AdmPwd.admx/adml) is required - it is included with Microsoft Local Administrator Password Solution (LAPS).

Default Value:

Disabled. (Local Administrator password is NOT managed.)

CIS Controls:

Version 7

4.4 Use Unique Passwords

Where multi-factor authentication is not supported (such as local administrator, root, or service accounts), accounts will use passwords that are unique to that system.

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

18.2.4 (L1) Ensure 'Password Settings: Password Complexity' is set to 'Enabled: Large letters + small letters + numbers + special characters' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

In May 2015, Microsoft released the Local Administrator Password Solution (LAPS) tool, which is free and supported software that allows an organization to automatically set randomized and unique local Administrator account passwords on domain-attached workstations and Member Servers. The passwords are stored in a confidential attribute of the domain computer account and can be retrieved from Active Directory by approved Sysadmins when needed.

The LAPS tool requires a small Active Directory Schema update in order to implement, as well as installation of a Group Policy Client Side Extension (CSE) on targeted computers. Please see the LAPS documentation for details.

LAPS supports Windows Vista or newer workstation OSes, and Server 2003 or newer server OSes. LAPS does not support standalone computers - they must be joined to a domain.

The recommended state for this setting is: Enabled: Large letters + small letters + numbers + special characters.

Note: Organizations that utilize 3rd-party commercial software to manage unique & complex local Administrator passwords on domain members may opt to disregard these LAPS recommendations.

Note #2: LAPS is only designed to manage *local* Administrator passwords, and is therefore not recommended (or supported) for use directly on Domain Controllers, which do not have a traditional local Administrator account. We strongly encourage you to only deploy the LAPS CSE and LAPS GPO settings to member servers and workstations.

Rationale:

Due to the difficulty in managing local Administrator passwords, many organizations choose to use the same password on all workstations and/or Member Servers when deploying them. This creates a serious attack surface security risk because if an attacker manages to compromise one system and learn the password to its local Administrator account, then they can leverage that account to instantly gain access to all other computers that also use that password for their local Administrator account.

Impact:

LAPS-generated passwords will be required to contain large letters + small letters + numbers + special characters.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft  
Services\AdmPwd:PasswordComplexity
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled, and configure the Password Complexity option to Large letters + small letters + numbers + special characters:

```
Computer Configuration\Policies\Administrative Templates\LAPS\Password  
Settings
```

Note: This Group Policy path does not exist by default. An additional Group Policy template (AdmPwd.admx/adml) is required - it is included with Microsoft Local Administrator Password Solution (LAPS).

Default Value:

Large letters + small letters + numbers + special characters.

CIS Controls:

Version 7

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

18.2.5 (L1) Ensure 'Password Settings: Password Length' is set to 'Enabled: 15 or more' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

In May 2015, Microsoft released the Local Administrator Password Solution (LAPS) tool, which is free and supported software that allows an organization to automatically set randomized and unique local Administrator account passwords on domain-attached workstations and Member Servers. The passwords are stored in a confidential attribute of the domain computer account and can be retrieved from Active Directory by approved Sysadmins when needed.

The LAPS tool requires a small Active Directory Schema update in order to implement, as well as installation of a Group Policy Client Side Extension (CSE) on targeted computers. Please see the LAPS documentation for details.

LAPS supports Windows Vista or newer workstation OSes, and Server 2003 or newer server OSes. LAPS does not support standalone computers - they must be joined to a domain.

The recommended state for this setting is: Enabled: 15 or more.

Note: Organizations that utilize 3rd-party commercial software to manage unique & complex local Administrator passwords on domain members may opt to disregard these LAPS recommendations.

Note #2: LAPS is only designed to manage *local* Administrator passwords, and is therefore not recommended (or supported) for use directly on Domain Controllers, which do not have a traditional local Administrator account. We strongly encourage you to only deploy the LAPS CSE and LAPS GPO settings to member servers and workstations.

Rationale:

Due to the difficulty in managing local Administrator passwords, many organizations choose to use the same password on all workstations and/or Member Servers when deploying them. This creates a serious attack surface security risk because if an attacker manages to compromise one system and learn the password to its local Administrator account, then they can leverage that account to instantly gain access to all other computers that also use that password for their local Administrator account.

Impact:

LAPS-generated passwords will be required to have a length of 15 characters (or more, if selected).

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft Services\AdmPwd>PasswordLength

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled, and configure the Password Length option to 15 or more:

Computer Configuration\Policies\Administrative Templates\LAPS\Password Settings

Note: This Group Policy path does not exist by default. An additional Group Policy template (AdmPwd.admx/adml) is required - it is included with Microsoft Local Administrator Password Solution (LAPS).

Default Value:

14 characters.

CIS Controls:

Version 7

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

18.2.6 (L1) Ensure 'Password Settings: Password Age (Days)' is set to 'Enabled: 30 or fewer' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

In May 2015, Microsoft released the Local Administrator Password Solution (LAPS) tool, which is free and supported software that allows an organization to automatically set randomized and unique local Administrator account passwords on domain-attached workstations and Member Servers. The passwords are stored in a confidential attribute of the domain computer account and can be retrieved from Active Directory by approved Sysadmins when needed.

The LAPS tool requires a small Active Directory Schema update in order to implement, as well as installation of a Group Policy Client Side Extension (CSE) on targeted computers. Please see the LAPS documentation for details.

LAPS supports Windows Vista or newer workstation OSes, and Server 2003 or newer server OSes. LAPS does not support standalone computers - they must be joined to a domain.

The recommended state for this setting is: Enabled: 30 or fewer.

Note: Organizations that utilize 3rd-party commercial software to manage unique & complex local Administrator passwords on domain members may opt to disregard these LAPS recommendations.

Note #2: LAPS is only designed to manage *local* Administrator passwords, and is therefore not recommended (or supported) for use directly on Domain Controllers, which do not have a traditional local Administrator account. We strongly encourage you to only deploy the LAPS CSE and LAPS GPO settings to member servers and workstations.

Rationale:

Due to the difficulty in managing local Administrator passwords, many organizations choose to use the same password on all workstations and/or Member Servers when deploying them. This creates a serious attack surface security risk because if an attacker manages to compromise one system and learn the password to its local Administrator account, then they can leverage that account to instantly gain access to all other computers that also use that password for their local Administrator account.

Impact:

LAPS-generated passwords will be required to have a maximum age of 30 days (or fewer, if selected).

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft  
Services\AdmPwd>PasswordAgeDays
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled, and configure the Password Age (Days) option to 30 or fewer:

```
Computer Configuration\Policies\Administrative Templates\LAPS\Password  
Settings
```

Note: This Group Policy path does not exist by default. An additional Group Policy template (AdmPwd.admx/adml) is required - it is included with Microsoft Local Administrator Password Solution (LAPS).

Default Value:

30 days.

CIS Controls:

Version 7

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

18.3 MS Security Guide

This section contains settings for configuring additional settings from the MS Security Guide.

This Group Policy section is provided by the Group Policy template `SecGuide.admx/adml` that is available from Microsoft at [this link](#).

18.3.1 (L1) Ensure 'Apply UAC restrictions to local accounts on network logons' is set to 'Enabled' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting controls whether local accounts can be used for remote administration via network logon (e.g., NET USE, connecting to C\$, etc.). Local accounts are at high risk for credential theft when the same account and password is configured on multiple systems. Enabling this policy significantly reduces that risk.

Enabled: Applies UAC token-filtering to local accounts on network logons. Membership in powerful group such as Administrators is disabled and powerful privileges are removed from the resulting access token. This configures the `LocalAccountTokenFilterPolicy` registry value to 0. This is the default behavior for Windows.

Disabled: Allows local accounts to have full administrative rights when authenticating via network logon, by configuring the `LocalAccountTokenFilterPolicy` registry value to 1.

For more information about local accounts and credential theft, review the "[Mitigating Pass-the-Hash \(PtH\) Attacks and Other Credential Theft Techniques](#)" documents.

For more information about `LocalAccountTokenFilterPolicy`, see Microsoft Knowledge Base article 951016: [Description of User Account Control and remote restrictions in Windows Vista](#).

The recommended state for this setting is: Enabled.

Rationale:

Local accounts are at high risk for credential theft when the same account and password is configured on multiple systems. Ensuring this policy is Enabled significantly reduces that risk.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System:
LocalAccountTokenFilterPolicy

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\MS Security Guide\Apply UAC restrictions to local accounts on network logons

Note: This Group Policy path does not exist by default. An additional Group Policy template (SecGuide.admx/adml) is required - it is available from Microsoft at [this link](#).

Default Value:

Enabled. (UAC token-filtering is applied to local accounts on network logons. Membership in powerful groups such as Administrators and disabled and powerful privileges are removed from the resulting access token.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73495
Rule ID: SV-88147r1_rule
STIG ID: WN16-MS-000020
Severity: CAT II

CIS Controls:

Version 7

4.3 Ensure the Use of Dedicated Administrative Accounts

Ensure that all users with administrative account access use a dedicated or secondary account for elevated activities. This account should only be used for administrative activities and not internet browsing, email, or similar activities.

18.3.2 (L1) Ensure 'Configure SMB v1 client driver' is set to 'Enabled: Disable driver (recommended)' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting configures the start type for the Server Message Block version 1 (SMBv1) client driver service (`MRxSmb10`), which is recommended to be disabled.

The recommended state for this setting is: Enabled: Disable driver (recommended).

Note: Do not, *under any circumstances*, configure this overall setting as Disabled, as doing so will delete the underlying registry entry altogether, which will cause serious problems.

Rationale:

Since September 2016, Microsoft has strongly encouraged that SMBv1 be disabled and no longer used on modern networks, as it is a 30 year old design that is much more vulnerable to attacks than much newer designs such as SMBv2 and SMBv3.

More information on this can be found at the following links:

[Stop using SMB1 | Storage at Microsoft](#)

[Disable SMB v1 in Managed Environments with Group Policy – "Stay Safe" Cyber Security Blog](#)

[Disabling SMBv1 through Group Policy – Microsoft Security Guidance blog](#)

Impact:

Some legacy OSes (e.g. Windows XP, Server 2003 or older), applications and appliances may no longer be able to communicate with the system once SMBv1 is disabled. We recommend careful testing be performed to determine the impact prior to configuring this as a widespread control, and where possible, remediate any incompatibilities found with the vendor of the incompatible system. Microsoft is also maintaining a thorough (although not comprehensive) list of known SMBv1 incompatibilities at this link: [SMB1 Product Clearinghouse | Storage at Microsoft](#)

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\mrxsmb10:Start

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled: Disable driver (recommended):

Computer Configuration\Policies\Administrative Templates\MS Security Guide\Configure SMB v1 client driver

Note: This Group Policy path does not exist by default. An additional Group Policy template (SecGuide.admx/adml) is required - it is available from Microsoft at [this link](#).

Default Value:

Windows Server 2008 (non-R2), 2008 R2, and 2012 (non-R2): Enabled: Manual start.

Windows Server 2012 R2 and Server 2016 (up to R1607): Enabled: Automatic start.

Windows Server 2016 R1709 and newer: Enabled: Disable driver.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-78125
Rule ID: SV-92831r1_rule
STIG ID: WN16-00-000412
Severity: CAT II

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.3.3 (L1) Ensure 'Configure SMB v1 server' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting configures the server-side processing of the Server Message Block version 1 (SMBv1) protocol.

The recommended state for this setting is: `Disabled`.

Rationale:

Since September 2016, Microsoft has strongly encouraged that SMBv1 be disabled and no longer used on modern networks, as it is a 30 year old design that is much more vulnerable to attacks than much newer designs such as SMBv2 and SMBv3.

More information on this can be found at the following links:

[Stop using SMB1 | Storage at Microsoft](#)

[Disable SMB v1 in Managed Environments with Group Policy – "Stay Safe" Cyber Security Blog](#)

[Disabling SMBv1 through Group Policy – Microsoft Security Guidance blog](#)

Impact:

Some legacy OSes (e.g. Windows XP, Server 2003 or older), applications and appliances may no longer be able to communicate with the system once SMBv1 is disabled. We recommend careful testing be performed to determine the impact prior to configuring this as a widespread control, and where possible, remediate any incompatibilities found with the vendor of the incompatible system. Microsoft is also maintaining a thorough (although not comprehensive) list of known SMBv1 incompatibilities at this link: [SMB1 Product Clearinghouse | Storage at Microsoft](#)

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanServer\Parameters:
SMB1

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\MS Security Guide\Configure SMB v1 server

Note: This Group Policy path does not exist by default. An additional Group Policy template (SecGuide.admx/adml) is required - it is available from Microsoft at [this link](#).

Default Value:

Windows Server 2016 R1607 and older: Enabled.

Windows Server 2016 R1709 and newer: Disabled.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-78123
Rule ID: SV-92829r1_rule
STIG ID: WN16-00-000411
Severity: CAT II

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.3.4 (L1) Ensure 'Enable Structured Exception Handling Overwrite Protection (SEHOP)' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Windows includes support for Structured Exception Handling Overwrite Protection (SEHOP). We recommend enabling this feature to improve the security profile of the computer.

The recommended state for this setting is: Enabled.

Rationale:

This feature is designed to block exploits that use the Structured Exception Handler (SEH) overwrite technique. This protection mechanism is provided at run-time. Therefore, it helps protect applications regardless of whether they have been compiled with the latest improvements, such as the /SAFESEH option.

Impact:

After you enable SEHOP, existing versions of Cygwin, Skype, and Armadillo-protected applications may not work correctly.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\kernel:DisableExceptionChainValidation
--

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\MS Security Guide\Enable Structured Exception Handling Overwrite Protection (SEHOP)

Note: This Group Policy path does not exist by default. An additional Group Policy template (SecGuide.admx/adml) is required - it is available from Microsoft at [this link](#).

More information is available at [MSKB 956607: How to enable Structured Exception Handling Overwrite Protection \(SEHOP\) in Windows operating systems](#)

Default Value:

Disabled for 32-bit processes.

CIS Controls:

Version 7

8.3 Enable Operating System Anti-Exploitation Features/ Deploy Anti-Exploit Technologies

Enable anti-exploitation features such as Data Execution Prevention (DEP) or Address Space Layout Randomization (ASLR) that are available in an operating system or deploy appropriate toolkits that can be configured to apply protection to a broader set of applications and executables.

18.3.5 (L1) Ensure 'NetBT NodeType configuration' is set to 'Enabled: P-node (recommended)' (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting determines which method NetBIOS over TCP/IP (NetBT) uses to register and resolve names. The available methods are:

- The B-node (broadcast) method only uses broadcasts.
- The P-node (point-to-point) method only uses name queries to a name server (WINS).
- The M-node (mixed) method broadcasts first, then queries a name server (WINS) if broadcast failed.
- The H-node (hybrid) method queries a name server (WINS) first, then broadcasts if the query failed.

The recommended state for this setting is: Enabled: P-node (recommended) (point-to-point).

Note: Resolution through LMHOSTS or DNS follows these methods. If the `NodeType` registry value is present, it overrides any `DhcpNodeType` registry value. If neither `NodeType` nor `DhcpNodeType` is present, the computer uses B-node (broadcast) if there are no WINS servers configured for the network, or H-node (hybrid) if there is at least one WINS server configured.

Rationale:

In order to help mitigate the risk of NetBIOS Name Service (NBT-NS) poisoning attacks, setting the node type to P-node (point-to-point) will prevent the system from sending out NetBIOS broadcasts.

Impact:

NetBIOS name resolution queries will require a defined and available WINS server for external NetBIOS name resolution. If a WINS server is not defined or not reachable, and the desired hostname is not defined in the local cache, local LMHOSTS or HOSTS files, NetBIOS name resolution will fail.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\NetBT\Parameters:NodeType

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:
P-node (recommended):

Computer Configuration\Policies\Administrative Templates\MS Security Guide\NetBT NodeType configuration

Note: This change does not take effect until the computer has been restarted.

Note #2: This Group Policy path does not exist by default. An additional Group Policy template (SecGuide.admx/adml) is required - it is available from Microsoft at [this link](#).

Please note that this setting is **only** available in the *Security baseline (FINAL) for Windows 10 v1903 and Windows Server v1903* (or newer) release of SecGuide.admx/adml, so if you previously downloaded this template, you may need to update it from a newer Microsoft baseline to get this new *NetBT NodeType configuration* setting.

Default Value:

B-node (broadcast only) if a WINS server is not configured in NIC properties.

H-node (hybrid - point-to-point first, then broadcast) if a WINS server is configured in NIC properties.

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.3.6 (L1) Ensure 'WDigest Authentication' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

When WDigest authentication is enabled, Lsass.exe retains a copy of the user's plaintext password in memory, where it can be at risk of theft. If this setting is not configured, WDigest authentication is disabled in Windows 8.1 and in Windows Server 2012 R2; it is enabled by default in earlier versions of Windows and Windows Server.

For more information about local accounts and credential theft, review the "[Mitigating Pass-the-Hash \(PtH\) Attacks and Other Credential Theft Techniques](#)" documents.

For more information about UseLogonCredential, see Microsoft Knowledge Base article 2871997: [Microsoft Security Advisory Update to improve credentials protection and management May 13, 2014](#).

The recommended state for this setting is: Disabled.

Rationale:

Preventing the plaintext storage of credentials in memory may reduce opportunity for credential theft.

Impact:

None - this is also the default configuration for Server 2012 R2 and newer.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\SecurityProviders\WDigest :UseLogonCredential
--

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\MS Security Guide\WDigest Authentication (disabling may require KB2871997)

Note: This Group Policy path does not exist by default. An additional Group Policy template (SecGuide.admx/adml) is required - it is available from Microsoft at [this link](#).

Default Value:

On Server 2012 (non-R2) and older: Enabled. (Lsass.exe retains a copy of the user's plaintext password in memory, where it is at risk of theft.)

On Server 2012 R2 and newer: Disabled. (Lsass.exe does not retain a copy of the user's plaintext password in memory.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73497
Rule ID: SV-88149r2_rule
STIG ID: WN16-CC-000030
Severity: CAT II

CIS Controls:

Version 7

16.4 Encrypt or Hash all Authentication Credentials

Encrypt or hash with a salt all authentication credentials when stored.

18.4 MSS (Legacy)

This section contains recommendations for the Microsoft Solutions for Security (MSS) settings.

This Group Policy section is provided by the Group Policy template `MSS-legacy.admx/adml` that is available from this TechNet blog post: [The MSS settings – Microsoft Security Guidance blog](#)

18.4.1 (L1) Ensure 'MSS: (AutoAdminLogon) Enable Automatic Logon (not recommended)' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting is separate from the Welcome screen feature in Windows XP and Windows Vista; if that feature is disabled, this setting is not disabled. If you configure a computer for automatic logon, anyone who can physically gain access to the computer can also gain access to everything that is on the computer, including any network or networks to which the computer is connected. Also, if you enable automatic logon, the password is stored in the registry in plaintext, and the specific registry key that stores this value is remotely readable by the Authenticated Users group.

For additional information, see Microsoft Knowledge Base article 324737: [How to turn on automatic logon in Windows](#).

The recommended state for this setting is: `Disabled`.

Rationale:

If you configure a computer for automatic logon, anyone who can physically gain access to the computer can also gain access to everything that is on the computer, including any network or networks that the computer is connected to. Also, if you enable automatic logon, the password is stored in the registry in plaintext. The specific registry key that stores this setting is remotely readable by the Authenticated Users group. As a result, this entry is appropriate only if the computer is physically secured and if you ensure that untrusted users cannot remotely see the registry.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows  
NT\CurrentVersion\Winlogon:AutoAdminLogon
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

```
Computer Configuration\Policies\Administrative Templates\MSS (Legacy)\MSS:  
(AutoAdminLogon) Enable Automatic Logon (not recommended)
```

Note: This Group Policy path does not exist by default. An additional Group Policy template (`MSS-legacy.admx/adml`) is required - it is available from this TechNet blog post: [The MSS settings – Microsoft Security Guidance blog](#)

Default Value:

Disabled.

CIS Controls:

Version 7

4.3 Ensure the Use of Dedicated Administrative Accounts

Ensure that all users with administrative account access use a dedicated or secondary account for elevated activities. This account should only be used for administrative activities and not internet browsing, email, or similar activities.

18.4.2 (L1) Ensure 'MSS: (DisableIPSourceRouting IPv6) IP source routing protection level (protects against packet spoofing)' is set to 'Enabled: Highest protection, source routing is completely disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

IP source routing is a mechanism that allows the sender to determine the IP route that a datagram should follow through the network.

The recommended state for this setting is: Enabled: Highest protection, source routing is completely disabled.

Rationale:

An attacker could use source routed packets to obscure their identity and location. Source routing allows a computer that sends a packet to specify the route that the packet takes.

Impact:

All incoming source routed packets will be dropped.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip6\Parameters:DisableIPSourceRouting
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:
Highest protection, source routing is completely disabled:

Computer Configuration\Policies\Administrative Templates\MSS (Legacy)\MSS: (DisableIPSourceRouting IPv6) IP source routing protection level (protects against packet spoofing)

Note: This Group Policy path does not exist by default. An additional Group Policy template (`MSS-legacy.admx/adml`) is required - it is available from this TechNet blog post: [The MSS settings – Microsoft Security Guidance blog](#)

Default Value:

No additional protection, source routed packets are allowed.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73499
Rule ID: SV-88151r1_rule
STIG ID: WN16-CC-000040
Severity: CAT III

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.4.3 (L1) Ensure 'MSS: (DisableIPSourceRouting) IP source routing protection level (protects against packet spoofing)' is set to 'Enabled: Highest protection, source routing is completely disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

IP source routing is a mechanism that allows the sender to determine the IP route that a datagram should take through the network. It is recommended to configure this setting to Not Defined for enterprise environments and to Highest Protection for high security environments to completely disable source routing.

The recommended state for this setting is: Enabled: Highest protection, source routing is completely disabled.

Rationale:

An attacker could use source routed packets to obscure their identity and location. Source routing allows a computer that sends a packet to specify the route that the packet takes.

Impact:

All incoming source routed packets will be dropped.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters:DisableIPSourceRouting

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:
Highest protection, source routing is completely disabled:

```
Computer Configuration\Policies\Administrative Templates\MSS (Legacy)\MSS:  
(DisableIPSourceRouting) IP source routing protection level (protects against  
packet spoofing)
```

Note: This Group Policy path does not exist by default. An additional Group Policy template (`MSS-legacy.admx/adml`) is required - it is available from this TechNet blog post: [The MSS settings – Microsoft Security Guidance blog](#)

Default Value:

Medium, source routed packets ignored when IP forwarding is enabled.

Additional Information:

This Benchmark Recommendation maps to:

```
Microsoft Windows Server 2016 Security Technical Implementation Guide:  
Version 1, Release 13, Benchmark Date: May 15, 2020
```

```
Vul ID: V-73501  
Rule ID: SV-88153r1_rule  
STIG ID: WN16-CC-000050  
Severity: CAT III
```

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.4.4 (L1) Ensure 'MSS: (EnableICMPRedirect) Allow ICMP redirects to override OSPF generated routes' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Internet Control Message Protocol (ICMP) redirects cause the IPv4 stack to plumb host routes. These routes override the Open Shortest Path First (OSPF) generated routes.

The recommended state for this setting is: Disabled.

Rationale:

This behavior is expected. The problem is that the 10 minute time-out period for the ICMP redirect-plumbed routes temporarily creates a network situation in which traffic will no longer be routed properly for the affected host. Ignoring such ICMP redirects will limit the system's exposure to attacks that will impact its ability to participate on the network.

Impact:

When Routing and Remote Access Service (RRAS) is configured as an autonomous system boundary router (ASBR), it does not correctly import connected interface subnet routes. Instead, this router injects host routes into the OSPF routes. However, the OSPF router cannot be used as an ASBR router, and when connected interface subnet routes are imported into OSPF the result is confusing routing tables with strange routing paths.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed for your organization. This group policy object is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters:EnableICMPRedirect

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\MSS (Legacy)\MSS:
(EnableICMPRedirect) Allow ICMP redirects to override OSPF generated routes

Note: This Group Policy path does not exist by default. An additional Group Policy template (`MSS-legacy.admx/adml`) is required - it is available from this TechNet blog post: [The MSS settings – Microsoft Security Guidance blog](#)

Default Value:

Enabled. (ICMP redirects can override OSPF-generated routes.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73503
Rule ID: SV-88155r1_rule
STIG ID: WN16-CC-000060
Severity: CAT III

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.4.5 (L2) Ensure 'MSS: (KeepAliveTime) How often keep-alive packets are sent in milliseconds' is set to 'Enabled: 300,000 or 5 minutes (recommended)' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This value controls how often TCP attempts to verify that an idle connection is still intact by sending a keep-alive packet. If the remote computer is still reachable, it acknowledges the keep-alive packet.

The recommended state for this setting is: Enabled: 300,000 or 5 minutes (recommended).

Rationale:

An attacker who is able to connect to network applications could establish numerous connections to cause a DoS condition.

Impact:

Keep-alive packets are not sent by default by Windows. However, some applications may configure the TCP stack flag that requests keep-alive packets. For such configurations, you can lower this value from the default setting of two hours to five minutes to disconnect inactive sessions more quickly.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters:KeepAliveTime

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:
300,000 or 5 minutes (recommended):

Computer Configuration\Policies\Administrative Templates\MSS (Legacy)\MSS:
(KeepAliveTime) How often keep-alive packets are sent in milliseconds

Note: This Group Policy path does not exist by default. An additional Group Policy template (`MSS-legacy.admx/adml`) is required - it is available from this TechNet blog post: [The MSS settings – Microsoft Security Guidance blog](#)

Default Value:

7,200,000 milliseconds or 120 minutes.

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.4.6 (L1) Ensure 'MSS: (NoNameReleaseOnDemand) Allow the computer to ignore NetBIOS name release requests except from WINS servers' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

NetBIOS over TCP/IP is a network protocol that among other things provides a way to easily resolve NetBIOS names that are registered on Windows-based systems to the IP addresses that are configured on those systems. This setting determines whether the computer releases its NetBIOS name when it receives a name-release request.

The recommended state for this setting is: Enabled.

Rationale:

The NetBT protocol is designed not to use authentication, and is therefore vulnerable to spoofing. Spoofing makes a transmission appear to come from a user other than the user who performed the action. A malicious user could exploit the unauthenticated nature of the protocol to send a name-conflict datagram to a target computer, which would cause the computer to relinquish its name and not respond to queries.

An attacker could send a request over the network and query a computer to release its NetBIOS name. As with any change that could affect applications, it is recommended that you test this change in a non-production environment before you change the production environment.

The result of such an attack could be to cause intermittent connectivity issues on the target computer, or even to prevent the use of Network Neighborhood, domain logons, the NET SEND command, or additional NetBIOS name resolution.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\NetBT\Parameters:NoNameReleaseOnDemand

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\MSS (Legacy)\MSS: (NoNameReleaseOnDemand) Allow the computer to ignore NetBIOS name release requests except from WINS servers

Note: This Group Policy path does not exist by default. An additional Group Policy template (`MSS-legacy.admx/adml`) is required - it is available from this TechNet blog post: [The MSS settings – Microsoft Security Guidance blog](#)

Default Value:

Enabled.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73505
Rule ID: SV-88157r1_rule
STIG ID: WN16-CC-000070
Severity: CAT III

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.4.7 (L2) Ensure 'MSS: (PerformRouterDiscovery) Allow IRDP to detect and configure Default Gateway addresses (could lead to DoS)' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This setting is used to enable or disable the Internet Router Discovery Protocol (IRDP), which allows the system to detect and configure default gateway addresses automatically as described in RFC 1256 on a per-interface basis.

The recommended state for this setting is: Disabled.

Rationale:

An attacker who has gained control of a computer on the same network segment could configure a computer on the network to impersonate a router. Other computers with IRDP enabled would then attempt to route their traffic through the already compromised computer.

Impact:

Windows will not automatically detect and configure default gateway addresses on the computer.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters:PerformRouterDiscovery

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\MSS (Legacy)\MSS: (PerformRouterDiscovery) Allow IRDP to detect and configure Default Gateway addresses (could lead to DoS)

Note: This Group Policy path does not exist by default. An additional Group Policy template (`MSS-legacy.admx/adml`) is required - it is available from this TechNet blog post: [The MSS settings – Microsoft Security Guidance blog](#)

Default Value:

Enable only if DHCP sends the Perform Router Discovery option.

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.4.8 (L1) Ensure 'MSS: (SafeDllSearchMode) Enable Safe DLL search mode (recommended)' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

The DLL search order can be configured to search for DLLs that are requested by running processes in one of two ways:

- Search folders specified in the system path first, and then search the current working folder.
- Search current working folder first, and then search the folders specified in the system path.

When enabled, the registry value is set to 1. With a setting of 1, the system first searches the folders that are specified in the system path and then searches the current working folder. When disabled the registry value is set to 0 and the system first searches the current working folder and then searches the folders that are specified in the system path.

Applications will be forced to search for DLLs in the system path first. For applications that require unique versions of these DLLs that are included with the application, this entry could cause performance or stability problems.

The recommended state for this setting is: Enabled.

Note: More information on how Safe DLL search mode works is available at this link:
[Dynamic-Link Library Search Order - Windows applications | Microsoft Docs](https://docs.microsoft.com/en-us/windows/desktop/dlls/dynamic-link-library-search-order)

Rationale:

If a user unknowingly executes hostile code that was packaged with additional files that include modified versions of system DLLs, the hostile code could load its own versions of those DLLs and potentially increase the type and degree of damage the code can render.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager:SafeDllSearchMode

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\MSS (Legacy)\MSS: (SafeDllSearchMode) Enable Safe DLL search mode (recommended)

Note: This Group Policy path does not exist by default. An additional Group Policy template (MSS-legacy.admx/adml) is required - it is available from this TechNet blog post: [The MSS settings – Microsoft Security Guidance blog](#)

Default Value:

Enabled.

CIS Controls:

Version 7

8.1 Utilize Centrally Managed Anti-malware Software

Utilize centrally managed anti-malware software to continuously monitor and defend each of the organization's workstations and servers.

8.2 Ensure Anti-Malware Software and Signatures are Updated

Ensure that the organization's anti-malware software updates its scanning engine and signature database on a regular basis.

18.4.9 (L1) Ensure 'MSS: (ScreenSaverGracePeriod) The time in seconds before the screen saver grace period expires (0 recommended)' is set to 'Enabled: 5 or fewer seconds' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Windows includes a grace period between when the screen saver is launched and when the console is actually locked automatically when screen saver locking is enabled.

The recommended state for this setting is: Enabled: 5 or fewer seconds.

Rationale:

The default grace period that is allowed for user movement before the screen saver lock takes effect is five seconds. If you leave the default grace period configuration, your computer is vulnerable to a potential attack from someone who could approach the console and attempt to log on to the computer before the lock takes effect. An entry to the registry can be made to adjust the length of the grace period.

Impact:

Users will have to enter their passwords to resume their console sessions as soon as the grace period ends after screen saver activation.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon:ScreenSaverGracePeriod

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:
5 or fewer seconds:

Computer Configuration\Policies\Administrative Templates\MSS (Legacy)\MSS:
(ScreenSaverGracePeriod) The time in seconds before the screen saver grace period expires (0 recommended)

Note: This Group Policy path does not exist by default. An additional Group Policy template (MSS-legacy.admx/adml) is required - it is available from this TechNet blog post: [The MSS settings – Microsoft Security Guidance blog](#)

Default Value:

5 seconds.

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

18.4.10 (L2) Ensure 'MSS: (TcpMaxDataRetransmissions IPv6) How many times unacknowledged data is retransmitted' is set to 'Enabled: 3' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This setting controls the number of times that TCP retransmits an individual data segment (non-connect segment) before the connection is aborted. The retransmission time-out is doubled with each successive retransmission on a connection. It is reset when responses resume. The base time-out value is dynamically determined by the measured round-trip time on the connection.

The recommended state for this setting is: Enabled: 3.

Rationale:

A malicious user could exhaust a target computer's resources if it never sent any acknowledgment messages for data that was transmitted by the target computer.

Impact:

TCP starts a retransmission timer when each outbound segment is passed to the IP. If no acknowledgment is received for the data in a given segment before the timer expires, then the segment is retransmitted up to three times.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\TCPIP6\Parameters:TcpMaxDataRetransmissions

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled: 3:

```
Computer Configuration\Policies\Administrative Templates\MSS  
(Legacy) \MSS : (TcpMaxDataRetransmissions IPv6) How many times unacknowledged  
data is retransmitted
```

Note: This Group Policy path does not exist by default. An additional Group Policy template (`MSS-legacy.admx/adml`) is required - it is available from this TechNet blog post: [The MSS settings – Microsoft Security Guidance blog](#)

Default Value:

5 times.

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.4.11 (L2) Ensure 'MSS: (TcpMaxDataRetransmissions) How many times unacknowledged data is retransmitted' is set to 'Enabled: 3'
(Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This setting controls the number of times that TCP retransmits an individual data segment (non-connect segment) before the connection is aborted. The retransmission time-out is doubled with each successive retransmission on a connection. It is reset when responses resume. The base time-out value is dynamically determined by the measured round-trip time on the connection.

The recommended state for this setting is: Enabled: 3.

Rationale:

A malicious user could exhaust a target computer's resources if it never sent any acknowledgment messages for data that was transmitted by the target computer.

Impact:

TCP starts a retransmission timer when each outbound segment is passed to the IP. If no acknowledgment is received for the data in a given segment before the timer expires, then the segment is retransmitted up to three times.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters:TcpMaxDataRetransmissions

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled: 3:

Computer Configuration\Policies\Administrative Templates\MSS (Legacy)\MSS : (TcpMaxDataRetransmissions) How many times unacknowledged data is retransmitted

Note: This Group Policy path does not exist by default. An additional Group Policy template (`MSS-legacy.admx/adml`) is required - it is available from this TechNet blog post: [The MSS settings – Microsoft Security Guidance blog](#)

Default Value:

5 times.

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.4.12 (L1) Ensure 'MSS: (WarningLevel) Percentage threshold for the security event log at which the system will generate a warning' is set to 'Enabled: 90% or less' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting can generate a security audit in the Security event log when the log reaches a user-defined threshold.

The recommended state for this setting is: Enabled: 90% or less.

Note: If log settings are configured to Overwrite events as needed or Overwrite events older than x days, this event will not be generated.

Rationale:

If the Security log reaches 90 percent of its capacity and the computer has not been configured to overwrite events as needed, more recent events will not be written to the log. If the log reaches its capacity and the computer has been configured to shut down when it can no longer record events to the Security log, the computer will shut down and will no longer be available to provide network services.

Impact:

An audit event will be generated when the Security log reaches the 90% percent full threshold (or whatever lower value may be set) unless the log is configured to overwrite events as needed.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Eventlog\Security:WarningLevel

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled: 90% or less:

Computer Configuration\Policies\Administrative Templates\MSS (Legacy)\MSS: (WarningLevel) Percentage threshold for the security event log at which the system will generate a warning

Note: This Group Policy path does not exist by default. An additional Group Policy template (MSS-legacy.admx/adml) is required - it is available from this TechNet blog post: [The MSS settings – Microsoft Security Guidance blog](#)

Default Value:

0%. (No warning event is generated.)

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

6.4 Ensure adequate storage for logs

Ensure that all systems that store logs have adequate storage space for the logs generated.

6.5 Central Log Management

Ensure that appropriate logs are being aggregated to a central log management system for analysis and review.

18.5 Network

This section contains recommendations for network settings.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.5.1 Background Intelligent Transfer Service (BITS)

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Bits.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.5.2 BranchCache

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `PeerToPeerCaching.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

18.5.3 DirectAccess Client Experience Settings

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `nca.admx/adml` that is included with the Microsoft 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.5.4 DNS Client

This section contains recommendations related to DNS Client.

This Group Policy section is provided by the Group Policy template `DnsClient.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.5.4.1 (L1) Ensure 'Turn off multicast name resolution' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 1 - Domain Controller
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

LLMNR is a secondary name resolution protocol. With LLMNR, queries are sent using multicast over a local network link on a single subnet from a client computer to another client computer on the same subnet that also has LLMNR enabled. LLMNR does not require a DNS server or DNS client configuration, and provides name resolution in scenarios in which conventional DNS name resolution is not possible.

The recommended state for this setting is: `Enabled`.

Rationale:

An attacker can listen on a network for these LLMNR (UDP/5355) or NBT-NS (UDP/137) broadcasts and respond to them, tricking the host into thinking that it knows the location of the requested system.

Note: To completely mitigate local name resolution poisoning, in addition to this setting, the properties of each installed NIC should also be set to `Disable NetBIOS over TCP/IP` (on the WINS tab in the NIC properties). Unfortunately, there is no global setting to achieve this that automatically applies to all NICs - it is a per-NIC setting that varies with different NIC hardware installations.

Impact:

In the event DNS is unavailable a system will be unable to request it from other systems on the same subnet.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\DNSClient:EnableMulticast

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Network\DNS Client\Turn off multicast name resolution

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template DnsClient.admx/adml that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Disabled. (LLMNR will be enabled on all available network adapters.)

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.5.5 Fonts

This section contains recommendations related to Fonts.

This Group Policy section is provided by the Group Policy template `GroupPolicy.admx/adml` that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

18.5.5.1 (L2) Ensure 'Enable Font Providers' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting determines whether Windows is allowed to download fonts and font catalog data from an online font provider.

The recommended state for this setting is: `Disabled`.

Rationale:

In an enterprise managed environment the IT department should be managing the changes to the system configuration, to ensure all changes are tested and approved.

Impact:

Windows will not connect to an online font provider and will only enumerate locally-installed fonts.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\System:EnableFontProviders`

Remediation:

To establish the recommended configuration via GP, set the following UI path to **Disabled**:

Computer Configuration\Policies\Administrative Templates\Network\Fonts\Enable Font Providers

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `GroupPolicy.admx/adml` that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

Default Value:

Enabled. (Fonts that are included in Windows but that are not stored locally will be downloaded on demand from an online font provider.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

18.5.6 Hotspot Authentication

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `hotspotauth.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.5.7 Lanman Server

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `LanmanServer.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

18.5.8 Lanman Workstation

This section contains recommendations related to Lanman Workstation.

This Group Policy section is provided by the Group Policy template `LanmanWorkstation.admx/adml` that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

18.5.8.1 (L1) Ensure 'Enable insecure guest logons' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines if the SMB client will allow insecure guest logons to an SMB server.

The recommended state for this setting is: `Disabled`.

Rationale:

Insecure guest logons are used by file servers to allow unauthenticated access to shared folders.

Impact:

The SMB client will reject insecure guest logons. This was not originally the default behavior in older versions of Windows, but Microsoft changed the default behavior starting with Windows Server 2016 R1709: [Guest access in SMB2 disabled by default in Windows 10 and Windows Server 2016](#)

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\LanmanWorkstation:AllowInsecureGuestAuth

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Network\Lanman Workstation\Enable insecure guest logons

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template LanmanWorkstation.admx/adml that is included with the Microsoft Windows 10 Release 1511 Administrative Templates (or newer).

Default Value:

Server 2016 RTM (R1607) and older: Enabled. (The SMB client will allow insecure guest logons.)

Server 2016 R1709, Server 2019 and newer: Disabled. (The SMB client will reject insecure guest logons.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73507
Rule ID: SV-88159r1_rule
STIG ID: WN16-CC-000080
Severity: CAT II

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.5.9 Link-Layer Topology Discovery

This section contains recommendations for Link-Layer Topology Discovery settings.

This Group Policy section is provided by the Group Policy template `LinkLayerTopologyDiscovery.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.5.9.1 (L2) Ensure 'Turn on Mapper I/O (LLTDIO) driver' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting changes the operational behavior of the Mapper I/O network protocol driver.

LLTDIO allows a computer to discover the topology of a network it's connected to. It also allows a computer to initiate Quality-of-Service requests such as bandwidth estimation and network health analysis.

The recommended state for this setting is: `Disabled`.

Rationale:

To help protect from potentially discovering and connecting to unauthorized devices, this setting should be disabled to prevent responding to network traffic for network topology discovery.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry locations:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\LLTD:AllowLLTDIOOnDomain  
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\LLTD:AllowLLTDIOOnPublicNet  
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\LLTD:EnableLLTDIO  
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\LLTD:ProhibitLLTDIOOnPrivateNet
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

```
Computer Configuration\Policies\Administrative Templates\Network\Link-Layer Topology Discovery\Turn on Mapper I/O (LLTDIO) driver
```

Note: This Group Policy path is provided by the Group Policy template `LinkLayerTopologyDiscovery.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (The Mapper I/O (LLTDIO) network protocol driver is turned off.)

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.5.9.2 (L2) Ensure 'Turn on Responder (RSPNDR) driver' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting changes the operational behavior of the Responder network protocol driver.

The Responder allows a computer to participate in Link Layer Topology Discovery requests so that it can be discovered and located on the network. It also allows a computer to participate in Quality-of-Service activities such as bandwidth estimation and network health analysis.

The recommended state for this setting is: Disabled.

Rationale:

To help protect from potentially discovering and connecting to unauthorized devices, this setting should be disabled to prevent responding to network traffic for network topology discovery.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry locations:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\LLTD:AllowRspndrOnDomain  
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\LLTD:AllowRspndrOnPublicNet  
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\LLTD:EnableRspndr  
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\LLTD:ProhibitRspndrOnPrivateNet
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Network\Link-Layer Topology Discovery\Turn on Responder (RSPNDR) driver

Note: This Group Policy path is provided by the Group Policy template `LinkLayerTopologyDiscovery.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (The Responder (RSPNDR) network protocol driver is turned off.)

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.5.10 Microsoft Peer-to-Peer Networking Services

This section contains recommendations for Microsoft Peer-to-Peer Networking Services settings.

This Group Policy section is provided by the Group Policy template `P2P-pnrp.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.5.10.1 Peer Name Resolution Protocol

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `P2P-pnrp.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.5.10.2 (L2) Ensure 'Turn off Microsoft Peer-to-Peer Networking Services' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

The Peer Name Resolution Protocol (PNRP) allows for distributed resolution of a name to an IPv6 address and port number. The protocol operates in the context of *clouds*. A cloud is a set of peer computers that can communicate with each other by using the same IPv6 scope.

Peer-to-Peer protocols allow for applications in the areas of RTC, collaboration, content distribution and distributed processing.

The recommended state for this setting is: Enabled.

Rationale:

This setting enhances the security of the environment and reduces the overall risk exposure related to peer-to-peer networking.

Impact:

Microsoft Peer-to-Peer Networking Services are turned off in their entirety, and all applications dependent on them will stop working.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Peernet:Disabled

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Network\Microsoft Peer-to-Peer Networking Services\Turn off Microsoft Peer-to-Peer Networking Services

Note: This Group Policy path is provided by the Group Policy template P2P-pnrp.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Peer-to-peer protocols are turned on.)

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.5.11 Network Connections

This section contains recommendations for Network Connections settings.

This Group Policy section is provided by the Group Policy template `NetworkConnections.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.5.11.1 Windows Defender Firewall (formerly Windows Firewall)

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsFirewall.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Note: This section was initially named *Windows Firewall* but was renamed by Microsoft to *Windows Defender Firewall* starting with the Microsoft Windows 10 Release 1709 Administrative Templates.

18.5.11.2 (L1) Ensure 'Prohibit installation and configuration of Network Bridge on your DNS domain network' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

You can use this procedure to controls user's ability to install and configure a Network Bridge.

The recommended state for this setting is: Enabled.

Rationale:

The Network Bridge setting, if enabled, allows users to create a Layer 2 Media Access Control (MAC) bridge, enabling them to connect two or more physical network segments together. A Network Bridge thus allows a computer that has connections to two different networks to share data between those networks.

In an enterprise managed environment, where there is a need to control network traffic to only authorized paths, allowing users to create a Network Bridge increases the risk and attack surface from the bridged network.

Impact:

Users cannot create or configure a Network Bridge.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\Network
Connections:NC_AllowNetBridge_NLA

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Network\Network
Connections\Prohibit installation and configuration of Network Bridge on your
DNS domain network

Note: This Group Policy path is provided by the Group Policy template
NetworkConnections.admx/adml that is included with all versions of the Microsoft
Windows Administrative Templates.

Default Value:

Disabled. (Users are able to create and modify the configuration of Network Bridges.
Membership in the local Administrators group, or equivalent, is the minimum required to
complete this procedure.)

CIS Controls:

Version 7

4.3 Ensure the Use of Dedicated Administrative Accounts

Ensure that all users with administrative account access use a dedicated or secondary account for elevated activities. This account should only be used for administrative activities and not internet browsing, email, or similar activities.

18.5.11.3 (L1) Ensure 'Prohibit use of Internet Connection Sharing on your DNS domain network' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Although this "legacy" setting traditionally applied to the use of Internet Connection Sharing (ICS) in Windows 2000, Windows XP & Server 2003, this setting now freshly applies to the Mobile Hotspot feature in Windows 10 & Server 2016.

The recommended state for this setting is: Enabled.

Rationale:

Non-administrators should not be able to turn on the Mobile Hotspot feature and open their Internet connectivity up to nearby mobile devices.

Impact:

Mobile Hotspot cannot be enabled or configured by Administrators and non-Administrators alike.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\Network Connections:NC_ShowSharedAccessUI

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Network\Network Connections\Prohibit use of Internet Connection Sharing on your DNS domain network

Note: This Group Policy path is provided by the Group Policy template NetworkConnections.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (All users are allowed to turn on Mobile Hotspot.)

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.5.11.4 (L1) Ensure 'Require domain users to elevate when setting a network's location' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether to require domain users to elevate when setting a network's location.

The recommended state for this setting is: Enabled.

Rationale:

Allowing regular users to set a network location increases the risk and attack surface.

Impact:

Domain users must elevate when setting a network's location.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\Network
Connections:NC_StdDomainUserSetLocation

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Network\Network
Connections\Require domain users to elevate when setting a network's location

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template NetworkConnections.admx/adml that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

Default Value:

Disabled. (Users can set a network's location without elevating.)

CIS Controls:

Version 7

4.3 Ensure the Use of Dedicated Administrative Accounts

Ensure that all users with administrative account access use a dedicated or secondary account for elevated activities. This account should only be used for administrative activities and not internet browsing, email, or similar activities.

18.5.12 Network Connectivity Status Indicator

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `NCSI.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.5.13 Network Isolation

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `NetworkIsolation.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.5.14 Network Provider

This section contains recommendations for Network Provider settings.

This Group Policy section is provided by the Group Policy template `NetworkProvider.admx/adml` that is included with the [MS15-011](#) / [MSKB 3000483](#) security update and the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

18.5.14.1 (L1) Ensure 'Hardened UNC Paths' is set to 'Enabled, with "Require Mutual Authentication" and "Require Integrity" set for all NETLOGON and SYSVOL shares' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting configures secure access to UNC paths.

The recommended state for this setting is: Enabled, with "Require Mutual Authentication" and "Require Integrity" set for all NETLOGON and SYSVOL shares.

Note: If the environment exclusively contains Windows 8.0 / Server 2012 (non-R2) or newer systems, then the "Privacy" setting may (optionally) also be set to enable SMB encryption. However, using SMB encryption will render the targeted share paths completely inaccessible by older OSes, so only use this additional option with caution and thorough testing.

Rationale:

In February 2015, Microsoft released a new control mechanism to mitigate a security risk in Group Policy as part of the [MS15-011](#) / [MSKB 3000483](#) security update. This mechanism requires both the installation of the new security update and also the deployment of specific group policy settings to all computers on the domain from Windows Vista / Server 2008 (non-R2) or newer (the associated security patch to enable this feature was not released for Server 2003). A new group policy template (`NetworkProvider.admx/adml`) was also provided with the security update.

Once the new GPO template is in place, the following are the minimum requirements to remediate the Group Policy security risk:

```
\*\NETLOGON RequireMutualAuthentication=1, RequireIntegrity=1  
\*\SYSVOL RequireMutualAuthentication=1, RequireIntegrity=1
```

Note: A reboot may be required after the setting is applied to a client machine to access the above paths.

Additional guidance on the deployment of this security setting is available from the Microsoft Premier Field Engineering (PFE) Platforms TechNet Blog here: [Guidance on Deployment of MS15-011 and MS15-014](#).

Impact:

Windows only allows access to the specified UNC paths after fulfilling additional security requirements.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry locations:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\NetworkProvider\Harden edPaths:*\NETLOGON
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\NetworkProvider\Harden edPaths:*\SYSVOL

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled with the following paths configured, at a minimum:

```
\*\*\NETLOGON RequireMutualAuthentication=1, RequireIntegrity=1  
\*\*\SYSVOL RequireMutualAuthentication=1, RequireIntegrity=1
```

Computer Configuration\Policies\Administrative Templates\Network\Network Provider\Hardened UNC Paths

Note: This Group Policy path does not exist by default. An additional Group Policy template (NetworkProvider.admx/adml) is required - it is included with the [MS15-011](#) / [MSKB 3000483](#) security update or with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

Default Value:

Disabled. (No UNC paths are hardened.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73509
Rule ID: SV-88161r1_rule
STIG ID: WN16-CC-000090
Severity: CAT II

CIS Controls:

Version 7

3.1 Run Automated Vulnerability Scanning Tools

Utilize an up-to-date SCAP-compliant vulnerability scanning tool to automatically scan all systems on the network on a weekly or more frequent basis to identify all potential vulnerabilities on the organization's systems.

18.5.15 Offline Files

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `OfflineFiles.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.5.16 QoS Packet Scheduler

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `QOS.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.5.17 SNMP

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Snmp.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.5.18 SSL Configuration Settings

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `CipherSuiteOrder.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.5.19 TCP/IP Settings

This section contains TCP/IP configuration settings.

This Group Policy section is provided by the Group Policy template `tcpip.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

18.5.19.1 IPv6 Transition Technologies

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `tcpip.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

18.5.19.2 Parameters

This section contains TCP/IP parameter configuration settings.

This Group Policy section is provided by the Group Policy template `tcpip.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

18.5.19.2.1 (L2) Disable IPv6 (Ensure TCPIP6 Parameter 'DisabledComponents' is set to '0xff (255)' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

Internet Protocol version 6 (IPv6) is a set of protocols that computers use to exchange information over the Internet and over home and business networks. IPv6 allows for many more IP addresses to be assigned than IPv4 did. Older networking, hosts and operating systems may not support IPv6 natively.

The recommended state for this setting is: `DisabledComponents` – `0xff` (255)

Rationale:

Since the vast majority of private enterprise managed networks have no need to utilize IPv6 (because they have access to private IPv4 addressing), disabling IPv6 components removes a possible attack surface that is also harder to monitor the traffic on. As a result, we recommend configuring IPv6 to a Disabled state when it is not needed.

Impact:

Connectivity to other systems using IPv6 will no longer operate, and software that depends on IPv6 will cease to function. Examples of Microsoft applications that may use IPv6 include: Remote Assistance, HomeGroup, DirectAccess, Windows Mail.

This registry change is documented in Microsoft Knowledge Base article 929852: [How to disable IPv6 or its components in Windows](#).

Note: This registry change does not take effect until the next reboot.

Audit:

Navigate to the Registry path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration, set the following Registry value to 0xff (255) (DWORD):

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\TCPIP6\Parameters:DisabledComponents

Note: This change does not take effect until the computer has been restarted.

Note #2: Although Microsoft does not provide an ADMX template to configure this registry value, a custom .ADM template (`Disable-IPv6-Components-KB929852.adm`) is provided in the CIS Benchmark Remediation Kit to facilitate its configuration. Be aware though that simply turning off the group policy setting in the .ADM template will not "undo" the change once applied. Instead, the opposite setting must be applied to change the registry value to the opposite state.

Default Value:

All IPv6 components are enabled and Windows prefers IPv6 over IPv4.

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.5.20 Windows Connect Now

This section contains recommendations for Windows Connect Now settings.

This Group Policy section is provided by the Group Policy template `WindowsConnectNow.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.5.20.1 (L2) Ensure 'Configuration of wireless settings using Windows Connect Now' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting allows the configuration of wireless settings using Windows Connect Now (WCN). The WCN Registrar enables the discovery and configuration of devices over Ethernet (UPnP) over in-band 802.11 Wi-Fi through the Windows Portable Device API (WPD) and via USB Flash drives. Additional options are available to allow discovery and configuration over a specific medium.

The recommended state for this setting is: `Disabled`.

Rationale:

This setting enhances the security of the environment and reduces the overall risk exposure related to user configuration of wireless settings.

Impact:

WCN operations are disabled over all media.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry locations:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WCN\Registrars:EnableRegistrars  
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WCN\Registrars:DisableUPnPRegistrar  
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WCN\Registrars:DisableInBand802DOT11Registrar  
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WCN\Registrars:DisableFlashConfigRegistrar  
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WCN\Registrars:DisableWPDRegistrar
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

```
Computer Configuration\Policies\Administrative Templates\Network\Windows Connect Now\Configuration of wireless settings using Windows Connect Now
```

Note: This Group Policy path is provided by the Group Policy template WindowsConnectNow.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

WCN operations are enabled and allowed over all media.

CIS Controls:

Version 7

15.4 Disable Wireless Access on Devices if Not Required

Disable wireless access on devices that do not have a business purpose for wireless access.

15.5 Limit Wireless Access on Client Devices

Configure wireless access on client machines that do have an essential wireless business purpose, to allow access only to authorized wireless networks and to restrict access to other wireless networks.

18.5.20.2 (L2) Ensure 'Prohibit access of the Windows Connect Now wizards' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting prohibits access to Windows Connect Now (WCN) wizards.

The recommended state for this setting is: Enabled.

Rationale:

Allowing standard users to access the Windows Connect Now wizard increases the risk and attack surface.

Impact:

The WCN wizards are turned off and users have no access to any of the wizard tasks. All the configuration related tasks including "Set up a wireless router or access point" and "Add a wireless device" are disabled.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WCN\UI:DisableWcnUi

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Network\Windows Connect Now\Prohibit access of the Windows Connect Now wizards

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template WindowsConnectNow.admx/adml that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Disabled. (Users can access all WCN wizard tasks.)

CIS Controls:

Version 7

15.4 Disable Wireless Access on Devices if Not Required

Disable wireless access on devices that do not have a business purpose for wireless access.

15.5 Limit Wireless Access on Client Devices

Configure wireless access on client machines that do have an essential wireless business purpose, to allow access only to authorized wireless networks and to restrict access to other wireless networks.

18.5.21 Windows Connection Manager

This section contains recommendations for Windows Connection Manager settings.

This Group Policy section is provided by the Group Policy template `wcm.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.5.21.1 (L1) Ensure 'Minimize the number of simultaneous connections to the Internet or a Windows Domain' is set to 'Enabled: 1 = Minimize simultaneous connections' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting prevents computers from establishing multiple simultaneous connections to either the Internet or to a Windows domain.

The recommended state for this setting is: Enabled: 1 = Minimize simultaneous connections.

Rationale:

Preventing bridged network connections can help prevent a user unknowingly allowing traffic to route between internal and external networks, which risks exposure to sensitive internal data.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\ Policies\Microsoft\Windows\WcmSvc\GroupPolicy:fMinimizeConnections

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

1 = Minimize simultaneous connections:

Computer Configuration\Policies\Administrative Templates\Network\Windows Connection Manager\Minimize the number of simultaneous connections to the Internet or a Windows Domain

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template WCM.admx/adml that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates. It was updated with a new *Minimize Policy Options* sub-setting starting with the Windows 10 Release 1903 Administrative Templates.

Default Value:

Enabled: 1 = Minimize simultaneous connections. (Any new automatic internet connection is blocked when the computer has at least one active internet connection to a preferred type of network. The order of preference (from most preferred to least preferred) is: Ethernet, WLAN, then cellular. Ethernet is always preferred when connected. Users can still manually connect to any network.)

CIS Controls:

Version 7

15.5 Limit Wireless Access on Client Devices

Configure wireless access on client machines that do have an essential wireless business purpose, to allow access only to authorized wireless networks and to restrict access to other wireless networks.

18.5.21.2 (L2) Ensure 'Prohibit connection to non-domain networks when connected to domain authenticated network' is set to 'Enabled' (MS only) (Automated)

Profile Applicability:

- Level 2 - Member Server

Description:

This policy setting prevents computers from connecting to both a domain based network and a non-domain based network at the same time.

The recommended state for this setting is: Enabled.

Rationale:

The potential concern is that a user would unknowingly allow network traffic to flow between the insecure public network and the enterprise managed network.

Impact:

The computer responds to automatic and manual network connection attempts based on the following circumstances:

Automatic connection attempts - When the computer is already connected to a domain based network, all automatic connection attempts to non-domain networks are blocked. - When the computer is already connected to a non-domain based network, automatic connection attempts to domain based networks are blocked.

Manual connection attempts - When the computer is already connected to either a non-domain based network or a domain based network over media other than Ethernet, and a user attempts to create a manual connection to an additional network in violation of this policy setting, the existing network connection is disconnected and the manual connection is allowed. - When the computer is already connected to either a non-domain based network or a domain based network over Ethernet, and a user attempts to create a manual connection to an additional network in violation of this policy setting, the existing Ethernet connection is maintained and the manual connection attempt is blocked.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WcmSvc\GroupPolicy:fBlockNonDomain

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Network\Windows Connection Manager\Prohibit connection to non-domain networks when connected to domain authenticated network

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `wcm.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Disabled. (Connections to both domain and non-domain networks are simultaneously allowed.)

CIS Controls:

Version 7

12.2 Scan for Unauthorized Connections across Trusted Network Boundaries

Perform regular scans from outside each trusted network boundary to detect any unauthorized connections which are accessible across the boundary.

18.6 Printers

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.7 Start Menu and Taskbar

This section contains recommendations for Start Menu and Taskbar.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

18.7.1 Notifications

This section contains recommendations for Start Menu and Taskbar Notifications.

This Group Policy section is provided by the Group Policy template `WPN.admx/adml` that is included with the Microsoft 10 Release 1803 Administrative Templates (or newer).

18.7.1.1 (L2) Ensure 'Turn off notifications network usage' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting blocks applications from using the network to send notifications to update tiles, tile badges, toast, or raw notifications. This policy setting turns off the connection between Windows and the Windows Push Notification Service (WNS). This policy setting also stops applications from being able to poll application services to update tiles.

The recommended state for this setting is: `Enabled`.

Rationale:

Windows Push Notification Services (WNS) is a mechanism to receive 3rd-party notifications and updates from the cloud/Internet. In a high security environment, external systems, especially those hosted outside the organization, should be prevented from having an impact on the secure workstations.

Impact:

Applications and system features will not be able receive notifications from the network from WNS or via notification polling APIs.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\CurrentVersion\PushNotifications:NoCloudApplicationNotification

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Start Menu and Taskbar\Turn off notifications network usage

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template WPN.admx/adml that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Disabled.

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

13.1 Maintain an Inventory Sensitive Information

Maintain an inventory of all sensitive information stored, processed, or transmitted by the organization's technology systems, including those located onsite or at a remote service provider.

18.8 System

This section contains recommendations for System settings.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.1 Access-Denied Assistance

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `srm-fci.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.8.2 App-V

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `appv.admx/adml` that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

18.8.3 Audit Process Creation

This section contains settings related to auditing of process creation events.

This Group Policy section is provided by the Group Policy template `AuditSettings.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

18.8.3.1 (L1) Ensure 'Include command line in process creation events' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server

Description:

This policy setting determines what information is logged in security audit events when a new process has been created.

The recommended state for this setting is: `Disabled`.

Note: The feature that this setting controls is not normally supported in OSes older than Server 2012 R2. However, in February 2015 Microsoft added support for the feature to Server 2008 R2 and Server 2012 (non-R2) via a special update - [KB3004375](#). Therefore, this setting is also important to set on those older OSes in the event that the update is installed on them.

Rationale:

When this policy setting is enabled, any user who has read access to the security events can read the command-line arguments for any successfully created process. Command-line arguments may contain sensitive or private information such as passwords or user data.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System
Audit:ProcessCreationIncludeCmdLine_Enabled

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\System\Audit Process Creation\Include command line in process creation events

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template AuditSettings.admx/adml that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

Default Value:

Disabled. (The process's command line information will not be included in Audit Process Creation events.)

CIS Controls:

Version 7

16.4 Encrypt or Hash all Authentication Credentials

Encrypt or hash with a salt all authentication credentials when stored.

18.8.3.2 (L3) Ensure 'Include command line in process creation events' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines what information is logged in security audit events when a new process has been created.

The recommended state for this setting is: Enabled.

Note: The feature that this setting controls is not normally supported in OSes older than Server 2012 R2. However, in February 2015 Microsoft added support for the feature to Server 2008 R2 and Server 2012 (non-R2) via a special update - [KB3004375](#). Therefore, this setting is also important to set on those older OSes in the event that the update is installed on them.

Rationale:

When this policy setting is enabled, any user who has read access to the security events can read the command-line arguments for any successfully created process. Command-line arguments may contain sensitive or private information such as passwords or user data.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System  
Audit:ProcessCreationIncludeCmdLine_Enabled
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

```
Computer Configuration\Policies\Administrative Templates\System\Audit Process Creation\Include command line in process creation events
```

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `AuditSettings.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

Default Value:

Disabled. (The process's command line information will not be included in Audit Process Creation events.)

Additional Information:

This Benchmark Recommendation maps to:

```
Microsoft Windows Server 2016 Security Technical Implementation Guide:  
Version 1, Release 13, Benchmark Date: May 15, 2020
```

```
Vul ID: V-73511  
Rule ID: SV-88163r1_rule  
STIG ID: WN16-CC-000100  
Severity: CAT II
```

CIS Controls:

Version 7

16.4 Encrypt or Hash all Authentication Credentials

Encrypt or hash with a salt all authentication credentials when stored.

18.8.4 Credentials Delegation

This section contains settings related to Credential Delegation.

This Group Policy section is provided by the Group Policy template `CredSsp.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.4.1 (L1) Ensure 'Encryption Oracle Remediation' is set to 'Enabled: Force Updated Clients' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Some versions of the CredSSP protocol that is used by some applications (such as Remote Desktop Connection) are vulnerable to an encryption oracle attack against the client. This policy controls compatibility with vulnerable clients and servers and allows you to set the level of protection desired for the encryption oracle vulnerability.

The recommended state for this setting is: Enabled: Force Updated Clients.

Rationale:

This setting is important to mitigate the CredSSP encryption oracle vulnerability, for which information was published by Microsoft on 03/13/2018 in [CVE-2018-0886 | CredSSP Remote Code Execution Vulnerability](#). All versions of Windows Server from Server 2008 (non-R2) onwards are affected by this vulnerability, and will be compatible with this recommendation provided that they have been patched up through May 2018 (or later).

Impact:

Client applications which use CredSSP will not be able to fall back to the insecure versions and services using CredSSP will not accept unpatched clients. This setting should not be deployed until all remote hosts support the newest version, which is achieved by ensuring that all Microsoft security updates at least through May 2018 are installed.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System\CredSSP\Parameters:AllowEncryptionOracle

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled: Force Updated Clients:

Computer Configuration\Policies\Administrative Templates\System\Credentials Delegation\Encryption Oracle Remediation

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template CredSsp.admx/adml that is included with the Microsoft Windows 10 Release 1803 Administrative Templates (or newer).

Default Value:

Without the May 2018 security update: Enabled: Vulnerable (Client applications which use CredSSP will expose the remote servers to attacks by supporting fall back to the insecure versions and services using CredSSP will accept unpatched clients.)

With the May 2018 security update: Enabled: Mitigated (Client applications which use CredSSP will not be able to fall back to the insecure version but services using CredSSP will accept unpatched clients.)

CIS Controls:

Version 7

16.4 Encrypt or Hash all Authentication Credentials

Encrypt or hash with a salt all authentication credentials when stored.

18.8.4.2 (L1) Ensure 'Remote host allows delegation of non-exportable credentials' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Remote host allows delegation of non-exportable credentials. When using credential delegation, devices provide an exportable version of credentials to the remote host. This exposes users to the risk of credential theft from attackers on the remote host. The Restricted Admin Mode and Windows Defender Remote Credential Guard features are two options to help protect against this risk.

The recommended state for this setting is: Enabled.

Note: More detailed information on Windows Defender Remote Credential Guard and how it compares to Restricted Admin Mode can be found at this link: [Protect Remote Desktop credentials with Windows Defender Remote Credential Guard \(Windows 10\) | Microsoft Docs](https://docs.microsoft.com/en-us/windows/defender/remote-credential-guard)

Rationale:

Restricted Admin Mode was designed to help protect administrator accounts by ensuring that reusable credentials are not stored in memory on remote devices that could potentially be compromised. *Windows Defender Remote Credential Guard* helps you protect your credentials over a Remote Desktop connection by redirecting Kerberos requests back to the device that is requesting the connection. Both features should be enabled and supported, as they reduce the chance of credential theft.

Impact:

The host will support the *Restricted Admin Mode* and *Windows Defender Remote Credential Guard* features.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\CredentialsDelegation:  
AllowProtectedCreds
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

```
Computer Configuration\Policies\Administrative Templates\System\Credentials  
Delegation\Remote host allows delegation of non-exportable credentials
```

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `CredSsp.admx/adml` that is included with the Microsoft Windows 10 Release 1703 Administrative Templates (or newer).

Default Value:

Disabled. (*Restricted Admin Mode* and *Windows Defender Remote Credential Guard* are not supported. Users will always need to pass their credentials to the host.)

CIS Controls:

Version 7

16.4 Encrypt or Hash all Authentication Credentials

Encrypt or hash with a salt all authentication credentials when stored.

18.8.5 Device Guard

This section contains Device Guard settings.

This Group Policy section is provided by the Group Policy template `DeviceGuard.admx/adml` that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

18.8.5.1 (NG) Ensure 'Turn On Virtualization Based Security' is set to 'Enabled' (Automated)

Profile Applicability:

- Next Generation Windows Security - Domain Controller
- Next Generation Windows Security - Member Server

Description:

This policy setting specifies whether Virtualization Based Security is enabled. Virtualization Based Security uses the Windows Hypervisor to provide support for security services.

The recommended state for this setting is: `Enabled`

Note: Virtualization Based Security requires a 64-bit version of Windows with Secure Boot enabled, which in turn requires that Windows was installed with a UEFI BIOS configuration, not a Legacy BIOS configuration. In addition, if running Windows on a virtual machine, the hardware-assisted CPU virtualization feature (Intel VT-x or AMD-V) must be exposed by the host to the guest VM.

More information on system requirements for this feature can be found at this link:

[Windows Defender Credential Guard Requirements \(Windows 10\) | Microsoft Docs](#)

Rationale:

Kerberos, NTLM, and Credential manager isolate secrets by using virtualization-based security. Previous versions of Windows stored secrets in the Local Security Authority (LSA). Prior to Windows 10, the LSA stored secrets used by the operating system in its process memory. With Windows Defender Credential Guard enabled, the LSA process in the operating system talks to a new component called the isolated LSA process that stores and protects those secrets. Data stored by the isolated LSA process is protected using virtualization-based security and is not accessible to the rest of the operating system.

Impact:

Warning: All drivers on the system must be compatible with this feature or the system may crash. Ensure that this policy setting is only deployed to computers which are known to be compatible.

Warning #2: Enabling Windows Defender Credential Guard on Domain Controllers is not supported. The domain controller hosts authentication services which integrate with processes isolated when Windows Defender Credential Guard is enabled, causing crashes.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\DeviceGuard:EnableVirtualizationBasedSecurity

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Device Guard\Turn On Virtualization Based Security

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template DeviceGuard.admx/adml that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

Default Value:

Disabled.

CIS Controls:

Version 7

16.4 Encrypt or Hash all Authentication Credentials

Encrypt or hash with a salt all authentication credentials when stored.

18.8.5.2 (NG) Ensure 'Turn On Virtualization Based Security: Select Platform Security Level' is set to 'Secure Boot and DMA Protection' (Automated)

Profile Applicability:

- Next Generation Windows Security - Domain Controller
- Next Generation Windows Security - Member Server

Description:

This policy setting specifies whether Virtualization Based Security is enabled. Virtualization Based Security uses the Windows Hypervisor to provide support for security services.

The recommended state for this setting is: Secure Boot and DMA Protection

Note: Virtualization Based Security requires a 64-bit version of Windows with Secure Boot enabled, which in turn requires that Windows was installed with a UEFI BIOS configuration, not a Legacy BIOS configuration. In addition, if running Windows on a virtual machine, the hardware-assisted CPU virtualization feature (Intel VT-x or AMD-V) must be exposed by the host to the guest VM.

More information on system requirements for this feature can be found at this link:

[Windows Defender Credential Guard Requirements \(Windows 10\) | Microsoft Docs](#)

Rationale:

Secure Boot can help reduce the risk of bootloader attacks and in conjunction with DMA protections to help protect data from being scraped from memory.

Impact:

Warning: All drivers on the system must be compatible with this feature or the system may crash. Ensure that this policy setting is only deployed to computers which are known to be compatible.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\DeviceGuard:RequirePlatformSecurityFeatures

Remediation:

To establish the recommended configuration via GP, set the following UI path to Secure Boot and DMA Protection:

Computer Configuration\Policies\Administrative Templates\System\Device Guard\Turn On Virtualization Based Security: Select Platform Security Level

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template DeviceGuard.admx/adml that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

Default Value:

Disabled.

CIS Controls:

Version 7

16.4 Encrypt or Hash all Authentication Credentials

Encrypt or hash with a salt all authentication credentials when stored.

18.8.5.3 (NG) Ensure 'Turn On Virtualization Based Security: Virtualization Based Protection of Code Integrity' is set to 'Enabled with UEFI lock' (Automated)

Profile Applicability:

- Next Generation Windows Security - Domain Controller
- Next Generation Windows Security - Member Server

Description:

This setting enables virtualization based protection of Kernel Mode Code Integrity. When this is enabled, kernel mode memory protections are enforced and the Code Integrity validation path is protected by the Virtualization Based Security feature.

The recommended state for this setting is: Enabled with UEFI lock

Note: Virtualization Based Security requires a 64-bit version of Windows with Secure Boot enabled, which in turn requires that Windows was installed with a UEFI BIOS configuration, not a Legacy BIOS configuration. In addition, if running Windows on a virtual machine, the hardware-assisted CPU virtualization feature (Intel VT-x or AMD-V) must be exposed by the host to the guest VM.

More information on system requirements for this feature can be found at this link:

[Windows Defender Credential Guard Requirements \(Windows 10\) | Microsoft Docs](#)

Rationale:

The Enabled with UEFI lock option ensures that Virtualization Based Protection of Code Integrity cannot be disabled remotely.

Impact:

Warning: All drivers on the system must be compatible with this feature or the system may crash. Ensure that this policy setting is only deployed to computers which are known to be compatible.

Warning #2: Once this setting is turned on and active, **Virtualization Based Security cannot be disabled solely via GPO** or any other remote method. After removing the setting from GPO, the features must also be manually disabled *locally at the machine* using the steps provided at this link:

[Manage Windows Defender Credential Guard \(Windows 10\) | Microsoft Docs](#)

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\DeviceGuard:Hypervisor
EnforcedCodeIntegrity

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled with UEFI lock:

Computer Configuration\Policies\Administrative Templates\System\Device
Guard\Turn On Virtualization Based Security: Virtualization Based Protection
of Code Integrity

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template DeviceGuard.admx/adml that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

Default Value:

Disabled.

CIS Controls:

Version 7

16.4 Encrypt or Hash all Authentication Credentials

Encrypt or hash with a salt all authentication credentials when stored.

18.8.5.4 (NG) Ensure 'Turn On Virtualization Based Security: Require UEFI Memory Attributes Table' is set to 'True (checked)' (Automated)

Profile Applicability:

- Next Generation Windows Security - Domain Controller
- Next Generation Windows Security - Member Server

Description:

This option will only enable Virtualization Based Protection of Code Integrity on devices with UEFI firmware support for the Memory Attributes Table. Devices without the UEFI Memory Attributes Table may have firmware that is incompatible with Virtualization Based Protection of Code Integrity which in some cases can lead to crashes or data loss or incompatibility with certain plug-in cards. If not setting this option the targeted devices should be tested to ensure compatibility.

The recommended state for this setting is: True (checked)

Note: Virtualization Based Security requires a 64-bit version of Windows with Secure Boot enabled, which in turn requires that Windows was installed with a UEFI BIOS configuration, not a Legacy BIOS configuration. In addition, if running Windows on a virtual machine, the hardware-assisted CPU virtualization feature (Intel VT-x or AMD-V) must be exposed by the host to the guest VM.

More information on system requirements for this feature can be found at this link:

[Windows Defender Credential Guard Requirements \(Windows 10\) | Microsoft Docs](https://docs.microsoft.com/en-us/windows/security/identity-and-sign-in/credential-guard-requirements)

Rationale:

This setting will help protect this control from being enabled on a system that is not compatible which could lead to a crash or data loss.

Impact:

Warning: All drivers on the system must be compatible with this feature or the system may crash. Ensure that this policy setting is only deployed to computers which are known to be compatible.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\DeviceGuard:HVCIMATRequired

Remediation:

To establish the recommended configuration via GP, set the following UI path to TRUE:

Computer Configuration\Policies\Administrative Templates\System\Device Guard\Turn On Virtualization Based Security: Require UEFI Memory Attributes Table

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template DeviceGuard.admx/adml that is included with the Microsoft Windows 10 Release 1703 Administrative Templates (or newer).

Default Value:

Disabled.

CIS Controls:

Version 7

16.4 Encrypt or Hash all Authentication Credentials

Encrypt or hash with a salt all authentication credentials when stored.

18.8.5.5 (NG) Ensure 'Turn On Virtualization Based Security: Credential Guard Configuration' is set to 'Enabled with UEFI lock' (MS Only) (Automated)

Profile Applicability:

- Next Generation Windows Security - Member Server

Description:

This setting lets users turn on Credential Guard with virtualization-based security to help protect credentials. The "Enabled with UEFI lock" option ensures that Credential Guard cannot be disabled remotely. In order to disable the feature, you must set the Group Policy to "Disabled" as well as remove the security functionality from each computer, with a physically present user, in order to clear configuration persisted in UEFI.

The recommended state for this setting is: *Enabled with UEFI lock, but only on Member Servers (not Domain Controllers).*

Note: Virtualization Based Security requires a 64-bit version of Windows with Secure Boot enabled, which in turn requires that Windows was installed with a UEFI BIOS configuration, not a Legacy BIOS configuration. In addition, if running Windows on a virtual machine, the hardware-assisted CPU virtualization feature (Intel VT-x or AMD-V) must be exposed by the host to the guest VM.

More information on system requirements for this feature can be found at this link:

[Windows Defender Credential Guard Requirements \(Windows 10\) | Microsoft Docs](https://docs.microsoft.com/en-us/windows/security/identity-and-sign-in/windows-defender-credential-guard-requirements)

Rationale:

The Enabled with UEFI lock option ensures that Credential Guard cannot be disabled remotely.

Impact:

Warning: All drivers on the system must be compatible with this feature or the system may crash. Ensure that this policy setting is only deployed to computers which are known to be compatible.

Warning #2: Enabling Windows Defender Credential Guard on Domain Controllers is not supported. The domain controller hosts authentication services which integrate with processes isolated when Windows Defender Credential Guard is enabled, causing crashes.

Warning #3: Once this setting is turned on and active, **Credential Guard cannot be disabled solely via GPO** or any other remote method. After removing the setting from GPO, the features must also be manually disabled *locally at the machine* using the steps provided at this link:

[Manage Windows Defender Credential Guard \(Windows 10\) | Microsoft Docs](#)

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\DeviceGuard:LsaCfgFlags

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled with UEFI lock (on Member Servers only):

Computer Configuration\Policies\Administrative Templates\System\Device Guard\Turn On Virtualization Based Security: Credential Guard Configuration

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template DeviceGuard.admx/adml that is included with the Microsoft Windows 10 Release 1511 Administrative Templates (or newer).

Default Value:

Disabled.

CIS Controls:

Version 7

16.4 Encrypt or Hash all Authentication Credentials

Encrypt or hash with a salt all authentication credentials when stored.

18.8.5.6 (NG) Ensure 'Turn On Virtualization Based Security: Credential Guard Configuration' is set to 'Disabled' (DC Only) (Automated)

Profile Applicability:

- Next Generation Windows Security - Domain Controller

Description:

This setting lets users turn on Credential Guard with virtualization-based security to help protect credentials.

The recommended state for this setting is: *Disabled on Domain Controllers*.

Note: Virtualization Based Security requires a 64-bit version of Windows with Secure Boot enabled, which in turn requires that Windows was installed with a UEFI BIOS configuration, not a Legacy BIOS configuration. In addition, if running Windows on a virtual machine, the hardware-assisted CPU virtualization feature (Intel VT-x or AMD-V) must be exposed by the host to the guest VM.

More information on system requirements for this feature can be found at this link:

[Windows Defender Credential Guard Requirements \(Windows 10\) | Microsoft Docs](#)

Rationale:

Credential Guard is not useful on Domain Controllers and can cause crashes on them.

Impact:

None - this is the default behavior.

Warning: Enabling Windows Defender Credential Guard on Domain Controllers is not supported. The domain controller hosts authentication services which integrate with processes isolated when Windows Defender Credential Guard is enabled, causing crashes.

[Manage Windows Defender Credential Guard \(Windows 10\) | Microsoft Docs](#)

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\DeviceGuard:LsaCfgFlags

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\System\Device Guard\Turn On Virtualization Based Security: Credential Guard Configuration

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `DeviceGuard.admx/adml` that is included with the Microsoft Windows 10 Release 1511 Administrative Templates (or newer).

Default Value:

Disabled. (Credential Guard is disabled.)

CIS Controls:

Version 7

16.4 Encrypt or Hash all Authentication Credentials

Encrypt or hash with a salt all authentication credentials when stored.

18.8.5.7 (NG) Ensure 'Turn On Virtualization Based Security: Secure Launch Configuration' is set to 'Enabled' (Automated)

Profile Applicability:

- Next Generation Windows Security - Domain Controller
- Next Generation Windows Security - Member Server

Description:

Secure Launch protects the Virtualization Based Security environment from exploited vulnerabilities in device firmware.

The recommended state for this setting is: Enabled.

Note: Virtualization Based Security requires a 64-bit version of Windows with Secure Boot enabled, which in turn requires that Windows was installed with a UEFI BIOS configuration, not a Legacy BIOS configuration. In addition, if running Windows on a virtual machine, the hardware-assisted CPU virtualization feature (Intel VT-x or AMD-V) must be exposed by the host to the guest VM.

More information on system requirements for this feature can be found at this link:

[Windows Defender Credential Guard Requirements \(Windows 10\) | Microsoft Docs](#)

Rationale:

Secure Launch changes the way windows boots to use Intel Trusted Execution Technology (TXT) and Runtime BIOS Resilience features to prevent firmware exploits from being able to impact the security of the Windows Virtualization Based Security environment.

Impact:

Warning: All drivers on the system must be compatible with this feature or the system may crash. Ensure that this policy setting is only deployed to computers which are known to be compatible.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\DeviceGuard:ConfigureSystemGuardLaunch

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Device Guard\Turn On Virtualization Based Security: Secure Launch Configuration

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template DeviceGuard.admx/adml that is included with the Microsoft Windows 10 Release 1809 & Server 2019 Administrative Templates (or newer).

Default Value:

Not Configured. (Administrative users can choose whether to enable or disable Secure Launch.)

CIS Controls:

Version 7

16.4 Encrypt or Hash all Authentication Credentials

Encrypt or hash with a salt all authentication credentials when stored.

18.8.6 Device Health Attestation Service

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `TPM.admx/adml` that is included with the Microsoft Windows 10 Release 1709 Administrative Templates (or newer).

18.8.7 Device Installation

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `DeviceInstallation.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.8 Device Redirection

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `DeviceRedirection.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

18.8.9 Disk NV Cache

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `DiskNVCache.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.10 Disk Quotas

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `DiskQuota.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.11 Display

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Display.admx/adml` that is included with the Microsoft Windows 10 Release 1703 Administrative Templates (or newer).

18.8.12 Distributed COM

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `DCOM.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.13 Driver Installation

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `DeviceInstallation.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.14 Early Launch Antimalware

This section contains recommendations for configuring boot-start driver initialization settings.

This Group Policy section is provided by the Group Policy template EarlyLaunchAM.admx/adml that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.8.14.1 (L1) Ensure 'Boot-Start Driver Initialization Policy' is set to 'Enabled: Good, unknown and bad but critical' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to specify which boot-start drivers are initialized based on a classification determined by an Early Launch Antimalware boot-start driver. The Early Launch Antimalware boot-start driver can return the following classifications for each boot-start driver:

- **Good:** The driver has been signed and has not been tampered with.
- **Bad:** The driver has been identified as malware. It is recommended that you do not allow known bad drivers to be initialized.
- **Bad, but required for boot:** The driver has been identified as malware, but the computer cannot successfully boot without loading this driver.
- **Unknown:** This driver has not been attested to by your malware detection application and has not been classified by the Early Launch Antimalware boot-start driver.

If you enable this policy setting you will be able to choose which boot-start drivers to initialize the next time the computer is started.

If your malware detection application does not include an Early Launch Antimalware boot-start driver or if your Early Launch Antimalware boot-start driver has been disabled, this setting has no effect and all boot-start drivers are initialized.

The recommended state for this setting is: Enabled: Good, unknown and bad but critical.

Rationale:

This policy setting helps reduce the impact of malware that has already infected your system.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Policies\EarlyLaunch:DriverLoadPolicy
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled: Good, unknown and bad but critical:

```
Computer Configuration\Policies\Administrative Templates\System\Early Launch Antimalware\Boot-Start Driver Initialization Policy
```

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `EarlyLaunchAM.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Disabled. (Boot-start drivers determined to be Good, Unknown or Bad but Boot Critical are initialized and the initialization of drivers determined to be bad is skipped.)

CIS Controls:

Version 7

8.1 Utilize Centrally Managed Anti-malware Software

Utilize centrally managed anti-malware software to continuously monitor and defend each of the organization's workstations and servers.

8.2 Ensure Anti-Malware Software and Signatures are Updated

Ensure that the organization's anti-malware software updates its scanning engine and signature database on a regular basis.

18.8.14.2 (L3) Ensure 'Boot-Start Driver Initialization Policy' is set to 'Not Configured' or 'Enabled with anything except ALL' (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to specify which boot-start drivers are initialized based on a classification determined by an Early Launch Antimalware boot-start driver. The Early Launch Antimalware boot-start driver can return the following classifications for each boot-start driver:

- **Good:** The driver has been signed and has not been tampered with.
- **Bad:** The driver has been identified as malware. It is recommended that you do not allow known bad drivers to be initialized.
- **Bad, but required for boot:** The driver has been identified as malware, but the computer cannot successfully boot without loading this driver.
- **Unknown:** This driver has not been attested to by your malware detection application and has not been classified by the Early Launch Antimalware boot-start driver.

If you enable this policy setting you will be able to choose which boot-start drivers to initialize the next time the computer is started.

If your malware detection application does not include an Early Launch Antimalware boot-start driver or if your Early Launch Antimalware boot-start driver has been disabled, this setting has no effect and all boot-start drivers are initialized.

The recommended state for this setting is: Not Configured or Enabled with anything except ALL. Configuring this setting to Enabled: Good only, Enabled: Good and unknown or Enabled: Good, unknown and bad but critical also conforms to the benchmark.

Rationale:

This policy setting helps reduce the impact of malware that has already infected your system.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Policies\EarlyLaunch:DriverLoadPolicy

Remediation:

To establish the recommended configuration via GP, set the following UI path to one of the following: Not Configured, Enabled: Good only, Enabled: Good and unknown or Enabled: Good, unknown and bad but critical.

Computer Configuration\Policies\Administrative Templates\System\Early Launch Antimalware\Boot-Start Driver Initialization Policy

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template EarlyLaunchAM.admx/adml that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Disabled. (Boot-start drivers determined to be Good, Unknown or Bad but Boot Critical are initialized and the initialization of drivers determined to be bad is skipped.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73521
Rule ID: SV-88173r1_rule
STIG ID: WN16-CC-000140
Severity: CAT II

CIS Controls:

Version 7

8.1 Utilize Centrally Managed Anti-malware Software

Utilize centrally managed anti-malware software to continuously monitor and defend each of the organization's workstations and servers.

8.2 Ensure Anti-Malware Software and Signatures are Updated

Ensure that the organization's anti-malware software updates its scanning engine and signature database on a regular basis.

18.8.15 Enhanced Storage Access

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template EnhancedStorage.admx/adml that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

18.8.16 File Classification Infrastructure

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template srm-fci.admx/adml that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.8.17 File Share Shadow Copy Agent

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template FileServerVSSAgent.admx/adml that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.8.18 File Share Shadow Copy Provider

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy templates `FileServerVSSProvider.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.8.19 Filesystem (formerly NTFS Filesystem)

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `FileSys.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Note: This section was initially named *NTFS Filesystem* but was renamed by Microsoft to *Filesystem* starting with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates.

18.8.20 Folder Redirection

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `FolderRedirection.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.21 Group Policy

This section contains recommendations for configuring group policy-related settings.

This Group Policy section is provided by the Group Policy template `GroupPolicy.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.21.1 Logging and tracing

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `GroupPolicyPreferences.admx/adml` that is included with the Microsoft Windows Server 2008 (non-R2) Administrative Templates (or newer).

18.8.21.2 (L1) Ensure 'Configure registry policy processing: Do not apply during periodic background processing' is set to 'Enabled: FALSE' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

The "Do not apply during periodic background processing" option prevents the system from updating affected policies in the background while the computer is in use. When background updates are disabled, policy changes will not take effect until the next user logon or system restart.

The recommended state for this setting is: Enabled: FALSE (unchecked).

Rationale:

Setting this option to false (unchecked) will ensure that domain policy changes take effect more quickly, as compared to waiting until the next user logon or system restart.

Impact:

Group Policies will be reapplied every time they are refreshed, which could have a slight impact on performance.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\GroupPolicy\{35378EAC-683F-11D2-A89A-00C04FBBCFA2}:NoBackgroundPolicy
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled, then set the Do not apply during periodic background processing option to FALSE (unchecked):

```
Computer Configuration\Policies\Administrative Templates\System\Group Policy\Configure registry policy processing
```

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `GroupPolicy.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Disabled. (Group policies are not reapplied until the next logon or restart.)

CIS Controls:

Version 7

5.4 Deploy System Configuration Management Tools

Deploy system configuration management tools that will automatically enforce and redeploy configuration settings to systems at regularly scheduled intervals.

5.5 Implement Automated Configuration Monitoring Systems

Utilize a Security Content Automation Protocol (SCAP) compliant configuration monitoring system to verify all security configuration elements, catalog approved exceptions, and alert when unauthorized changes occur.

18.8.21.3 (L1) Ensure 'Configure registry policy processing: Process even if the Group Policy objects have not changed' is set to 'Enabled: TRUE' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

The "Process even if the Group Policy objects have not changed" option updates and reapplys policies even if the policies have not changed.

The recommended state for this setting is: Enabled: TRUE (checked).

Rationale:

Setting this option to true (checked) will ensure unauthorized changes that might have been configured locally are forced to match the domain-based Group Policy settings again.

Impact:

Group Policies will be reapplied even if they have not been changed, which could have a slight impact on performance.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\Group Policy\{35378EAC-683F-11D2-A89A-00C04FBBCFA2}:NoGPOListChanges

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled, then set the Process even if the Group Policy objects have not changed option to TRUE (checked):

Computer Configuration\Policies\Administrative Templates\System\Group Policy\Configure registry policy processing

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `GroupPolicy.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Disabled. (Group policies are not reapplied if they have not been changed.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73525
Rule ID: SV-88177r1_rule
STIG ID: WN16-CC-000150
Severity: CAT II

CIS Controls:

Version 7

5.4 Deploy System Configuration Management Tools

Deploy system configuration management tools that will automatically enforce and redeploy configuration settings to systems at regularly scheduled intervals.

5.5 Implement Automated Configuration Monitoring Systems

Utilize a Security Content Automation Protocol (SCAP) compliant configuration monitoring system to verify all security configuration elements, catalog approved exceptions, and alert when unauthorized changes occur.

18.8.21.4 (L1) Ensure 'Continue experiences on this device' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether the Windows device is allowed to participate in cross-device experiences (continue experiences).

The recommended state for this setting is: Disabled.

Rationale:

A cross-device experience is when a system can access app and send messages to other devices. In an enterprise managed environment only trusted systems should be communicating within the network. Access to any other system should be prohibited.

Impact:

The Windows device will not be discoverable by other devices, and cannot participate in cross-device experiences.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\System:EnableCdp

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\System\Group Policy\Continue experiences on this device

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `GroupPolicy.admx/adml` that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

Default Value:

The default behavior depends on the Windows edition.

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

18.8.21.5 (L1) Ensure 'Turn off background refresh of Group Policy' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting prevents Group Policy from being updated while the computer is in use. This policy setting applies to Group Policy for computers, users and Domain Controllers.

The recommended state for this setting is: Disabled.

Rationale:

This setting ensures that group policy changes take effect more quickly, as compared to waiting until the next user logon or system restart.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is in effect when the following registry location does not exist:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System:
DisableBkGndGroupPolicy

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\System\Group Policy\Turn off background refresh of Group Policy

Note: This Group Policy path is provided by the Group Policy template `GroupPolicy.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Updates can be applied while users are working.)

CIS Controls:

Version 7

5.4 Deploy System Configuration Management Tools

Deploy system configuration management tools that will automatically enforce and redeploy configuration settings to systems at regularly scheduled intervals.

5.5 Implement Automated Configuration Monitoring Systems

Utilize a Security Content Automation Protocol (SCAP) compliant configuration monitoring system to verify all security configuration elements, catalog approved exceptions, and alert when unauthorized changes occur.

18.8.22 Internet Communication Management

This section contains recommendations related to Internet Communication Management.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.22.1 Internet Communication settings

This section contains recommendations related to Internet Communication settings.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.22.1.1 (L1) Ensure 'Turn off downloading of print drivers over HTTP' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls whether the computer can download print driver packages over HTTP. To set up HTTP printing, printer drivers that are not available in the standard operating system installation might need to be downloaded over HTTP.

The recommended state for this setting is: Enabled.

Rationale:

Users might download drivers that include malicious code.

Impact:

Print drivers cannot be downloaded over HTTP.

Note: This policy setting does not prevent the client computer from printing to printers on the intranet or the Internet over HTTP. It only prohibits downloading drivers that are not already installed locally.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\Printers:DisableWebPnPDownload

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Internet Communication Management\Internet Communication settings\Turn off downloading of print drivers over HTTP

Note: This Group Policy path is provided by the Group Policy template ICM.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Users can download print drivers over HTTP.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73527
Rule ID: SV-88179r1_rule
STIG ID: WN16-CC-000160
Severity: CAT II

CIS Controls:

Version 7

2.6 Address unapproved software

Ensure that unauthorized software is either removed or the inventory is updated in a timely manner

2.7 Utilize Application Whitelisting

Utilize application whitelisting technology on all assets to ensure that only authorized software executes and all unauthorized software is blocked from executing on assets.

18.8.22.1.2 (L2) Ensure 'Turn off handwriting personalization data sharing' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This setting turns off data sharing from the handwriting recognition personalization tool.

The handwriting recognition personalization tool enables Tablet PC users to adapt handwriting recognition to their own writing style by providing writing samples. The tool can optionally share user writing samples with Microsoft to improve handwriting recognition in future versions of Windows. The tool generates reports and transmits them to Microsoft over a secure connection.

The recommended state for this setting is: Enabled.

Rationale:

A person's handwriting is Personally Identifiable Information (PII), especially when it comes to your signature. As such, it is unacceptable in many environments to automatically upload PII to a website without explicit approval by the user.

Impact:

Tablet PC users cannot choose to share writing samples from the handwriting recognition personalization tool with Microsoft.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\TabletPC:PreventHandwritingDataSharing

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Internet Communication Management\Internet Communication settings\Turn off handwriting personalization data sharing

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template ShapeCollector.admx/adml that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

Default Value:

Tablet PC users can choose whether or not they want to share their writing samples from the handwriting recognition personalization tool with Microsoft.

CIS Controls:

Version 7

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.8.22.1.3 (L2) Ensure 'Turn off handwriting recognition error reporting' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

Turns off the handwriting recognition error reporting tool.

The handwriting recognition error reporting tool enables users to report errors encountered in Tablet PC Input Panel. The tool generates error reports and transmits them to Microsoft over a secure connection. Microsoft uses these error reports to improve handwriting recognition in future versions of Windows.

The recommended state for this setting is: Enabled.

Rationale:

A person's handwriting is Personally Identifiable Information (PII), especially when it comes to your signature. As such, it is unacceptable in many environments to automatically upload PII to a website without explicit approval by the user.

Impact:

Users cannot start the handwriting recognition error reporting tool or send error reports to Microsoft.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\HandwritingErrorReports : PreventHandwritingErrorReports

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Internet Communication Management\Internet Communication settings\Turn off handwriting recognition error reporting

Note: This Group Policy path is provided by the Group Policy template `InkWatson.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Tablet PC users can report handwriting recognition errors to Microsoft.)

CIS Controls:

Version 7

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.8.22.1.4 (L2) Ensure 'Turn off Internet Connection Wizard if URL connection is referring to Microsoft.com' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting specifies whether the Internet Connection Wizard can connect to Microsoft to download a list of Internet Service Providers (ISPs).

The recommended state for this setting is: Enabled.

Rationale:

In an enterprise managed environment we want to lower the risk of a user unknowingly exposing sensitive data.

Impact:

The "Choose a list of Internet Service Providers" path in the Internet Connection Wizard causes the wizard to exit. This prevents users from retrieving the list of ISPs, which resides on Microsoft servers.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\Internet Connection Wizard:ExitOnMSICW

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Internet Communication Management\Internet Communication settings\Turn off Internet Connection Wizard if URL connection is referring to Microsoft.com

Note: This Group Policy path is provided by the Group Policy template ICM.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Users can connect to Microsoft to download a list of ISPs for their area.)

CIS Controls:

Version 7

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.8.22.1.5 (L1) Ensure 'Turn off Internet download for Web publishing and online ordering wizards' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls whether Windows will download a list of providers for the Web publishing and online ordering wizards.

The recommended state for this setting is: Enabled.

Rationale:

Although the risk is minimal, enabling this setting will reduce the possibility of a user unknowingly downloading malicious content through this feature.

Impact:

Windows is prevented from downloading providers; only the service providers cached in the local registry are displayed.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\Explore
r:NoWebServices

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Internet Communication Management\Internet Communication settings\Turn off Internet download for Web publishing and online ordering wizards

Note: This Group Policy path is provided by the Group Policy template `ICM.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (A list of providers is downloaded when the user uses the web publishing or online ordering wizards.)

CIS Controls:

Version 7

7.4 Maintain and Enforce Network-Based URL Filters

Enforce network-based URL filters that limit a system's ability to connect to websites not approved by the organization. This filtering shall be enforced for each of the organization's systems, whether they are physically at an organization's facilities or not.

18.8.22.1.6 (L2) Ensure 'Turn off printing over HTTP' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to disable the client computer's ability to print over HTTP, which allows the computer to print to printers on the intranet as well as the Internet.

The recommended state for this setting is: Enabled.

Note: This control affects printing over **both** HTTP and HTTPS.

Rationale:

Information that is transmitted over HTTP through this capability is not protected and can be intercepted by malicious users. For this reason, it is not often used in enterprise managed environments.

Impact:

The client computer will not be able to print to Internet printers over HTTP or HTTPS.

Note: This policy setting affects the client side of Internet printing only. Regardless of how it is configured, a computer could act as an Internet Printing server and make its shared printers available through HTTP.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\Printers:DisableHTTPPrinting
--

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Internet Communication Management\Internet Communication settings\Turn off printing over HTTP

Note: This Group Policy path is provided by the Group Policy template `ICM.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Users can choose to print to Internet printers over HTTP.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73529
Rule ID: SV-88181r1_rule
STIG ID: WN16-CC-000170
Severity: CAT II

CIS Controls:

Version 7

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.8.22.1.7 (L2) Ensure 'Turn off Registration if URL connection is referring to Microsoft.com' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting specifies whether the Windows Registration Wizard connects to Microsoft.com for online registration.

The recommended state for this setting is: Enabled.

Rationale:

Users in an enterprise managed environment should not be registering their own copies of Windows, providing their own PII in the process.

Impact:

Users are blocked from connecting to Microsoft.com for online registration and they cannot register their copy of Windows online.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\Registration Wizard
Control:NoRegistration

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Internet
Communication Management\Internet Communication settings\Turn off
Registration if URL connection is referring to Microsoft.com

Note: This Group Policy path is provided by the Group Policy template ICM.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Users can connect to Microsoft.com to complete the online Windows Registration.)

CIS Controls:

Version 7

7.4 Maintain and Enforce Network-Based URL Filters

Enforce network-based URL filters that limit a system's ability to connect to websites not approved by the organization. This filtering shall be enforced for each of the organization's systems, whether they are physically at an organization's facilities or not.

18.8.22.1.8 (L2) Ensure 'Turn off Search Companion content file updates' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting specifies whether Search Companion should automatically download content updates during local and Internet searches.

The recommended state for this setting is: Enabled.

Rationale:

There is a small risk that users will unknowingly reveal sensitive information because of the topics they are searching for. This risk is very low because even if this setting is enabled users still must submit search queries to the desired search engine in order to perform searches.

Impact:

Search Companion does not download content updates during searches.

Note: Internet searches will still send the search text and information about the search to Microsoft and the chosen search provider. If you select Classic Search, the Search Companion feature will be unavailable. You can select Classic Search by clicking Start, Search, Change Preferences, and then Change Internet Search Behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\SearchCompanion:DisableContentFileUpdates

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Internet Communication Management\Internet Communication settings\Turn off Search Companion content file updates

Note: This Group Policy path is provided by the Group Policy template `ICM.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Search Companion downloads content updates unless the user is using Classic Search.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.8.22.1.9 (L2) Ensure 'Turn off the "Order Prints" picture task' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting specifies whether the "Order Prints Online" task is available from Picture Tasks in Windows folders.

The Order Prints Online Wizard is used to download a list of providers and allow users to order prints online.

The recommended state for this setting is: Enabled.

Rationale:

In an enterprise managed environment we want to lower the risk of a user unknowingly exposing sensitive data.

Impact:

The task "Order Prints Online" is removed from Picture Tasks in File Explorer folders.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\Explorer:NoOnlinePrintsWizard

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Internet Communication Management\Internet Communication settings\Turn off the "Order Prints" picture task

Note: This Group Policy path is provided by the Group Policy template ICM.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (The "Order Prints Online" task is displayed in Picture Tasks in File Explorer folders.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.8.22.1.10 (L2) Ensure 'Turn off the "Publish to Web" task for files and folders' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting specifies whether the tasks Publish this file to the Web, Publish this folder to the Web, and Publish the selected items to the Web are available from File and Folder Tasks in Windows folders.

The recommended state for this setting is: Enabled.

Rationale:

Users may publish confidential or sensitive information to a public service outside of the control of the organization.

Impact:

The "Publish to Web" task is removed from File and Folder tasks in Windows folders.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\Explore
r:NoPublishingWizard

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Internet
Communication Management\Internet Communication settings\Turn off the
"Publish to Web" task for files and folders

Note: This Group Policy path is provided by the Group Policy template ICM.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (The "Publish to Web" task is shown in File and Folder tasks in Windows folders.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.8.22.1.11 (L2) Ensure 'Turn off the Windows Messenger Customer Experience Improvement Program' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting specifies whether Windows Messenger can collect anonymous information about how the Windows Messenger software and service is used. Microsoft uses information collected through the Customer Experience Improvement Program to detect software flaws so that they can be corrected more quickly, enabling this setting will reduce the amount of data Microsoft is able to gather for this purpose.

The recommended state for this setting is: Enabled.

Rationale:

Large enterprise managed environments may not want to have information collected by Microsoft from managed client computers.

Impact:

Windows Messenger will not collect usage information, and the user settings to enable the collection of usage information will not be shown.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Messenger\Client:CEIP

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Internet Communication Management\Internet Communication settings\Turn off the Windows Messenger Customer Experience Improvement Program

Note: This Group Policy path is provided by the Group Policy template `ICM.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Users have the choice to opt-in and allow information to be collected.

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.8.22.1.12 (L2) Ensure 'Turn off Windows Customer Experience Improvement Program' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting specifies whether the Windows Customer Experience Improvement Program can collect anonymous information about how Windows is used.

Microsoft uses information collected through the Windows Customer Experience Improvement Program to improve features that are most used and to detect flaws so that they can be corrected more quickly. Enabling this setting will reduce the amount of data Microsoft is able to gather for this purpose. The recommended state for this setting is: Enabled.

Rationale:

Large enterprise managed environments may not want to have information collected by Microsoft from managed client computers.

Impact:

All users are opted out of the Windows Customer Experience Improvement Program.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\SQMClient\Windows:CEIPEnable

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Internet Communication Management\Internet Communication settings\Turn off Windows Customer Experience Improvement Program

Note: This Group Policy path is provided by the Group Policy template `ICM.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

The Administrator can use the Problem Reports and Solutions component in Control Panel to enable Windows Customer Experience Improvement Program for all users.

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.8.22.1.13 (L2) Ensure 'Turn off Windows Error Reporting' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting controls whether or not errors are reported to Microsoft.

Error Reporting is used to report information about a system or application that has failed or has stopped responding and is used to improve the quality of the product.

The recommended state for this setting is: Enabled.

Rationale:

If a Windows Error occurs in a secure, enterprise managed environment, the error should be reported directly to IT staff for troubleshooting and remediation. There is no benefit to the corporation to report these errors directly to Microsoft, and there is some risk of unknowingly exposing sensitive data as part of the error.

Impact:

Users are not given the option to report errors to Microsoft.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\Windows Error  
Reporting:Disabled  
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\PCHealth\ErrorReporting:DoRepo  
rt
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Internet Communication Management\Internet Communication settings\Turn off Windows Error Reporting

Note: This Group Policy path is provided by the Group Policy template `ICM.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Errors may be reported to Microsoft via the Internet or to a corporate file share.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.8.23 iSCSI

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `iSCSI.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.24 KDC

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `KDC.admx/adml` that is included with the Microsoft Windows Server 2008 (non-R2) Administrative Templates (or newer).

18.8.25 Kerberos

This section contains recommendations for Kerberos settings.

This Group Policy section is provided by the Group Policy template `Kerberos.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.25.1 (L2) Ensure 'Support device authentication using certificate' is set to 'Enabled: Automatic' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting allows you to set support for Kerberos to attempt authentication using the certificate for the device to the domain.

Support for device authentication using certificate will require connectivity to a DC in the device account domain which supports certificate authentication for computer accounts.

The recommended state for this setting is: Enabled: Automatic.

Rationale:

Having stronger device authentication with the use of certificates is strongly encouraged over standard username and password authentication. Having this set to Automatic will allow certificate based authentication to be used whenever possible.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry locations:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System\kerberos\parameters:DevicePKInitBehavior  
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System\kerberos\parameters:DevicePKInitEnabled
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:
Automatic:

Computer Configuration\Policies\Administrative
Templates\System\Kerberos\Support device authentication using certificate

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `Kerberos.admx/adml` that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

Default Value:

Automatic. (Devices will attempt to authenticate using their certificate. If the DC does not support computer account authentication using certificates then authentication with password will be attempted.)

CIS Controls:

Version 7

1.6 Address Unauthorized Assets

Ensure that unauthorized assets are either removed from the network, quarantined or the inventory is updated in a timely manner.

1.8 Utilize Client Certificates to Authenticate Hardware Assets

Use client certificates to authenticate hardware assets connecting to the organization's trusted network.

18.8.26 Kernel DMA Protection

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `DmaGuard.admx/adml` that is included with the Microsoft Windows 10 Release 1809 and Server 2019 Administrative Templates (or newer).

18.8.27 Locale Services

This section contains recommendations for Locale Services settings.

This Group Policy section is provided by the Group Policy template Globalization.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.27.1 (L2) Ensure 'Disallow copying of user input methods to the system account for sign-in' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy prevents automatic copying of user input methods to the system account for use on the sign-in screen. The user is restricted to the set of input methods that are enabled in the system account.

The recommended state for this setting is: Enabled.

Rationale:

This is a way to increase the security of the system account.

Impact:

Users will have input methods enabled for the system account on the sign-in page.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Control Panel\International:BlockUserInputMethodsForSignIn

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Locale Services\Disallow copying of user input methods to the system account for sign-in

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template Globalization.admx/adml that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Disabled. (Users will be able to use input methods enabled for their user account on the sign-in page.)

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

18.8.28 Logon

This section contains recommendations related to the logon process and lock screen.

This Group Policy section is provided by the Group Policy template `Logon.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.28.1 (L1) Ensure 'Block user from showing account details on sign-in' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy prevents the user from showing account details (email address or user name) on the sign-in screen.

The recommended state for this setting is: `Enabled`.

Rationale:

An attacker with access to the console (for example, someone with physical access or someone who is able to connect to the server through Remote Desktop Services) could view the name of the last user who logged on to the server. The attacker could then try to guess the password, use a dictionary, or use a brute-force attack to try and log on.

Impact:

The user cannot choose to show account details on the sign-in screen.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\System:BlockUserFromShowingAccountDetailsOnSignin`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Logon\Block user from showing account details on sign-in

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template Logon.admx/adml that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

Default Value:

Disabled. (The user may choose to show account details on the sign-in screen.)

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

18.8.28.2 (L1) Ensure 'Do not display network selection UI' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to control whether anyone can interact with available networks UI on the logon screen.

The recommended state for this setting is: Enabled.

Rationale:

An unauthorized user could disconnect the PC from the network or can connect the PC to other available networks without signing into Windows.

Impact:

The PC's network connectivity state cannot be changed without signing into Windows.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\System:DontDisplayNetworkSelectionUI
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Logon\Do not display network selection UI

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template Logon.admx/adml that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

Default Value:

Disabled. (Any user can disconnect the PC from the network or can connect the PC to other available networks without signing into Windows.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73531
Rule ID: SV-88185r1_rule
STIG ID: WN16-CC-000180
Severity: CAT II

CIS Controls:

Version 7

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

18.8.28.3 (L1) Ensure 'Do not enumerate connected users on domain-joined computers' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting prevents connected users from being enumerated on domain-joined computers.

The recommended state for this setting is: Enabled.

Rationale:

A malicious user could use this feature to gather account names of other users, that information could then be used in conjunction with other types of attacks such as guessing passwords or social engineering. The value of this countermeasure is small because a user with domain credentials could gather the same account information using other methods.

Impact:

The Logon UI will not enumerate any connected users on domain-joined computers.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\System:DontEnumerateConnectedUsers

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Logon\Do not enumerate connected users on domain-joined computers

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template Logon.admx/adml that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Disabled. (Connected users will be enumerated on domain-joined computers.)

CIS Controls:

Version 7

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

18.8.28.4 (L1) Ensure 'Enumerate local users on domain-joined computers' is set to 'Disabled' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

This policy setting allows local users to be enumerated on domain-joined computers.

The recommended state for this setting is: Disabled.

Rationale:

A malicious user could use this feature to gather account names of other users, that information could then be used in conjunction with other types of attacks such as guessing passwords or social engineering. The value of this countermeasure is small because a user with domain credentials could gather the same account information using other methods.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\System:EnumerateLocalUsers

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\System\Logon\Enumerate local users on domain-joined computers

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template Logon.admx/adml that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Disabled. (The Logon UI will not enumerate local users on domain-joined computers.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73533
Rule ID: SV-88187r1_rule
STIG ID: WN16-MS-000030
Severity: CAT II

CIS Controls:

Version 7

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

18.8.28.5 (L1) Ensure 'Turn off app notifications on the lock screen' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to prevent app notifications from appearing on the lock screen.

The recommended state for this setting is: Enabled.

Rationale:

App notifications might display sensitive business or personal data.

Impact:

No app notifications are displayed on the lock screen.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\System:DisableLockScreenAppNotifications

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Logon\Turn off app notifications on the lock screen

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template Logon.admx/adml that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Disabled. (Users can choose which apps display notifications on the lock screen.)

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

18.8.28.6 (L1) Ensure 'Turn off picture password sign-in' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Member Server
- Level 3 - STIG Domain Controller

Description:

This policy setting allows you to control whether a domain user can sign in using a picture password.

The recommended state for this setting is: Enabled.

Note: If the picture password feature is permitted, the user's domain password is cached in the system vault when using it.

Rationale:

Picture passwords bypass the requirement for a typed complex password. In a shared work environment, a simple shoulder surf where someone observed the on-screen gestures would allow that person to gain access to the system without the need to know the complex password. Vertical monitor screens with an image are much more visible at a distance than horizontal key strokes, increasing the likelihood of a successful observation of the mouse gestures.

Impact:

Users will not be able to set up or sign in with a picture password.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\System:BlockDomainPicturePassword

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Logon\Turn off picture password sign-in

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template CredentialProviders.admx/adml that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Disabled. (Users can set up and use a picture password.)

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

18.8.28.7 (L1) Ensure 'Turn on convenience PIN sign-in' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to control whether a domain user can sign in using a convenience PIN. In Windows 10, convenience PIN was replaced with Passport, which has stronger security properties. To configure Passport for domain users, use the policies under Computer Configuration\Administrative Templates\Windows Components\Microsoft Passport for Work.

Note: The user's domain password will be cached in the system vault when using this feature.

The recommended state for this setting is: Disabled.

Rationale:

A PIN is created from a much smaller selection of characters than a password, so in most cases a PIN will be much less robust than a password.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\System:AllowDomainPINLogon

Remediation:

To establish the recommended configuration via GP, set the following UI path to **Disabled**:

Computer Configuration\Policies\Administrative Templates\System\Logon\Turn on convenience PIN sign-in

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `CredentialProviders.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Note #2: In older Microsoft Windows Administrative Templates, this setting was initially named *Turn on PIN sign-in*, but it was renamed starting with the Windows 10 Release 1511 Administrative Templates.

Default Value:

Disabled. (A domain user can't set up and use a convenience PIN.)

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

18.8.29 Mitigation Options

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `GroupPolicy.admx/adml` that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

18.8.30 Net Logon

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Netlogon.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.31 OS Policies

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `OSPolicy.admx/adml` that is included with the Microsoft Windows 10 Release 1709 Administrative Templates (or newer).

18.8.32 Performance Control Panel

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `PerfCenterCPL.admx/adml` that is only included with the Microsoft Windows Vista through the Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

18.8.33 PIN Complexity

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Passport.admx/adml` that is included with the Microsoft Windows 10 Release 1703 Administrative Templates (or newer).

18.8.34 Power Management

This section contains recommendations for Power Management settings.

This Group Policy section is provided by the Group Policy template `Power.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.34.1 Button Settings

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Power.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.34.2 Energy Saver Settings

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Power.admx/adml` that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

18.8.34.3 Hard Disk Settings

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Power.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.34.4 Notification Settings

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Power.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.34.5 Power Throttling Settings

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Power.admx/adml` that is included with the Microsoft Windows 10 Release 1709 Administrative Templates (or newer).

18.8.34.6 Sleep Settings

This section contains recommendations related to Power Management Sleep mode.

This Group Policy section is provided by the Group Policy template `Power.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.34.6.1 (L2) Ensure 'Allow network connectivity during connected-standby (on battery)' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting allows you to control the network connectivity state in standby on modern standby-capable systems.

The recommended state for this setting is: `Disabled`.

Rationale:

Disabling this setting ensures that the computer will not be accessible to attackers over a WLAN network while left unattended, on battery and in a sleep state.

Impact:

Network connectivity in standby (while on battery) is not guaranteed. This connectivity restriction currently only applies to WLAN networks only, but is subject to change (according to Microsoft).

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Power\PowerSettings\f15576e8-98b7-4186-b944-eafa664402d9:DCSettingIndex`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\System\Power Management\Sleep Settings\Allow network connectivity during connected-standby (on battery)

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template Power.admx/adml that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

Default Value:

Enabled. (Network connectivity will be maintained in standby while on battery.)

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.8.34.6.2 (L2) Ensure 'Allow network connectivity during connected-standby (plugged in)' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting allows you to control the network connectivity state in standby on modern standby-capable systems.

The recommended state for this setting is: Disabled.

Rationale:

Disabling this setting ensures that the computer will not be accessible to attackers over a WLAN network while left unattended, plugged in and in a sleep state.

Impact:

Network connectivity in standby (while plugged in) is not guaranteed. This connectivity restriction currently only applies to WLAN networks only, but is subject to change (according to Microsoft).

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Power\PowerSettings\f15576e8-98b7-4186-b944-eafa664402d9:ACSettingIndex

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\System\Power Management\Sleep Settings\Allow network connectivity during connected-standby (plugged in)

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template Power.admx/adml that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

Default Value:

Enabled. (Network connectivity will be maintained in standby while plugged in.)

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.8.34.6.3 (L1) Ensure 'Require a password when a computer wakes (on battery)' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Member Server
- Level 3 - STIG Domain Controller

Description:

Specifies whether or not the user is prompted for a password when the system resumes from sleep.

The recommended state for this setting is: Enabled.

Rationale:

Enabling this setting ensures that anyone who wakes an unattended computer from sleep state will have to provide logon credentials before they can access the system.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Power\PowerSettings\0e796bdb-100d-47d6-a2d5-f7d2daa51f51:DCSettingIndex

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Power Management\Sleep Settings\Require a password when a computer wakes (on battery)

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template Power.admx/adml that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Enabled. (The user is prompted for a password when the system resumes from sleep while on battery.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73537
Rule ID: SV-88197r1_rule
STIG ID: WN16-CC-000210
Severity: CAT II

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

18.8.34.6.4 (L1) Ensure 'Require a password when a computer wakes (plugged in)' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Specifies whether or not the user is prompted for a password when the system resumes from sleep.

The recommended state for this setting is: Enabled.

Rationale:

Enabling this setting ensures that anyone who wakes an unattended computer from sleep state will have to provide logon credentials before they can access the system.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Power\PowerSettings\0e796bdb-100d-47d6-a2d5-f7d2daa51f51:ACSettingIndex

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Power Management\Sleep Settings\Require a password when a computer wakes (plugged in)

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template Power.admx/adml that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Enabled. (The user is prompted for a password when the system resumes from sleep while plugged in.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73539
Rule ID: SV-88201r1_rule
STIG ID: WN16-CC-000220
Severity: CAT II

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

18.8.35 Recovery

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template ReAgent.admx/adml that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

18.8.36 Remote Assistance

This section contains recommendations related to Remote Assistance.

This Group Policy section is provided by the Group Policy template `RemoteAssistance.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.36.1 (L1) Ensure 'Configure Offer Remote Assistance' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to turn on or turn off Offer (Unsolicited) Remote Assistance on this computer.

Help desk and support personnel will not be able to proactively offer assistance, although they can still respond to user assistance requests.

The recommended state for this setting is: `Disabled`.

Rationale:

A user might be tricked and accept an unsolicited Remote Assistance offer from a malicious user.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\Terminal Services:fAllowUnsolicited
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

```
Computer Configuration\Policies\Administrative Templates\System\Remote Assistance\Configure Offer Remote Assistance
```

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `RemoteAssistance.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Disabled. (Users on this computer cannot get help from their corporate technical support staff using Offer (Unsolicited) Remote Assistance.)

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

18.8.36.2 (L1) Ensure 'Configure Solicited Remote Assistance' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Member Server
- Level 3 - STIG Domain Controller

Description:

This policy setting allows you to turn on or turn off Solicited (Ask for) Remote Assistance on this computer.

The recommended state for this setting is: `Disabled`.

Rationale:

There is slight risk that a rogue administrator will gain access to another user's desktop session, however, they cannot connect to a user's computer unannounced or control it without permission from the user. When an expert tries to connect, the user can still choose to deny the connection or give the expert view-only privileges. The user must explicitly click the Yes button to allow the expert to remotely control the workstation.

Impact:

Users on this computer cannot use e-mail or file transfer to ask someone for help. Also, users cannot use instant messaging programs to allow connections to this computer.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\Terminal Services:fAllowToGetHelp

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\System\Remote Assistance\Configure Solicited Remote Assistance

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `RemoteAssistance.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Users can turn on or turn off Solicited (Ask for) Remote Assistance themselves in System Properties in Control Panel. Users can also configure Remote Assistance settings.

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

18.8.37 Remote Procedure Call

This section contains recommendations related to Remote Procedure Call.

This Group Policy section is provided by the Group Policy template `RPC.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.37.1 (L1) Ensure 'Enable RPC Endpoint Mapper Client Authentication' is set to 'Enabled' (MS only) (Automated)

Profile Applicability:

- Level 1 - Member Server
- Level 3 - STIG Member Server

Description:

This policy setting controls whether RPC clients authenticate with the Endpoint Mapper Service when the call they are making contains authentication information. The Endpoint Mapper Service on computers running Windows NT4 (all service packs) cannot process authentication information supplied in this manner. This policy setting can cause a specific issue with 1-way forest trusts if it is applied to the *trusting* domain DCs (see Microsoft [KB3073942](#)), so we do not recommend applying it to Domain Controllers.

Note: This policy will not be in effect until the system is rebooted.

The recommended state for this setting is: Enabled.

Rationale:

Anonymous access to RPC services could result in accidental disclosure of information to unauthenticated users.

Impact:

RPC clients will authenticate to the Endpoint Mapper Service for calls that contain authentication information. Clients making such calls will not be able to communicate with the Windows NT4 Server Endpoint Mapper Service.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\Rpc :EnableAuthEpResolution

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Remote Procedure Call\Enable RPC Endpoint Mapper Client Authentication

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `RPC.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Disabled. (RPC clients will not authenticate to the Endpoint Mapper Service, but they will be able to communicate with the Windows NT4 Server Endpoint Mapper Service.)

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

18.8.37.2 (L2) Ensure 'Restrict Unauthenticated RPC clients' is set to 'Enabled: Authenticated' (MS only) (Automated)

Profile Applicability:

- Level 2 - Member Server
- Level 3 - STIG Member Server

Description:

This policy setting controls how the RPC server runtime handles unauthenticated RPC clients connecting to RPC servers.

This policy setting impacts all RPC applications. In a domain environment this policy setting should be used with caution as it can impact a wide range of functionality including group policy processing itself. Reverting a change to this policy setting can require manual intervention on each affected machine. **This policy setting should never be applied to a Domain Controller.**

A client will be considered an authenticated client if it uses a named pipe to communicate with the server or if it uses RPC Security. RPC Interfaces that have specifically requested to be accessible by unauthenticated clients may be exempt from this restriction, depending on the selected value for this policy setting.

-- "**None**" allows all RPC clients to connect to RPC Servers running on the machine on which the policy setting is applied.

-- "**Authenticated**" allows only authenticated RPC Clients (per the definition above) to connect to RPC Servers running on the machine on which the policy setting is applied. Exemptions are granted to interfaces that have requested them.

-- "**Authenticated without exceptions**" allows only authenticated RPC Clients (per the definition above) to connect to RPC Servers running on the machine on which the policy setting is applied. No exceptions are allowed. **This value has the potential to cause serious problems and is not recommended.**

Note: This policy setting will not be applied until the system is rebooted.

The recommended state for this setting is: Enabled: Authenticated.

Rationale:

Unauthenticated RPC communication can create a security vulnerability.

Impact:

Only authenticated RPC Clients will be allowed to connect to RPC servers running on the machine on which the policy setting is applied. Exemptions are granted to interfaces that have requested them.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows  
NT\Rpc:RestrictRemoteClients
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:
Authenticated:

```
Computer Configuration\Policies\Administrative Templates\System\Remote  
Procedure Call\Restrict Unauthenticated RPC clients
```

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `RPC.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Enabled: None. (All RPC clients are allowed to connect to RPC servers running on the machine.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73541
Rule ID: SV-88203r1_rule
STIG ID: WN16-MS-000040
Severity: CAT II

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

18.8.38 Removable Storage Access

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `RemovableStorage.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.39 Scripts

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Scripts.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.40 Server Manager

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `ServerManager.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.41 Service Control Manager Settings

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `ServiceControlManager.admx/adml` that is included with the Microsoft Windows 10 Release 1903 Administrative Templates (or newer).

18.8.42 Shutdown

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WinInit.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.8.43 Shutdown Options

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Winsrv.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.44 Storage Health

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `StorageHealth.admx/adml` that is included with the Microsoft Windows 10 Release 1709 Administrative Templates (or newer).

18.8.45 Storage Sense

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `StorageSense.admx/adml` that is included with the Microsoft Windows 10 Release 1903 Administrative Templates (or newer).

18.8.46 System Restore

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `SystemRestore.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.47 Troubleshooting and Diagnostics

This section contains recommendations related to Troubleshooting and Diagnostics.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.47.1 Application Compatibility Diagnostics

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `pca.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.47.2 Corrupted File Recovery

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `FileRecovery.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.47.3 Disk Diagnostic

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `DiskDiagnostic.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.47.4 Fault Tolerant Heap

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `fthsrv.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

18.8.47.5 Microsoft Support Diagnostic Tool

This section contains recommendations related to the Microsoft Support Diagnostic Tool.

This Group Policy section is provided by the Group Policy template `MSDT.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.47.5.1 (L2) Ensure 'Microsoft Support Diagnostic Tool: Turn on MSDT interactive communication with support provider' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting configures Microsoft Support Diagnostic Tool (MSDT) interactive communication with the support provider. MSDT gathers diagnostic data for analysis by support professionals.

The recommended state for this setting is: Disabled.

Rationale:

Due to privacy concerns, data should never be sent to any 3rd party since this data could contain sensitive information.

Impact:

MSDT cannot run in support mode, and no data can be collected or sent to the support provider.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\ScriptedDiagnosticsProvider\Policy:DisableQueryRemoteServer`

Remediation:

To establish the recommended configuration via GP, set the following UI path to **Disabled**:

Computer Configuration\Policies\Administrative
Templates\System\Troubleshooting and Diagnostics\Microsoft Support Diagnostic
Tool\Microsoft Support Diagnostic Tool: Turn on MSDT interactive
communication with support provider

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `MSDT.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Enabled. (Users can use MSDT to collect and send diagnostic data to a support professional to resolve a problem. By default, the support provider is set to Microsoft Corporation.)

CIS Controls:

Version 7

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.8.47.6 MSI Corrupted File Recovery

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Msi-FileRecovery.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

18.8.47.7 Scheduled Maintenance

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `sdiagschd.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

18.8.47.8 Scripted Diagnostics

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `sdiageng.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

18.8.47.9 Windows Boot Performance Diagnostics

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `PerformanceDiagnostics.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.47.10 Windows Memory Leak Diagnosis

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `LeakDiagnostic.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.47.11 Windows Performance PerfTrack

This section contains recommendations related to Windows Performance PerfTrack.

This Group Policy section is provided by the Group Policy template `PerformancePerftrack.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

18.8.47.11.1 (L2) Ensure 'Enable/Disable PerfTrack' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting specifies whether to enable or disable tracking of responsiveness events.

The recommended state for this setting is: `Disabled`.

Rationale:

When enabled the aggregated data of a given event will be transmitted to Microsoft. The option exists to restrict this feature for a specific user, set the consent level, and designate specific programs for which error reports could be sent. However, centrally restricting the ability to execute PerfTrack to limit the potential for unauthorized or undesired usage, data leakage, or unintentional communications is highly recommended.

Impact:

Responsiveness events are not processed.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WDI\{9c5a40da-b965-4fc3-8781-88dd50a6299d}:ScenarioExecutionEnabled`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative
Templates\System\Troubleshooting and Diagnostics\Windows Performance
PerfTrack\Enable/Disable PerfTrack

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `PerformancePerftrack.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

Default Value:

Enabled. (Responsiveness events are processed and aggregated. The aggregated data will be transmitted to Microsoft through SQM.)

CIS Controls:

Version 7

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.8.48 Trusted Platform Module Services

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `TPM.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.49 User Profiles

This section contains recommendations related to User Profiles.

This Group Policy section is provided by the Group Policy template `UserProfiles.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.49.1 (L2) Ensure 'Turn off the advertising ID' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting turns off the advertising ID, preventing apps from using the ID for experiences across apps.

The recommended state for this setting is: Enabled.

Rationale:

Tracking user activity for advertising purposes, even anonymously, may be a privacy concern. In an enterprise managed environment, applications should not need or require tracking for targeted advertising.

Impact:

The advertising ID is turned off. Apps can't use the ID for experiences across apps.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\AdvertisingInfo:DisabledByGroupPolicy`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\User Profiles\Turn off the advertising ID

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template UserProfiles.admx/adml that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

Default Value:

Disabled. (Users can control whether apps can use the advertising ID for experiences across apps.)

CIS Controls:

Version 7

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.8.50 Windows File Protection

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template WindowsFileProtection.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.51 Windows HotStart

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template HotStart.admx/adml that is only included with the Microsoft Windows Vista through the Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

18.8.52 Windows Time Service

This section contains recommendations related to the Windows Time Service.

This Group Policy section is provided by the Group Policy template `W32Time.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.52.1 Time Providers

This section contains recommendations related to Time Providers.

This Group Policy section is provided by the Group Policy template `W32Time.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.8.52.1.1 (L2) Ensure 'Enable Windows NTP Client' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting specifies whether the Windows NTP Client is enabled. Enabling the Windows NTP Client allows your computer to synchronize its computer clock with other NTP servers. You might want to disable this service if you decide to use a third-party time provider.

The recommended state for this setting is: `Enabled`.

Rationale:

A reliable and accurate account of time is important for a number of services and security requirements, including but not limited to distributed applications, authentication services, multi-user databases and logging services. The use of an NTP client (with secure operation) establishes functional accuracy and is a focal point when reviewing security relevant events

Impact:

You can set the local computer clock to synchronize time with NTP servers.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\W32Time\TimeProviders\NtpClient:Enabled

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\System\Windows Time Service\Time Providers\Enable Windows NTP Client

Note: This Group Policy path is provided by the Group Policy template W32Time.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (The local computer clock does not synchronize time with NTP servers.)

CIS Controls:

Version 7

6.1 Utilize Three Synchronized Time Sources

Use at least three synchronized time sources from which all servers and network devices retrieve time information on a regular basis so that timestamps in logs are consistent.

18.8.52.1.2 (L2) Ensure 'Enable Windows NTP Server' is set to 'Disabled' (MS only) (Automated)

Profile Applicability:

- Level 2 - Member Server

Description:

This policy setting allows you to specify whether the Windows NTP Server is enabled.

The recommended state for this setting is: **Disabled**.

Note: In most enterprise managed environments, you should *not* disable the Windows NTP Server on Domain Controllers, as it is very important for the operation of NT5DS (domain hierarchy-based) time synchronization.

Rationale:

The configuration of proper time synchronization is critically important in an enterprise managed environment both due to the sensitivity of Kerberos authentication timestamps and also to ensure accurate security logging.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\W32Time\TimeProviders\NtpServer:Enabled

Remediation:

To establish the recommended configuration via GP, set the following UI path to **Disabled**:

Computer Configuration\Policies\Administrative Templates\System\Windows Time Service\Time Providers\Enable Windows NTP Server

Note: This Group Policy path is provided by the Group Policy template `W32Time.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (The computer cannot service NTP requests from other computers.)

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

18.9 Windows Components

This section contains recommendations for Windows Component settings.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.1 Active Directory Federation Services

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `adfs.admx/adml` that is only included with the Microsoft Windows Vista through the Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

18.9.2 ActiveX Installer Service

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `ActiveXInstallService.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.3 Add features to Windows 8 / 8.1 / 10 (formerly Windows Anytime Upgrade)

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsAnytimeUpgrade.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

Note: This section was initially named *Windows Anytime Upgrade* but was renamed by Microsoft to *Add features to Windows x* starting with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

18.9.4 App Package Deployment

This section contains recommendations for App Package Deployment settings.

This Group Policy section is provided by the Group Policy template `AppxPackageManager.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.9.4.1 (L2) Ensure 'Allow a Windows app to share application data between users' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

Manages a Windows app's ability to share data between users who have installed the app. Data is shared through the `SharedLocal` folder. This folder is available through the `Windows.Storage` API.

The recommended state for this setting is: `Disabled`.

Rationale:

Users of a system could accidentally share sensitive data with other users on the same system.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\CurrentVersion\AppMode  
1\StateManager:AllowSharedLocalAppData
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to **Disabled**:

Computer Configuration\Policies\Administrative Templates\Windows Components\App Package Deployment\Allow a Windows app to share application data between users

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `AppxPackageManager.admx/adml` that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

Default Value:

Disabled. (Windows apps won't be able to share app data with other instances of that app.)

CIS Controls:

Version 7

14.6 Protect Information through Access Control Lists

Protect all information stored on systems with file system, network share, claims, application, or database specific access control lists. These controls will enforce the principle that only authorized individuals should have access to the information based on their need to access the information as a part of their responsibilities.

18.9.5 App Privacy

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `AppPrivacy.admx/adml` that is included with the Microsoft Windows 10 Release 1511 Administrative Templates (or newer).

18.9.6 App runtime

This section contains recommendations for App runtime settings.

This Group Policy section is provided by the Group Policy template `AppXRuntime.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.9.6.1 (L1) Ensure 'Allow Microsoft accounts to be optional' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting lets you control whether Microsoft accounts are optional for Windows Store apps that require an account to sign in. This policy only affects Windows Store apps that support it.

The recommended state for this setting is: `Enabled`.

Rationale:

Enabling this setting allows an organization to use their enterprise user accounts instead of using their Microsoft accounts when accessing Windows store apps. This provides the organization with greater control over relevant credentials. Microsoft accounts cannot be centrally managed and as such enterprise credential security policies cannot be applied to them, which could put any information accessed by using Microsoft accounts at risk.

Impact:

Windows Store apps that typically require a Microsoft account to sign in will allow users to sign in with an enterprise account instead.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System:
MSAOptional

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\App runtime\Allow Microsoft accounts to be optional

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template AppXRuntime.admx/adml that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

Default Value:

Disabled. (Users will need to sign in with a Microsoft account.)

CIS Controls:

Version 7

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

18.9.7 Application Compatibility

This section contains recommendations for Application Compatibility.

This Group Policy section is provided by the Group Policy template `AppCompat.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.7.1 (L3) Ensure 'Turn off Inventory Collector' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting inventories applications, files, devices, and drivers on the system and sends the information to Microsoft. This information is used to help diagnose compatibility problems.

The recommended state for this setting is: `Enabled`.

Rationale:

Sending any data to a 3rd party vendor is a security concern and should only be done on an as needed basis.

Impact:

Applications, files, devices, and drivers inventories will not be sent to Microsoft.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\AppCompat:DisableInventory`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Application Compatibility\Turn off Inventory Collector

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template AppCompat.admx/adml that is included with the Microsoft Windows 7 & Server 2008R2 Administrative Templates (or newer).

Default Value:

Enabled - If this policy setting is enabled or not configured, the inventory collector will be turned on.

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73543
Rule ID: SV-88207r1_rule
STIG ID: WN16-CC-000240
Severity: CAT IIII

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

18.9.8 AutoPlay Policies

This section contains recommendations for AutoPlay policies.

This Group Policy section is provided by the Group Policy template `AutoPlay.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.8.1 (L1) Ensure 'Disallow Autoplay for non-volume devices' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting disallows AutoPlay for MTP devices like cameras or phones.

The recommended state for this setting is: `Enabled`.

Rationale:

An attacker could use this feature to launch a program to damage a client computer or data on the computer.

Impact:

AutoPlay will not be allowed for MTP devices like cameras or phones.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\Explorer:NoAutoplayforNonVolume`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\AutoPlay Policies\Disallow Autoplay for non-volume devices

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `AutoPlay.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Disabled. (AutoPlay is enabled for non-volume devices.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73545
Rule ID: SV-88209r1_rule
STIG ID: WN16-CC-000250
Severity: CAT I

CIS Controls:

Version 7

8.4 Configure Anti-Malware Scanning of Removable Devices

Configure devices so that they automatically conduct an anti-malware scan of removable media when inserted or connected.

8.5 Configure Devices Not To Auto-run Content

Configure devices to not auto-run content from removable media.

18.9.8.2 (L1) Ensure 'Set the default behavior for AutoRun' is set to 'Enabled: Do not execute any autorun commands' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting sets the default behavior for Autorun commands. Autorun commands are generally stored in `autorun.inf` files. They often launch the installation program or other routines.

The recommended state for this setting is: Enabled: Do not execute any autorun commands.

Rationale:

Prior to Windows Vista, when media containing an autorun command is inserted, the system will automatically execute the program without user intervention. This creates a major security concern as code may be executed without user's knowledge. The default behavior starting with Windows Vista is to prompt the user whether autorun command is to be run. The autorun command is represented as a handler in the Autoplay dialog.

Impact:

AutoRun commands will be completely disabled.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\Explore
r:NoAutorun

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Do not execute any autorun commands:

Computer Configuration\Policies\Administrative Templates\Windows Components\AutoPlay Policies\Set the default behavior for AutoRun

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `AutoPlay.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Disabled. (Windows will prompt the user whether autorun command is to be run.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73547
Rule ID: SV-88211r1_rule
STIG ID: WN16-CC-000260
Severity: CAT I

CIS Controls:

Version 7

8.4 Configure Anti-Malware Scanning of Removable Devices

Configure devices so that they automatically conduct an anti-malware scan of removable media when inserted or connected.

8.5 Configure Devices Not To Auto-run Content

Configure devices to not auto-run content from removable media.

18.9.8.3 (L1) Ensure 'Turn off Autoplay' is set to 'Enabled: All drives' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Autoplay starts to read from a drive as soon as you insert media in the drive, which causes the setup file for programs or audio media to start immediately. An attacker could use this feature to launch a program to damage the computer or data on the computer. Autoplay is disabled by default on some removable drive types, such as floppy disk and network drives, but not on CD-ROM drives.

Note: You cannot use this policy setting to enable Autoplay on computer drives in which it is disabled by default, such as floppy disk and network drives.

The recommended state for this setting is: Enabled: All drives.

Rationale:

An attacker could use this feature to launch a program to damage a client computer or data on the computer.

Impact:

Autoplay will be disabled - users will have to manually launch setup or installation programs that are provided on removable media.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\Explore
r:NoDriveTypeAutoRun

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:
All drives:

Computer Configuration\Policies\Administrative Templates\Windows Components\AutoPlay Policies\Turn off Autoplay

Note: This Group Policy path is provided by the Group Policy template AutoPlay.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Autoplay is enabled.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73549
Rule ID: SV-88213r1_rule
STIG ID: WN16-CC-000270
Severity: CAT I

CIS Controls:

Version 7

8.4 Configure Anti-Malware Scanning of Removable Devices

Configure devices so that they automatically conduct an anti-malware scan of removable media when inserted or connected.

8.5 Configure Devices Not To Auto-run Content

Configure devices to not auto-run content from removable media.

18.9.9 Backup

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `UserDataBackup.admx/adml` that is only included with the Microsoft Windows Vista through the Windows 10 Release 1511 Administrative Templates (except for the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates).

18.9.10 Biometrics

This section contains recommendations related to Biometrics.

This Group Policy section is provided by the Group Policy template `Biometrics.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

18.9.10.1 Facial Features

This section contains recommendations related to Facial Feature Biometrics.

This Group Policy section is provided by the Group Policy template `Biometrics.admx/adml` that is included with the Microsoft Windows 10 Release 1511 Administrative Templates (or newer).

18.9.10.1.1 (L1) Ensure 'Configure enhanced anti-spoofing' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether enhanced anti-spoofing is configured for devices which support it.

The recommended state for this setting is: Enabled.

Rationale:

Enterprise managed environments are now supporting a wider range of mobile devices, increasing the security on these devices will help protect against unauthorized access on your network.

Impact:

Windows will require all users on the device to use anti-spoofing for facial features, on devices which support it.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Biometrics\FacialFeatures:EnhancedAntiSpoofing

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Biometrics\Facial Features\Configure enhanced anti-spoofing

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template Biometrics.admx/adml that is included with the Microsoft Windows 10 Release 1511 Administrative Templates (or newer).

Note #2: In the Windows 10 Release 1511 and Windows 10 Release 1607 & Server 2016 Administrative Templates, this setting was initially named *Use enhanced anti-spoofing when available*. It was renamed to *Configure enhanced anti-spoofing* starting with the Windows 10 Release 1703 Administrative Templates.

Default Value:

Users are able to choose whether or not to use enhanced anti-spoofing on supported devices.

CIS Controls:

Version 7

16.2 Configure Centralized Point of Authentication

Configure access for all accounts through as few centralized points of authentication as possible, including network, security, and cloud systems.

18.9.11 BitLocker Drive Encryption

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `VolumeEncryption.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.12 Camera

This section contains recommendations related to Camera.

This Group Policy section is provided by the Group Policy template `Camera.admx/adml` that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

18.9.12.1 (L2) Ensure 'Allow Use of Camera' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting controls whether the use of Camera devices on the machine are permitted.

The recommended state for this setting is: `Disabled`.

Rationale:

Cameras in a high security environment can pose serious privacy and data exfiltration risks - they should be disabled to help mitigate that risk.

Impact:

Users will not be able to utilize the camera on a system.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Camera:AllowCamera`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Camera\Allow Use of Camera

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template Camera.admx/adml that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

Default Value:

Enabled. (Camera devices are enabled.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

18.9.13 Cloud Content

This section contains recommendations related to Cloud Content.

This Group Policy section is provided by the Group Policy template `CloudContent.admx/adml` that is included with the Microsoft Windows 10 Release 1511 Administrative Templates (or newer).

18.9.13.1 (L1) Ensure 'Turn off Microsoft consumer experiences' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting turns off experiences that help consumers make the most of their devices and Microsoft account.

The recommended state for this setting is: `Enabled`.

Note: [Per Microsoft TechNet](#), this policy setting only applies to Windows 10 Enterprise and Windows 10 Education editions.

Rationale:

Having apps silently install in an enterprise managed environment is not good security practice - especially if the apps send data back to a 3rd party.

Impact:

Users will no longer see personalized recommendations from Microsoft and notifications about their Microsoft account.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\CloudContent:DisableWindowsConsumerFeatures

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Cloud Content\Turn off Microsoft consumer experiences

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template CloudContent.admx/adml that is included with the Microsoft Windows 10 Release 1511 Administrative Templates (or newer).

Default Value:

Disabled. (Users may see suggestions from Microsoft and notifications about their Microsoft account.)

CIS Controls:

Version 7

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.9.14 Connect

This section contains recommendations related to Connect.

This Group Policy section is provided by the Group Policy template `WirelessDisplay.admx/adml` that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

18.9.14.1 (L1) Ensure 'Require pin for pairing' is set to 'Enabled: First Time' OR 'Enabled: Always' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls whether or not a PIN is required for pairing to a wireless display device.

The recommended state for this setting is: Enabled: First Time OR Enabled: Always.

Rationale:

If this setting is not configured or disabled then a PIN would not be required when pairing wireless display devices to the system, increasing the risk of unauthorized use.

Impact:

The pairing ceremony for connecting to new wireless display devices will always require a PIN.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\Connect:RequirePinForPairing`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:
First Time OR Enabled: Always:

Computer Configuration\Policies\Administrative Templates\Windows Components\Connect\Require pin for pairing

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `WirelessDisplay.admx/adml` that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

Default Value:

Disabled. (A PIN is not required for pairing to a wireless display device.)

CIS Controls:

Version 7

15.9 Disable Wireless Peripheral Access of Devices

Disable wireless peripheral access of devices (such as Bluetooth and NFC), unless such access is required for a business purpose.

18.9.15 Credential User Interface

This section contains recommendations related to the Credential User Interface.

This Group Policy section is provided by the Group Policy template `CredUI.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.15.1 (L1) Ensure 'Do not display the password reveal button' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to configure the display of the password reveal button in password entry user experiences.

The recommended state for this setting is: `Enabled`.

Rationale:

This is a useful feature when entering a long and complex password, especially when using a touchscreen. The potential risk is that someone else may see your password while surreptitiously observing your screen.

Impact:

The password reveal button will not be displayed after a user types a password in the password entry text box.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\CredUI:DisablePasswordReveal`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

```
Computer Configuration\Policies\Administrative Templates\Windows Components\Credential User Interface\Do not display the password reveal button
```

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `CredUI.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Disabled. (The password reveal button is displayed after a user types a password in the password entry text box. If the user clicks on the button, the typed password is displayed on-screen in plain text.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

18.9.15.2 (L1) Ensure 'Enumerate administrator accounts on elevation' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls whether administrator accounts are displayed when a user attempts to elevate a running application.

The recommended state for this setting is: Disabled.

Rationale:

Users could see the list of administrator accounts, making it slightly easier for a malicious user who has logged onto a console session to try to crack the passwords of those accounts.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\CredUI:  
EnumerateAdministrators
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Credential User Interface\Enumerate administrator accounts on elevation

Note: This Group Policy path is provided by the Group Policy template CredUI.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Users will be required to always type in a username and password to elevate.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73487
Rule ID: SV-88139r1_rule
STIG ID: WN16-CC-000280
Severity: CAT II

CIS Controls:

Version 7

4.5 Use Multifactor Authentication For All Administrative Access

Use multi-factor authentication and encrypted channels for all administrative account access.

18.9.16 Data Collection and Preview Builds

This section contains settings for Data Collection and Preview Builds.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

18.9.16.1 (L1) Ensure 'Allow Telemetry' is set to 'Enabled: 0 - Security [Enterprise Only]' or 'Enabled: 1 - Basic' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines the amount of diagnostic and usage data reported to Microsoft:

- A value of `0 - Security [Enterprise Only]` will send minimal data to Microsoft. This data includes Malicious Software Removal Tool (MSRT) & Windows Defender data, if enabled, and telemetry client settings. Setting a value of 0 applies to enterprise, EDU, IoT and server devices only. Setting a value of 0 for other devices is equivalent to choosing a value of 1.
- A value of `1 - Basic` sends only a basic amount of diagnostic and usage data. Note that setting values of 0 or 1 will degrade certain experiences on the device.
- A value of `2 - Enhanced` sends enhanced diagnostic and usage data.
- A value of `3 - Full` sends the same data as a value of 2, plus additional diagnostics data, including the files and content that may have caused the problem.

Windows 10 telemetry settings apply to the Windows operating system and some first party apps. This setting does not apply to third party apps running on Windows 10.

The recommended state for this setting is: Enabled: 0 - Security [Enterprise Only] or Enabled: 1 - Basic.

Note: If the *Allow Telemetry* setting is configured to 0 - Security [Enterprise Only], then the options in Windows Update to defer upgrades and updates will have no effect.

Note #2: In the Microsoft Windows 10 RTM (Release 1507) Administrative Templates, the zero value was initially named 0 - Off [Enterprise Only], but it was renamed to 0 - Security [Enterprise Only] starting with the Windows 10 Release 1511 Administrative Templates.

Rationale:

Sending any data to a 3rd party vendor is a security concern and should only be done on an as needed basis.

Impact:

Note that setting values of 0 or 1 will degrade certain experiences on the device.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\DataCollection:AllowTelemetry
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled: 0 - Security [Enterprise Only] or Enabled: 1 - Basic:

```
Computer Configuration\Policies\Administrative Templates\Windows Components\Data Collection and Preview Builds\Allow Telemetry
```

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template DataCollection.admx/adml that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

Default Value:

Disabled. (Users can configure the Telemetry level in Settings.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73551
Rule ID: SV-88215r1_rule
STIG ID: WN16-CC-000290
Severity: CAT II

CIS Controls:

Version 7

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.9.16.2 (L2) Ensure 'Configure Authenticated Proxy usage for the Connected User Experience and Telemetry service' is set to 'Enabled: Disable Authenticated Proxy usage' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting controls whether the Connected User Experience and Telemetry service can automatically use an authenticated proxy to send data back to Microsoft.

The recommended state for this setting is: Enabled: Disable Authenticated Proxy usage.

Rationale:

Sending any data to a 3rd party vendor is a security concern and should only be done on an as needed basis.

Impact:

The Connected User Experience and Telemetry service will be blocked from automatically using an authenticated proxy.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\DataCollection:DisableEnterpriseAuthProxy

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:
Disable Authenticated Proxy usage:

Computer Configuration\Policies\Administrative Templates\Windows Components\Data Collection and Preview Builds\Configure Authenticated Proxy usage for the Connected User Experience and Telemetry service

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template DataCollection.admx/adml that is included with the Microsoft Windows 10 Release 1703 Administrative Templates (or newer).

Default Value:

Disabled. (The Connected User Experience and Telemetry service will automatically use an authenticated proxy to send data back to Microsoft.)

CIS Controls:

Version 7

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.9.16.3 (L1) Ensure 'Do not show feedback notifications' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows an organization to prevent its devices from showing feedback questions from Microsoft.

The recommended state for this setting is: Enabled.

Rationale:

Users should not be sending any feedback to 3rd party vendors in an enterprise managed environment.

Impact:

Users will no longer see feedback notifications through the Windows Feedback app.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\DataCollection:DoNotShowFeedbackNotifications
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Data Collection and Preview Builds\Do not show feedback notifications

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template FeedbackNotifications.admx/adml that is included with the Microsoft Windows 10 Release 1511 Administrative Templates (or newer).

Default Value:

Disabled. (Users may see notifications through the Windows Feedback app asking users for feedback. Users can control how often they receive feedback questions.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

18.9.16.4 (L1) Ensure 'Toggle user control over Insider builds' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether users can access the Insider build controls in the Advanced Options for Windows Update. These controls are located under "Get Insider builds," and enable users to make their devices available for downloading and installing Windows preview software.

The recommended state for this setting is: `Disabled`.

Note: This policy setting applies only to devices running Windows Server 2016, up until Release 1703. For Release 1709 or newer, Microsoft encourages using the `Manage preview builds` setting (Rule 18.9.102.1.1). We have kept this setting in the benchmark to ensure that any older builds of Windows Server 2016 in the environment are still enforced.

Rationale:

It can be risky for experimental features to be allowed in an enterprise managed environment because this can introduce bugs and security holes into systems, making it easier for an attacker to gain access. It is generally preferred to only use production-ready builds.

Impact:

The item "Get Insider builds" will be unavailable.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\PreviewBuilds:AllowBuildPreview

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Data Collection and Preview Builds\Toggle user control over Insider builds

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template AllowBuildPreview.admx/adml that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

Default Value:

Enabled. (Users can download and install Windows preview software on their devices.)

CIS Controls:

Version 7

3.4 Deploy Automated Operating System Patch Management Tools

Deploy automated software update tools in order to ensure that the operating systems are running the most recent security updates provided by the software vendor.

18.9.17 Delivery Optimization

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `DeliveryOptimization.admx/adml` that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

18.9.18 Desktop Gadgets

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `sidebar.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

18.9.19 Desktop Window Manager

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `DWM.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.20 Device and Driver Compatibility

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `DeviceCompat.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.9.21 Device Registration (formerly Workplace Join)

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WorkplaceJoin.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

Note: This section was initially named *Workplace Join* but was renamed by Microsoft to *Device Registration* starting with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates.

18.9.22 Digital Locker

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `DigitalLocker.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.23 Edge UI

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `EdgeUI.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

18.9.24 EMET

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `EMET.admx/adml` that is included with Microsoft EMET.

EMET is free and supported security software developed by Microsoft that allows an enterprise to apply exploit mitigations to applications that run on Windows. Many of these mitigations were later coded directly into Windows 10 and Server 2016.

Note: Although EMET is quite effective at enhancing exploit protection on Windows server OSes prior to Server 2016, it is highly recommended that compatibility testing is done on typical server configurations (including all CIS-recommended EMET settings) before widespread deployment to your environment.

Note #2: EMET has been reported to be very problematic on 32-bit OSes - we only recommend using it with 64-bit OSes.

Note #3: Microsoft has announced that EMET will be End-Of-Life (EOL) on July 31, 2018. This does not mean the software will stop working, only that Microsoft will not update it any further past that date, nor troubleshoot new problems with it. They are instead recommending that servers be upgraded to Server 2016.

18.9.25 Event Forwarding

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `EventForwarding.admx/adml` that is included with the Microsoft Windows Server 2008 (non-R2) Administrative Templates (or newer).

18.9.26 Event Log Service

This section contains recommendations for configuring the Event Log Service.

This Group Policy section is provided by the Group Policy template `EventLog.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.26.1 Application

This section contains recommendations for configuring the Application Event Log.

This Group Policy section is provided by the Group Policy template `EventLog.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.26.1.1 (L1) Ensure 'Application: Control Event Log behavior when the log file reaches its maximum size' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls Event Log behavior when the log file reaches its maximum size.

The recommended state for this setting is: `Disabled`.

Note: Old events may or may not be retained according to the *Backup log automatically when full* policy setting.

Rationale:

If new events are not recorded it may be difficult or impossible to determine the root cause of system problems or the unauthorized activities of malicious users.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\EventLog\Application:Retention`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Event Log Service\Application\Control Event Log behavior when the log file reaches its maximum size

Note: This Group Policy path is provided by the Group Policy template `EventLog.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Note #2: In older Microsoft Windows Administrative Templates, this setting was initially named *Retain old events*, but it was renamed starting with the Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

Default Value:

Disabled. (When a log file reaches its maximum size, new events overwrite old events.)

CIS Controls:

Version 7

6.4 Ensure adequate storage for logs

Ensure that all systems that store logs have adequate storage space for the logs generated.

18.9.26.1.2 (L1) Ensure 'Application: Specify the maximum log file size (KB)' is set to 'Enabled: 32,768 or greater' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting specifies the maximum size of the log file in kilobytes. The maximum log file size can be configured between 1 megabyte (1,024 kilobytes) and 4 terabytes (4,194,240 kilobytes) in kilobyte increments.

The recommended state for this setting is: Enabled: 32,768 or greater.

Rationale:

If events are not recorded it may be difficult or impossible to determine the root cause of system problems or the unauthorized activities of malicious users.

Impact:

When event logs fill to capacity, they will stop recording information unless the retention method for each is set so that the computer will overwrite the oldest entries with the most recent ones. To mitigate the risk of loss of recent data, you can configure the retention method so that older events are overwritten as needed.

The consequence of this configuration is that older events will be removed from the logs. Attackers can take advantage of such a configuration, because they can generate a large number of extraneous events to overwrite any evidence of their attack. These risks can be somewhat reduced if you automate the archival and backup of event log data.

Ideally, all specifically monitored events should be sent to a server that uses Microsoft System Center Operations Manager (SCOM) or some other automated monitoring tool. Such a configuration is particularly important because an attacker who successfully compromises a server could clear the Security log. If all events are sent to a monitoring server, then you will be able to gather forensic information about the attacker's activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\EventLog\Application:MaxSize

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled: 32,768 or greater:

Computer Configuration\Policies\Administrative Templates\Windows Components\Event Log Service\Application\Specify the maximum log file size (KB)

Note: This Group Policy path is provided by the Group Policy template EventLog.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Note #2: In older Microsoft Windows Administrative Templates, this setting was initially named *Maximum Log Size (KB)*, but it was renamed starting with the Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

Default Value:

Disabled. (The default log size is 20,480 KB - this value can be changed by the local administrator using the Log Properties dialog.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide: Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73553
Rule ID: SV-88217r1_rule
STIG ID: WN16-CC-000300
Severity: CAT II

CIS Controls:

Version 7

6.4 Ensure adequate storage for logs

Ensure that all systems that store logs have adequate storage space for the logs generated.

18.9.26.2 Security

This section contains recommendations for configuring the Security Event Log.

This Group Policy section is provided by the Group Policy template `EventLog.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.26.2.1 (L1) Ensure 'Security: Control Event Log behavior when the log file reaches its maximum size' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls Event Log behavior when the log file reaches its maximum size.

The recommended state for this setting is: `Disabled`.

Note: Old events may or may not be retained according to the *Backup log automatically when full* policy setting.

Rationale:

If new events are not recorded it may be difficult or impossible to determine the root cause of system problems or the unauthorized activities of malicious users.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\EventLog\Security:Retention`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Event Log Service\Security\Control Event Log behavior when the log file reaches its maximum size

Note: This Group Policy path is provided by the Group Policy template `EventLog.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Note #2: In older Microsoft Windows Administrative Templates, this setting was initially named *Retain old events*, but it was renamed starting with the Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

Default Value:

Disabled. (When a log file reaches its maximum size, new events overwrite old events.)

CIS Controls:

Version 7

6.4 Ensure adequate storage for logs

Ensure that all systems that store logs have adequate storage space for the logs generated.

18.9.26.2.2 (L1) Ensure 'Security: Specify the maximum log file size (KB)' is set to 'Enabled: 196,608 or greater' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting specifies the maximum size of the log file in kilobytes. The maximum log file size can be configured between 1 megabyte (1,024 kilobytes) and 4 terabytes (4,194,240 kilobytes) in kilobyte increments.

The recommended state for this setting is: Enabled: 196,608 or greater.

Rationale:

If events are not recorded it may be difficult or impossible to determine the root cause of system problems or the unauthorized activities of malicious users.

Impact:

When event logs fill to capacity, they will stop recording information unless the retention method for each is set so that the computer will overwrite the oldest entries with the most recent ones. To mitigate the risk of loss of recent data, you can configure the retention method so that older events are overwritten as needed.

The consequence of this configuration is that older events will be removed from the logs. Attackers can take advantage of such a configuration, because they can generate a large number of extraneous events to overwrite any evidence of their attack. These risks can be somewhat reduced if you automate the archival and backup of event log data.

Ideally, all specifically monitored events should be sent to a server that uses Microsoft System Center Operations Manager (SCOM) or some other automated monitoring tool. Such a configuration is particularly important because an attacker who successfully compromises a server could clear the Security log. If all events are sent to a monitoring server, then you will be able to gather forensic information about the attacker's activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\EventLog\Security:MaxSize

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled: 196,608 or greater:

Computer Configuration\Policies\Administrative Templates\Windows Components\Event Log Service\Security\Specify the maximum log file size (KB)

Note: This Group Policy path is provided by the Group Policy template EventLog.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Note #2: In older Microsoft Windows Administrative Templates, this setting was initially named *Maximum Log Size (KB)*, but it was renamed starting with the Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

Default Value:

Disabled. (The default log size is 20,480 KB - this value can be changed by the local administrator using the Log Properties dialog.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73555
Rule ID: SV-88219r1_rule
STIG ID: WN16-CC-000310
Severity: CAT II

CIS Controls:

Version 7

6.4 Ensure adequate storage for logs

Ensure that all systems that store logs have adequate storage space for the logs generated.

18.9.26.3 Setup

This section contains recommendations for configuring the Setup Event Log.

This Group Policy section is provided by the Group Policy template `EventLog.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.26.3.1 (L1) Ensure 'Setup: Control Event Log behavior when the log file reaches its maximum size' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls Event Log behavior when the log file reaches its maximum size.

The recommended state for this setting is: `Disabled`.

Note: Old events may or may not be retained according to the *Backup log automatically when full* policy setting.

Rationale:

If new events are not recorded it may be difficult or impossible to determine the root cause of system problems or the unauthorized activities of malicious users.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\EventLog\Setup:Retention`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Event Log Service\Setup\Control Event Log behavior when the log file reaches its maximum size

Note: This Group Policy path is provided by the Group Policy template `EventLog.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Note #2: In older Microsoft Windows Administrative Templates, this setting was initially named *Retain old events*, but it was renamed starting with the Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

Default Value:

Disabled. (When a log file reaches its maximum size, new events overwrite old events.)

CIS Controls:

Version 7

6.4 Ensure adequate storage for logs

Ensure that all systems that store logs have adequate storage space for the logs generated.

18.9.26.3.2 (L1) Ensure 'Setup: Specify the maximum log file size (KB)' is set to 'Enabled: 32,768 or greater' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting specifies the maximum size of the log file in kilobytes. The maximum log file size can be configured between 1 megabyte (1,024 kilobytes) and 4 terabytes (4,194,240 kilobytes) in kilobyte increments.

The recommended state for this setting is: Enabled: 32,768 or greater.

Rationale:

If events are not recorded it may be difficult or impossible to determine the root cause of system problems or the unauthorized activities of malicious users

Impact:

When event logs fill to capacity, they will stop recording information unless the retention method for each is set so that the computer will overwrite the oldest entries with the most recent ones. To mitigate the risk of loss of recent data, you can configure the retention method so that older events are overwritten as needed.

The consequence of this configuration is that older events will be removed from the logs. Attackers can take advantage of such a configuration, because they can generate a large number of extraneous events to overwrite any evidence of their attack. These risks can be somewhat reduced if you automate the archival and backup of event log data.

Ideally, all specifically monitored events should be sent to a server that uses Microsoft System Center Operations Manager (SCOM) or some other automated monitoring tool. Such a configuration is particularly important because an attacker who successfully compromises a server could clear the Security log. If all events are sent to a monitoring server, then you will be able to gather forensic information about the attacker's activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\EventLog\Setup:MaxSize

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled: 32,768 or greater:

Computer Configuration\Policies\Administrative Templates\Windows Components\Event Log Service\Setup\Specify the maximum log file size (KB)

Note: This Group Policy path is provided by the Group Policy template EventLog.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Note #2: In older Microsoft Windows Administrative Templates, this setting was initially named *Maximum Log Size (KB)*, but it was renamed starting with the Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

Default Value:

Disabled. (The default log size is 20,480 KB - this value can be changed by the local administrator using the Log Properties dialog.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73557
Rule ID: SV-88221r1_rule
STIG ID: WN16-CC-000320
Severity: CAT II

CIS Controls:

Version 7

6.4 Ensure adequate storage for logs

Ensure that all systems that store logs have adequate storage space for the logs generated.

18.9.26.4 System

This section contains recommendations for configuring the System Event Log.

This Group Policy section is provided by the Group Policy template `EventLog.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.26.4.1 (L1) Ensure 'System: Control Event Log behavior when the log file reaches its maximum size' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls Event Log behavior when the log file reaches its maximum size.

The recommended state for this setting is: `Disabled`.

Note: Old events may or may not be retained according to the *Backup log automatically when full* policy setting.

Rationale:

If new events are not recorded it may be difficult or impossible to determine the root cause of system problems or the unauthorized activities of malicious users.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\EventLog\System:Retention`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Event Log Service\System\Control Event Log behavior when the log file reaches its maximum size

Note: This Group Policy path is provided by the Group Policy template `EventLog.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Note #2: In older Microsoft Windows Administrative Templates, this setting was initially named *Retain old events*, but it was renamed starting with the Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

Default Value:

Disabled. (When a log file reaches its maximum size, new events overwrite old events.)

CIS Controls:

Version 7

6.4 Ensure adequate storage for logs

Ensure that all systems that store logs have adequate storage space for the logs generated.

18.9.26.4.2 (L1) Ensure 'System: Specify the maximum log file size (KB)' is set to 'Enabled: 32,768 or greater' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting specifies the maximum size of the log file in kilobytes. The maximum log file size can be configured between 1 megabyte (1,024 kilobytes) and 4 terabytes (4,194,240 kilobytes) in kilobyte increments.

The recommended state for this setting is: Enabled: 32,768 or greater.

Rationale:

If events are not recorded it may be difficult or impossible to determine the root cause of system problems or the unauthorized activities of malicious users

Impact:

When event logs fill to capacity, they will stop recording information unless the retention method for each is set so that the computer will overwrite the oldest entries with the most recent ones. To mitigate the risk of loss of recent data, you can configure the retention method so that older events are overwritten as needed.

The consequence of this configuration is that older events will be removed from the logs. Attackers can take advantage of such a configuration, because they can generate a large number of extraneous events to overwrite any evidence of their attack. These risks can be somewhat reduced if you automate the archival and backup of event log data.

Ideally, all specifically monitored events should be sent to a server that uses Microsoft System Center Operations Manager (SCOM) or some other automated monitoring tool. Such a configuration is particularly important because an attacker who successfully compromises a server could clear the Security log. If all events are sent to a monitoring server, then you will be able to gather forensic information about the attacker's activities.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\EventLog\System:MaxSize

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled: 32,768 or greater:

Computer Configuration\Policies\Administrative Templates\Windows Components\Event Log Service\System\Specify the maximum log file size (KB)

Note: This Group Policy path is provided by the Group Policy template EventLog.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Note #2: In older Microsoft Windows Administrative Templates, this setting was initially named *Maximum Log Size (KB)*, but it was renamed starting with the Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

Default Value:

Disabled. (The default log size is 20,480 KB - this value can be changed by the local administrator using the Log Properties dialog.)

CIS Controls:

Version 7

6.4 Ensure adequate storage for logs

Ensure that all systems that store logs have adequate storage space for the logs generated.

18.9.27 Event Logging

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `EventLogging.admx/adml` that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

18.9.28 Event Viewer

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `EventViewer.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.29 Family Safety (formerly Parental Controls)

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `ParentalControls.admx/adml` that is only included with the Microsoft Windows Vista through the Windows 10 RTM (Release 1507) Administrative Templates.

Note: This section was initially named *Parental Controls* but was renamed by Microsoft to *Family Safety* starting with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

18.9.30 File Explorer (formerly Windows Explorer)

This section contains recommendations to control the availability of options such as menu items and tabs in dialog boxes.

This Group Policy section is provided by the Group Policy template `WindowsExplorer.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Note: This section was initially named *Windows Explorer* but was renamed by Microsoft to *File Explorer* starting with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

18.9.30.1 Previous Versions

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `PreviousVersions.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.30.2 (L1) Ensure 'Turn off Data Execution Prevention for Explorer' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Disabling Data Execution Prevention can allow certain legacy plug-in applications to function without terminating Explorer.

The recommended state for this setting is: Disabled.

Note: Some legacy plug-in applications and other software may not function with Data Execution Prevention and will require an exception to be defined for that specific plug-in/software.

Rationale:

Data Execution Prevention is an important security feature supported by Explorer that helps to limit the impact of certain types of malware.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\Explorer>NoDataExecutionPrevention

Remediation:

To establish the recommended configuration via GP, set the following UI path to **Disabled**:

Computer Configuration\Policies\Administrative Templates\Windows Components\File Explorer\Turn off Data Execution Prevention for Explorer

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `Explorer.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

Default Value:

Disabled. (Data Execution Prevention will block certain types of malware from exploiting Explorer.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73561
Rule ID: SV-88225r1_rule
STIG ID: WN16-CC-000340
Severity: CAT II

CIS Controls:

Version 7

8.3 Enable Operating System Anti-Exploitation Features/ Deploy Anti-Exploit Technologies

Enable anti-exploitation features such as Data Execution Prevention (DEP) or Address Space Layout Randomization (ASLR) that are available in an operating system or deploy appropriate toolkits that can be configured to apply protection to a broader set of applications and executables.

18.9.30.3 (L1) Ensure 'Turn off heap termination on corruption' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Without heap termination on corruption, legacy plug-in applications may continue to function when a File Explorer session has become corrupt. Ensuring that heap termination on corruption is active will prevent this.

The recommended state for this setting is: Disabled.

Rationale:

Allowing an application to function after its session has become corrupt increases the risk posture to the system.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\Explorer>NoHeapTerminationOnCorruption

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\File Explorer\Turn off heap termination on corruption

Note: This Group Policy path is provided by the Group Policy template Explorer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Heap termination on corruption is enabled.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73563
Rule ID: SV-88227r1_rule
STIG ID: WN16-CC-000350
Severity: CAT III

CIS Controls:

Version 7

8.3 Enable Operating System Anti-Exploitation Features/ Deploy Anti-Exploit Technologies

Enable anti-exploitation features such as Data Execution Prevention (DEP) or Address Space Layout Randomization (ASLR) that are available in an operating system or deploy appropriate toolkits that can be configured to apply protection to a broader set of applications and executables.

18.9.30.4 (L1) Ensure 'Turn off shell protocol protected mode' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to configure the amount of functionality that the shell protocol can have. When using the full functionality of this protocol, applications can open folders and launch files. The protected mode reduces the functionality of this protocol allowing applications to only open a limited set of folders. Applications are not able to open files with this protocol when it is in the protected mode. It is recommended to leave this protocol in the protected mode to increase the security of Windows.

The recommended state for this setting is: Disabled.

Rationale:

Limiting the opening of files and folders to a limited set reduces the attack surface of the system.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\Explore
r:PreXPSP2ShellProtocolBehavior

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\File Explorer\Turn off shell protocol protected mode

Note: This Group Policy path is provided by the Group Policy template WindowsExplorer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (The protocol is in the protected mode, allowing applications to only open a limited set of folders.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73565
Rule ID: SV-88229r1_rule
STIG ID: WN16-CC-000360
Severity: CAT II

CIS Controls:

Version 7

8.3 Enable Operating System Anti-Exploitation Features/ Deploy Anti-Exploit Technologies

Enable anti-exploitation features such as Data Execution Prevention (DEP) or Address Space Layout Randomization (ASLR) that are available in an operating system or deploy appropriate toolkits that can be configured to apply protection to a broader set of applications and executables.

18.9.31 File History

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `FileHistory.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.9.32 Find My Device

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `FindMy.admx/adml` that is included with the Microsoft Windows 10 Release 1703 Administrative Templates (or newer).

18.9.33 Game Explorer

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `GameExplorer.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.34 Handwriting

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Handwriting.admx/adml` that is included with the Microsoft Windows 10 Release 1709 Administrative Templates (or newer).

18.9.35 HomeGroup

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Sharing.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

18.9.36 Import Video

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `CaptureWizard.admx/adml` that is only included with the Microsoft Windows Vista and Windows Server 2008 (non-R2) Administrative Templates.

18.9.37 Internet Explorer

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `InetRes.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.38 Internet Information Services

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `IIS.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.39 Location and Sensors

This section contains settings for Locations and Sensors.

This Group Policy section is provided by the Group Policy template `sensors.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

18.9.39.1 (L2) Ensure 'Turn off location' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting turns off the location feature for the computer.

The recommended state for this setting is: Enabled.

Rationale:

This setting affects the location feature (e.g. GPS or other location tracking). From a security perspective, it's not a good idea to reveal your location to software in most cases, but there are legitimate uses, such as mapping software. However, they should not be used in high security environments.

Impact:

The location feature is turned off, and all programs on the computer are prevented from using location information from the location feature.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\LocationAndSensors:DisableLocation

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Location and Sensors\Turn off location

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `Sensors.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

Default Value:

Disabled. (Programs on the computer are permitted to use location information from the location feature.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

18.9.40 Maintenance Scheduler

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `msched.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.9.41 Maps

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WinMaps.admx/adml` that is included with the Microsoft Windows 10 Release 1511 Administrative Templates (or newer).

18.9.42 MDM

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `MDM.admx/adml` that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

18.9.43 Messaging

This section contains messaging settings.

This Group Policy section is provided by the Group Policy template `Messaging.admx/adml` that is included with the Microsoft Windows 10 Release 1709 Administrative Templates (or newer).

18.9.43.1 (L2) Ensure 'Allow Message Service Cloud Sync' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting allows backup and restore of cellular text messages to Microsoft's cloud services.

The recommended state for this setting is: `Disabled`.

Rationale:

In a high security environment, data should never be sent to any 3rd party since this data could contain sensitive information.

Impact:

Cellular text messages will not be backed up to (or restored from) Microsoft's cloud services.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\Messaging:AllowMessageSync`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Messaging\Allow Message Service Cloud Sync

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `Messaging.admx/adml` that is included with the Microsoft Windows 10 Release 1709 Administrative Templates (or newer).

Default Value:

Enabled. (Cellular text messages can be backed up and restored to Microsoft's cloud services.)

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.9.44 Microsoft account

This section contains recommendations related to Microsoft Accounts.

This Group Policy section is provided by the Group Policy template `MSAPolicy.admx/adml` that is included with the Microsoft Windows 10 Release 1703 Administrative Templates (or newer).

18.9.44.1 (L1) Ensure 'Block all consumer Microsoft account user authentication' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting determines whether applications and services on the device can utilize new consumer Microsoft account authentication via the Windows `OnlineID` and `WebAccountManager` APIs.

The recommended state for this setting is: `Enabled`.

Rationale:

Organizations that want to effectively implement identity management policies and maintain firm control of what accounts are used on their computers will probably want to block Microsoft accounts. Organizations may also need to block Microsoft accounts in order to meet the requirements of compliance standards that apply to their information systems.

Impact:

All applications and services on the device will be prevented from *new* authentications using consumer Microsoft accounts via the Windows `OnlineID` and `WebAccountManager` APIs. Authentications performed directly by the user in web browsers or in apps that use `OAuth` will remain unaffected.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\MicrosoftAccount:DisableUserAuth

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Microsoft accounts\Block all consumer Microsoft account user authentication

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `MSAPolicy.admx/adml` that is included with the Microsoft Windows 10 Release 1703 Administrative Templates (or newer).

Default Value:

Disabled. (Applications and services on the device will be permitted to authenticate using consumer Microsoft accounts via the Windows OnlineID and WebAccountManager APIs.)

CIS Controls:

Version 7

16.8 Disable Any Unassociated Accounts

Disable any account that cannot be associated with a business process or business owner.

18.9.45 Microsoft Edge

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `MicrosoftEdge.admx/adml` that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

18.9.46 Microsoft FIDO Authentication

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `FidoAuth.admx/adml` that is included with the Microsoft Windows 10 Release 1709 Administrative Templates (or newer).

18.9.47 Microsoft Secondary Authentication Factor

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `DeviceCredential.admx/adml` that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

18.9.48 Microsoft User Experience Virtualization

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `UserExperienceVirtualization.admx/adml` that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

18.9.49 NetMeeting

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Conf.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.50 Network Access Protection

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `NAPXPQec.admx/adml` that is only included with the Microsoft Windows Server 2008 (non-R2) through the Windows 8.1 Update & Server 2012 R2 Update Administrative Templates.

18.9.51 Network Projector

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `NetworkProjection.admx/adml` that is only included with the Microsoft Windows Vista through the Windows 8.1 Update & Server 2012 R2 Update Administrative Templates.

18.9.52 OneDrive (formerly SkyDrive)

This section contains recommendations related to OneDrive.

The Group Policy settings contained within this section are provided by the Group Policy template `SkyDrive.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

Note: This section was initially named *SkyDrive* but was renamed by Microsoft to *OneDrive* starting with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates.

18.9.52.1 (L1) Ensure 'Prevent the usage of OneDrive for file storage' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting lets you prevent apps and features from working with files on OneDrive using the Next Generation Sync Client.

The recommended state for this setting is: `Enabled`.

Rationale:

Enabling this setting prevents users from accidentally (or intentionally) uploading confidential or sensitive corporate information to the OneDrive cloud service using the Next Generation Sync Client.

Note: This security concern applies to *any* cloud-based file storage application installed on a server, not just the one supplied with Windows Server.

Impact:

Users can't access OneDrive from the OneDrive app and file picker. Windows Store apps can't access OneDrive using the WinRT API. OneDrive doesn't appear in the navigation pane in File Explorer. OneDrive files aren't kept in sync with the cloud. Users can't automatically upload photos and videos from the camera roll folder.

Note: If your organization uses Office 365, be aware that this setting will prevent users from saving files to OneDrive/SkyDrive.

Note #2: If your organization has decided to implement **OneDrive for Business** and therefore needs to except itself from this recommendation, we highly suggest that you also obtain and utilize the `OneDrive.admx/adml` template that is bundled with the latest OneDrive client, as noted [at this link](#) (this template is not included with the Windows Administrative Templates). Two alternative OneDrive settings in particular from that template are worth your consideration:

- *Allow syncing OneDrive accounts for only specific organizations* - a computer-based setting that restricts OneDrive client connections to only **approved** tenant IDs.
- *Prevent users from synchronizing personal OneDrive accounts* - a user-based setting that prevents use of consumer OneDrive (i.e. non-business).

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\OneDrive:DisableFileSyncNGSC

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\OneDrive\Prevent the usage of OneDrive for file storage

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `SkyDrive.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer). However, we strongly recommend you only use the version included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer). Older versions of the templates had conflicting settings in different template files for both OneDrive & SkyDrive, until it was cleaned up properly in the above version.

Note #2: In older Microsoft Windows Administrative Templates, this setting was named *Prevent the usage of SkyDrive for file storage*, but it was renamed starting with the Windows 10 RTM (Release 1507) Administrative Templates.

Default Value:

Disabled. (Apps and features can work with OneDrive file storage using the Next Generation Sync Client.)

CIS Controls:

Version 7

13.4 Only Allow Access to Authorized Cloud Storage or Email Providers

Only allow access to authorized cloud storage or email providers.

18.9.53 Online Assistance

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `HelpAndSupport.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.54 OOBE

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `OOBE.admx/adml` that is included with the Microsoft Windows 10 Release 1809 and Server 2019 Administrative Templates (or newer).

18.9.55 Password Synchronization

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `PswdSync.admx/adml` that is only included with the Microsoft Windows Vista through the Windows 8.1 Update & Server 2012 R2 Update Administrative Templates.

18.9.56 Portable Operating System

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `ExternalBoot.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.9.57 Presentation Settings

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `MobilePCPresentationSettings.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.58 Push To Install

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `PushToInstall.admx/adml` that is included with the Microsoft Windows 10 Release 1709 Administrative Templates (or newer).

18.9.59 Remote Desktop Services (formerly Terminal Services)

This section contains recommendations related to Remote Desktop Services.

This Group Policy section is provided by the Group Policy template `TerminalServer.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Note: This section was initially named *Terminal Services* but was renamed by Microsoft to *Remote Desktop Services* starting with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates.

18.9.59.1 RD Licensing (formerly TS Licensing)

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `TerminalServer.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Note: This section was initially named *TS Licensing* but was renamed by Microsoft to *RD Licensing* starting with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates.

18.9.59.2 Remote Desktop Connection Client

This section contains recommendations for the Remote Desktop Connection Client.

This Group Policy section is provided by the Group Policy template `TerminalServer.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.59.2.1 RemoteFX USB Device Redirection

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `TerminalServer.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.9.59.2.2 (L1) Ensure 'Do not allow passwords to be saved' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting helps prevent Remote Desktop clients from saving passwords on a computer.

The recommended state for this setting is: Enabled.

Note: If this policy setting was previously configured as Disabled or Not configured, any previously saved passwords will be deleted the first time a Remote Desktop client disconnects from any server.

Rationale:

An attacker with physical access to the computer may be able to break the protection guarding saved passwords. An attacker who compromises a user's account and connects to their computer could use saved passwords to gain access to additional hosts.

Impact:

The password saving checkbox will be disabled for Remote Desktop clients and users will not be able to save passwords.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\Terminal Services:DisablePasswordSaving

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Remote Desktop Services\Remote Desktop Connection Client\Do not allow passwords to be saved

Note: This Group Policy path is provided by the Group Policy template TerminalServer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Users will be able to save passwords using Remote Desktop Connection.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73567
Rule ID: SV-88231r1_rule
STIG ID: WN16-CC-000370
Severity: CAT II

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

18.9.59.3 Remote Desktop Session Host (formerly Terminal Server)

This section contains recommendations for the Remote Desktop Session Host.

This Group Policy section is provided by the Group Policy template `TerminalServer.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Note: This section was initially named *Terminal Server* but was renamed by Microsoft to *Remote Desktop Session Host* starting with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates.

18.9.59.3.1 Application Compatibility

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `TerminalServer-Server.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

18.9.59.3.2 Connections

This section contains recommendations for Connections to the Remote Desktop Session Host.

This Group Policy section is provided by the Group Policy template TerminalServer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.59.3.2.1 (L2) Ensure 'Restrict Remote Desktop Services users to a single Remote Desktop Services session' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting allows you to restrict users to a single Remote Desktop Services session.

The recommended state for this setting is: Enabled.

Rationale:

This setting ensures that users & administrators who Remote Desktop to a server will continue to use the same session - if they disconnect and reconnect, they will go back to the same session they were using before, preventing the creation of a second simultaneous session. This both prevents unnecessary resource usage by having the server host unnecessary additional sessions (which would put extra load on the server) and also ensures a consistency of experience for the user.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\Terminal Services:fSingleSessionPerUser

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Remote Desktop Services\Remote Desktop Session Host\Connections\Restrict Remote Desktop Services users to a single Remote Desktop Services session

Note: This Group Policy path is provided by the Group Policy template TerminalServer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Note #2: In older Microsoft Windows Administrative Templates, this setting was named *Restrict Terminal Services users to a single remote session*, but it was renamed starting with the Windows 7 & Server 2008 R2 Administrative Templates.

Default Value:

Enabled. (Users who log on remotely by using Remote Desktop Services will be restricted to a single session (either active or disconnected) on that server. If the user leaves the session in a disconnected state, the user automatically reconnects to that session at the next logon.)

CIS Controls:

Version 7

4.5 Use Multifactor Authentication For All Administrative Access

Use multi-factor authentication and encrypted channels for all administrative account access.

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

18.9.59.3.3 Device and Resource Redirection

This section contains recommendations related to Remote Desktop Session Host Device and Resource Redirection.

This Group Policy section is provided by the Group Policy template TerminalServer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.59.3.3.1 (L2) Ensure 'Do not allow COM port redirection' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting specifies whether to prevent the redirection of data to client COM ports from the remote computer in a Remote Desktop Services session.

The recommended state for this setting is: Enabled.

Rationale:

In a more security-sensitive environment, it is desirable to reduce the possible attack surface. The need for COM port redirection within a Remote Desktop session is very rare, so makes sense to reduce the number of unexpected avenues for data exfiltration and/or malicious code transfer.

Impact:

Users in a Remote Desktop Services session will not be able to redirect server data to local (client) COM ports.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\Terminal Services:fDisableCcm

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Remote Desktop Services\Remote Desktop Session Host\Device and Resource Redirection\Do not allow COM port redirection

Note: This Group Policy path is provided by the Group Policy template TerminalServer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Remote Desktop Services allows COM port redirection.)

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

18.9.59.3.3.2 (L1) Ensure 'Do not allow drive redirection' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting prevents users from sharing the local drives on their client computers to Remote Desktop Servers that they access. Mapped drives appear in the session folder tree in Windows Explorer in the following format:

\\\TSClient\\<driveletter>\$

If local drives are shared they are left vulnerable to intruders who want to exploit the data that is stored on them.

The recommended state for this setting is: Enabled.

Rationale:

Data could be forwarded from the user's Remote Desktop Services session to the user's local computer without any direct user interaction. Malicious software already present on a compromised server would have direct and stealthy disk access to the user's local computer during the Remote Desktop session.

Impact:

Drive redirection will not be possible. In most situations, traditional network drive mapping to file shares (including administrative shares) performed manually by the connected user will serve as a capable substitute to still allow file transfers when needed.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\ Policies\Microsoft\Windows NT\Terminal  
Services:fDisableCdm
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

```
Computer Configuration\Policies\Administrative Templates\Windows  
Components\Remote Desktop Services\Remote Desktop Session Host\Device and  
Resource Redirection\Do not allow drive redirection
```

Note: This Group Policy path is provided by the Group Policy template TerminalServer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (An RD Session Host maps client drives automatically upon connection.)

Additional Information:

This Benchmark Recommendation maps to:

```
Microsoft Windows Server 2016 Security Technical Implementation Guide:  
Version 1, Release 13, Benchmark Date: May 15, 2020  
  
Vul ID: V-73569  
Rule ID: SV-88233r1_rule  
STIG ID: WN16-CC-000380  
Severity: CAT II
```

CIS Controls:

Version 7

14.6 Protect Information through Access Control Lists

Protect all information stored on systems with file system, network share, claims, application, or database specific access control lists. These controls will enforce the principle that only authorized individuals should have access to the information based on their need to access the information as a part of their responsibilities.

18.9.59.3.3.3 (L2) Ensure 'Do not allow LPT port redirection' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting specifies whether to prevent the redirection of data to client LPT ports during a Remote Desktop Services session.

The recommended state for this setting is: Enabled.

Rationale:

In a more security-sensitive environment, it is desirable to reduce the possible attack surface. The need for LPT port redirection within a Remote Desktop session is very rare, so makes sense to reduce the number of unexpected avenues for data exfiltration and/or malicious code transfer.

Impact:

Users in a Remote Desktop Services session will not be able to redirect server data to local (client) LPT ports.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\Terminal Services:fDisableLPT

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Remote Desktop Services\Remote Desktop Session Host\Device and Resource Redirection\Do not allow LPT port redirection

Note: This Group Policy path is provided by the Group Policy template TerminalServer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Remote Desktop Services allows LPT port redirection.)

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

18.9.59.3.3.4 (L2) Ensure 'Do not allow supported Plug and Play device redirection' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting allows you to control the redirection of supported Plug and Play devices, such as Windows Portable Devices, to the remote computer in a Remote Desktop Services session.

The recommended state for this setting is: Enabled.

Rationale:

In a more security-sensitive environment, it is desirable to reduce the possible attack surface. The need for Plug and Play device redirection within a Remote Desktop session is very rare, so makes sense to reduce the number of unexpected avenues for data exfiltration and/or malicious code transfer.

Impact:

Users in a Remote Desktop Services session will not be able to redirect their supported (local client) Plug and Play devices to the remote computer.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\Terminal Services:fDisablePNPRedir

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Remote Desktop Services\Remote Desktop Session Host\Device and Resource Redirection\Do not allow supported Plug and Play device redirection

Note: This Group Policy path is provided by the Group Policy template TerminalServer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Remote Desktop Services allows redirection of supported Plug and Play devices.)

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

18.9.59.3.4 Licensing

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template TerminalServer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.59.3.5 Printer Redirection

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template TerminalServer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.59.3.6 Profiles

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `TerminalServer.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.59.3.7 RD Connection Broker (*formerly TS Connection Broker*)

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `TerminalServer.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Note: This section was initially named *TS Connection Broker* but was renamed by Microsoft to *RD Connection Broker* starting with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates.

18.9.59.3.8 Remote Session Environment

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `TerminalServer.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.59.3.9 Security

This section contains recommendations related to Remote Desktop Session Host Security.

This Group Policy section is provided by the Group Policy template `TerminalServer.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.59.3.9.1 (L1) Ensure 'Always prompt for password upon connection' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting specifies whether Remote Desktop Services always prompts the client computer for a password upon connection. You can use this policy setting to enforce a password prompt for users who log on to Remote Desktop Services, even if they already provided the password in the Remote Desktop Connection client.

The recommended state for this setting is: Enabled.

Rationale:

Users have the option to store both their username and password when they create a new Remote Desktop Connection shortcut. If the server that runs Remote Desktop Services allows users who have used this feature to log on to the server but not enter their password, then it is possible that an attacker who has gained physical access to the user's computer could connect to a Remote Desktop Server through the Remote Desktop Connection shortcut, even though they may not know the user's password.

Impact:

Users cannot automatically log on to Remote Desktop Services by supplying their passwords in the Remote Desktop Connection client. They will be prompted for a password to log on.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\Terminal Services:fPromptForPassword

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Remote Desktop Services\Remote Desktop Session Host\Security\Always prompt for password upon connection

Note: This Group Policy path is provided by the Group Policy template TerminalServer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Note #2: In the Microsoft Windows Vista Administrative Templates, this setting was named *Always prompt client for password upon connection*, but it was renamed starting with the Windows Server 2008 (non-R2) Administrative Templates.

Default Value:

Disabled. (Remote Desktop Services allows users to automatically log on if they enter a password in the Remote Desktop Connection client.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73571
Rule ID: SV-88235r1_rule
STIG ID: WN16-CC-000390
Severity: CAT II

CIS Controls:

Version 7

16.4 Encrypt or Hash all Authentication Credentials

Encrypt or hash with a salt all authentication credentials when stored.

16.5 Encrypt Transmittal of Username and Authentication Credentials

Ensure that all account usernames and authentication credentials are transmitted across networks using encrypted channels.

18.9.59.3.9.2 (L1) Ensure 'Require secure RPC communication' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to specify whether Remote Desktop Services requires secure Remote Procedure Call (RPC) communication with all clients or allows unsecured communication.

You can use this policy setting to strengthen the security of RPC communication with clients by allowing only authenticated and encrypted requests.

The recommended state for this setting is: Enabled.

Rationale:

Allowing unsecure RPC communication can expose the server to man in the middle attacks and data disclosure attacks.

Impact:

Remote Desktop Services accepts requests from RPC clients that support secure requests, and does not allow unsecured communication with untrusted clients.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\Terminal Services:fEncryptRPCTraffic

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Remote Desktop Services\Remote Desktop Session Host\Security\Require secure RPC communication

Note: This Group Policy path is provided by the Group Policy template TerminalServer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Remote Desktop Services always requests security for all RPC traffic. However, unsecured communication is allowed for RPC clients that do not respond to the request.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73573
Rule ID: SV-88237r1_rule
STIG ID: WN16-CC-000400
Severity: CAT II

CIS Controls:

Version 7

4.5 Use Multifactor Authentication For All Administrative Access

Use multi-factor authentication and encrypted channels for all administrative account access.

18.9.59.3.9.3 (L1) Ensure 'Require use of specific security layer for remote (RDP) connections' is set to 'Enabled: SSL' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting specifies whether to require the use of a specific security layer to secure communications between clients and RD Session Host servers during Remote Desktop Protocol (RDP) connections.

The recommended state for this setting is: Enabled: SSL.

Note: In spite of this setting being labelled *SSL*, it is actually enforcing Transport Layer Security (TLS) version 1.0, not the older (and less secure) SSL protocol.

Rationale:

The native Remote Desktop Protocol (RDP) encryption is now considered a weak protocol, so enforcing the use of stronger Transport Layer Security (TLS) encryption for all RDP communications between clients and RD Session Host servers is preferred.

Impact:

TLS 1.0 will be required to authenticate to the RD Session Host server. If TLS is not supported, the connection fails.

Note: By default, this setting will use a self-signed certificate for RDP connections. If your organization has established the use of a Public Key Infrastructure (PKI) for SSL/TLS encryption, then we recommend that you also configure the *Server authentication certificate template* setting to instruct RDP to use a certificate from your PKI instead of a self-signed one. Note that the certificate template used for this purpose must have “Client Authentication” configured as an Intended Purpose. Note also that a valid, non-expired certificate using the specified template must already be installed on the server for it to work.

Note #2: Some third party two-factor authentication solutions (e.g. RSA Authentication Agent) can be negatively affected by this setting, as the SSL/TLS security layer will expect the user's Windows password upon initial connection attempt (before the RDP logon screen), and once successfully authenticated, pass the credential along to that Windows session on the RDP host (to complete the login). If a two-factor agent is present and expecting a different credential at the RDP logon screen, this initial connection may result in a failed logon attempt, and also effectively cause a “double logon” requirement for each and every new RDP session.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\Terminal Services:SecurityLayer
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:
SSL:

```
Computer Configuration\Policies\Administrative Templates\Windows Components\Remote Desktop Services\Remote Desktop Session Host\Security\Require use of specific security layer for remote (RDP) connections
```

Note: This Group Policy path is provided by the Group Policy template TerminalServer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Negotiate. (The most secure method that is supported by the client is enforced. If TLS is supported, it is used to authenticate the RD Session Host server. If TLS is not supported, native RDP encryption is used, but the RD Session Host server is not authenticated.)

CIS Controls:

Version 7

4.5 Use Multifactor Authentication For All Administrative Access

Use multi-factor authentication and encrypted channels for all administrative account access.

18.9.59.3.9.4 (L1) Ensure 'Require user authentication for remote connections by using Network Level Authentication' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to specify whether to require user authentication for remote connections to the RD Session Host server by using Network Level Authentication.

The recommended state for this setting is: Enabled.

Rationale:

Requiring that user authentication occur earlier in the remote connection process enhances security.

Impact:

Only client computers that support Network Level Authentication can connect to the RD Session Host server.

Note: Some third party two-factor authentication solutions (e.g. RSA Authentication Agent) can be negatively affected by this setting, as Network Level Authentication will expect the user's Windows password upon initial connection attempt (before the RDP logon screen), and once successfully authenticated, pass the credential along to that Windows session on the RDP host (to complete the login). If a two-factor agent is present and expecting a different credential at the RDP logon screen, this initial connection may result in a failed logon attempt, and also effectively cause a "double logon" requirement for each and every new RDP session.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\Terminal Services\UserAuthentication

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Remote Desktop Services\Remote Desktop Session Host\Security\Require user authentication for remote connections by using Network Level Authentication

Note: This Group Policy path is provided by the Group Policy template TerminalServer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Note #2: In the Microsoft Windows Vista Administrative Templates, this setting was initially named *Require user authentication using RDP 6.0 for remote connections*, but it was renamed starting with the Windows Server 2008 (non-R2) Administrative Templates.

Default Value:

Windows Server 2008 R2 and older: Disabled.

Windows Server 2012 (non-R2) and newer: Enabled.

CIS Controls:

Version 7

4.5 Use Multifactor Authentication For All Administrative Access

Use multi-factor authentication and encrypted channels for all administrative account access.

18.9.59.3.9.5 (L1) Ensure 'Set client connection encryption level' is set to 'Enabled: High Level' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting specifies whether to require the use of a specific encryption level to secure communications between client computers and RD Session Host servers during Remote Desktop Protocol (RDP) connections. This policy only applies when you are using native RDP encryption. However, native RDP encryption (as opposed to SSL encryption) is not recommended. This policy does not apply to SSL encryption.

The recommended state for this setting is: Enabled: High Level.

Rationale:

If Remote Desktop client connections that use low level encryption are allowed, it is more likely that an attacker will be able to decrypt any captured Remote Desktop Services network traffic.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\Terminal Services:MinEncryptionLevel

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:
High Level:

```
Computer Configuration\Policies\Administrative Templates\Windows Components\Remote Desktop Services\Remote Desktop Session Host\Security\Set client connection encryption level
```

Note: This Group Policy path is provided by the Group Policy template TerminalServer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Enabled: High Level. (All communications between clients and RD Session Host servers during remote connections using native RDP encryption must be 128-bit strength. Clients that do not support 128-bit encryption will be unable to establish Remote Desktop Server sessions.)

Additional Information:

This Benchmark Recommendation maps to:

```
Microsoft Windows Server 2016 Security Technical Implementation Guide:  
Version 1, Release 13, Benchmark Date: May 15, 2020
```

```
Vul ID: V-73575  
Rule ID: SV-88239r1_rule  
STIG ID: WN16-CC-000410  
Severity: CAT II
```

CIS Controls:

Version 7

4.5 Use Multifactor Authentication For All Administrative Access

Use multi-factor authentication and encrypted channels for all administrative account access.

18.9.59.3.10 Session Time Limits

This section contains recommendations related to Remote Desktop Session Host Session Time Limits.

This Group Policy section is provided by the Group Policy template `TerminalServer.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.59.3.10.1 (L2) Ensure 'Set time limit for active but idle Remote Desktop Services sessions' is set to 'Enabled: 15 minutes or less'
(Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting allows you to specify the maximum amount of time that an active Remote Desktop Services session can be idle (without user input) before it is automatically disconnected.

The recommended state for this setting is: Enabled: 15 minutes or less.

Rationale:

This setting helps to prevent active Remote Desktop sessions from tying up the computer for long periods of time while not in use, preventing computing resources from being consumed by large numbers of inactive sessions. In addition, old, forgotten Remote Desktop sessions that are still active can cause password lockouts if the user's password has changed but the old session is still running. For systems that limit the number of connected users (e.g. servers in the default Administrative mode - 2 sessions only), other users' old but still active sessions can prevent another user from connecting, resulting in an effective denial of service.

Impact:

Remote Desktop Services will automatically disconnect active but idle sessions after 15 minutes (or the specified amount of time). The user receives a warning two minutes before the session disconnects, which allows the user to press a key or move the mouse to keep the session active. Note that idle session time limits do not apply to console sessions.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\Terminal Services:MaxIdleTime
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled: 15 minutes or less:

```
Computer Configuration\Policies\Administrative Templates\Windows Components\Remote Desktop Services\Remote Desktop Session Host\Session Time Limits\Set time limit for active but idle Remote Desktop Services sessions
```

Note: This Group Policy path is provided by the Group Policy template TerminalServer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Note #2: In older Microsoft Windows Administrative Templates, this setting was named *Set time limit for active but idle Terminal Services sessions*, but it was renamed starting with the Windows 7 & Server 2008 R2 Administrative Templates.

Default Value:

Disabled. (Remote Desktop Services allows sessions to remain active but idle for an unlimited amount of time.)

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

18.9.59.3.10.2 (L2) Ensure 'Set time limit for disconnected sessions' is set to 'Enabled: 1 minute' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting allows you to configure a time limit for disconnected Remote Desktop Services sessions.

The recommended state for this setting is: Enabled: 1 minute.

Rationale:

This setting helps to prevent active Remote Desktop sessions from tying up the computer for long periods of time while not in use, preventing computing resources from being consumed by large numbers of disconnected but still active sessions. In addition, old, forgotten Remote Desktop sessions that are still active can cause password lockouts if the user's password has changed but the old session is still running. For systems that limit the number of connected users (e.g. servers in the default Administrative mode - 2 sessions only), other users' old but still active sessions can prevent another user from connecting, resulting in an effective denial of service. This setting is important to ensure a disconnected session is properly terminated.

Impact:

Disconnected Remote Desktop sessions are deleted from the server after 1 minute. Note that disconnected session time limits do not apply to console sessions.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\Terminal Services:MaxDisconnectionTime
--

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:
1 minute:

```
Computer Configuration\Policies\Administrative Templates\Windows Components\Remote Desktop Services\Remote Desktop Session Host\Session Time Limits\Set time limit for disconnected sessions
```

Note: This Group Policy path is provided by the Group Policy template TerminalServer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Disconnected Remote Desktop sessions are maintained for an unlimited time on the server.)

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

18.9.59.3.11 Temporary folders

This section contains recommendations related to Remote Desktop Session Host Session Temporary folders.

This Group Policy section is provided by the Group Policy template TerminalServer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.59.3.11.1 (L1) Ensure 'Do not delete tempfolders upon exit' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting specifies whether Remote Desktop Services retains a user's per-session temporary folders at logoff.

The recommended state for this setting is: Disabled.

Rationale:

Sensitive information could be contained inside the temporary folders and visible to other administrators that log into the system.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\Terminal Services:DeleteTempDirsOnExit

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Remote Desktop Services\Remote Desktop Session Host\Temporary Folders\Do not delete temp folders upon exit

Note: This Group Policy path is provided by the Group Policy template TerminalServer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Note #2: In older Microsoft Windows Administrative Templates, this setting was named *Do not delete temp folder upon exit*, but it was renamed starting with the Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

Default Value:

Disabled. (Temporary folders are deleted when a user logs off.)

CIS Controls:

Version 7

14.6 Protect Information through Access Control Lists

Protect all information stored on systems with file system, network share, claims, application, or database specific access control lists. These controls will enforce the principle that only authorized individuals should have access to the information based on their need to access the information as a part of their responsibilities.

18.9.59.3.11.2 (L1) Ensure 'Do not use temporary folders per session' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

By default, Remote Desktop Services creates a separate temporary folder on the RD Session Host server for each active session that a user maintains on the RD Session Host server. The temporary folder is created on the RD Session Host server in a Temp folder under the user's profile folder and is named with the `sessionid`. This temporary folder is used to store individual temporary files.

To reclaim disk space, the temporary folder is deleted when the user logs off from a session.

The recommended state for this setting is: `Disabled`.

Rationale:

Disabling this setting keeps the cached data independent for each session, both reducing the chance of problems from shared cached data between sessions, and keeping possibly sensitive data separate to each user session.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\Terminal Services:PerSessionTempDir

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Remote Desktop Services\Remote Desktop Session Host\Temporary Folders\Do not use temporary folders per session

Note: This Group Policy path is provided by the Group Policy template TerminalServer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Per-session temporary folders are created.)

CIS Controls:

Version 7

14.6 Protect Information through Access Control Lists

Protect all information stored on systems with file system, network share, claims, application, or database specific access control lists. These controls will enforce the principle that only authorized individuals should have access to the information based on their need to access the information as a part of their responsibilities.

18.9.60 RSS Feeds

This section contains recommendations related to RSS feeds.

This Group Policy section is provided by the Group Policy template `InetRes.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.60.1 (L1) Ensure 'Prevent downloading of enclosures' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting prevents the user from having enclosures (file attachments) downloaded from an RSS feed to the user's computer.

The recommended state for this setting is: `Enabled`.

Rationale:

Allowing attachments to be downloaded through the RSS feed can introduce files that could have malicious intent.

Impact:

Users cannot set the Feed Sync Engine to download an enclosure through the Feed property page. Developers cannot change the download setting through feed APIs.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Internet Explorer\Feeds:DisableEnclosureDownload`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\RSS Feeds\Prevent downloading of enclosures

Note: This Group Policy path is provided by the Group Policy template `InetRes.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Note #2: In older Microsoft Windows Administrative Templates, this setting was named *Turn off downloading of enclosures*, but it was renamed starting with the Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

Default Value:

Disabled. (Users can set the Feed Sync Engine to download an enclosure through the Feed property page. Developers can change the download setting through the Feed APIs.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73577
Rule ID: SV-88241r1_rule
STIG ID: WN16-CC-000420
Severity: CAT II

CIS Controls:

Version 7

7.2 Disable Unnecessary or Unauthorized Browser or Email Client Plugins

Uninstall or disable any unauthorized browser or email client plugins or add-on applications.

18.9.60.2 (L3) Ensure 'Turn on Basic feed authentication over HTTP' is set to 'Disabled' or 'Not Configured' (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows users to have their feeds authenticated through the Basic authentication scheme over an unencrypted HTTP connection.

The recommended state for this setting is: Disabled or Not Configured.

Rationale:

Basic authentication uses plain-text passwords that could be used to compromise a system.

Impact:

None - This is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Internet Explorer\Feeds:AllowBasicAuthInClear

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled or Not Configured:

Computer Configuration\Policies\Administrative Templates\Windows Components\RSS Feeds\Turn on Basic feed authentication over HTTP

Note: This Group Policy path is provided by the Group Policy template `InetRes.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Windows RSS Platform does not authenticate feeds to servers by using the Basic authentication scheme in combination with a less secure HTTP connection.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73579
Rule ID: SV-88243r1_rule
STIG ID: WN16-CC-000430
Severity: CAT II

CIS Controls:

Version 7

7.2 Disable Unnecessary or Unauthorized Browser or Email Client Plugins

Uninstall or disable any unauthorized browser or email client plugins or add-on applications.

18.9.61 Search

This section contains recommendations for Search settings.

This Group Policy section is provided by the Group Policy template `Search.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.61.1 OCR

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `SearchOCR.admx/adml` that is only included with the Microsoft Windows 7 & Server 2008 R2 through the Windows 10 Release 1511 Administrative Templates.

18.9.61.2 (L2) Ensure 'Allow Cloud Search' is set to 'Enabled: Disable Cloud Search' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting allows search and Cortana to search cloud sources like OneDrive and SharePoint.

The recommended state for this setting is: Enabled: Disable Cloud Search.

Rationale:

Due to privacy concerns, data should never be sent to any 3rd party since this data could contain sensitive information.

Impact:

Search and Cortana will not be permitted to search cloud sources like OneDrive and SharePoint.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\Windows
Search:AllowCloudSearch

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled: Disable Cloud Search:

Computer Configuration\Policies\Administrative Templates\Windows
Components\Search\Allow Cloud Search

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template Search.admx/adml that is included with the Microsoft Windows 10 Release 1709 Administrative Templates (or newer).

Default Value:

Enabled: Enable Cloud Search. (Allow search and Cortana to search cloud sources like OneDrive and SharePoint.)

CIS Controls:

Version 7

13.4 Only Allow Access to Authorized Cloud Storage or Email Providers

Only allow access to authorized cloud storage or email providers.

18.9.61.3 (L1) Ensure 'Allow indexing of encrypted files' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls whether encrypted items are allowed to be indexed. When this setting is changed, the index is rebuilt completely. Full volume encryption (such as BitLocker Drive Encryption or a non-Microsoft solution) must be used for the location of the index to maintain security for encrypted files.

The recommended state for this setting is: `Disabled`.

Rationale:

Indexing and allowing users to search encrypted files could potentially reveal confidential data stored within the encrypted files.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\Windows Search:AllowIndexingEncryptedStoresOrItems`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Search\Allow indexing of encrypted files

Note: This Group Policy path is provided by the Group Policy template Search.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Search service components (including non-Microsoft components) are expected not to index encrypted items or encrypted stores.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73581
Rule ID: SV-88245r1_rule
STIG ID: WN16-CC-000440
Severity: CAT II

CIS Controls:

Version 7

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.9.62 Security Center

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `SecurityCenter.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.63 Server for NIS

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `snis.admx/adml` that is only included with the Microsoft Windows Vista through the Windows 8.1 Update & Server 2012 R2 Update Administrative Templates.

18.9.64 Shutdown Options

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WinInit.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.65 Smart Card

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `SmartCard.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.66 Software Protection Platform

This section contains recommendations related to the Software Protection Platform.

This Group Policy section is provided by the Group Policy template `AVSValidationGP.admx/adml` that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

18.9.66.1 (L2) Ensure 'Turn off KMS Client Online AVS Validation' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

The Key Management Service (KMS) is a Microsoft license activation method that entails setting up a local server to store the software licenses. The KMS server itself needs to connect to Microsoft to activate the KMS service, but subsequent on-network clients can activate Microsoft Windows OS and/or their Microsoft Office via the KMS server instead of connecting directly to Microsoft. This policy setting lets you opt-out of sending KMS client activation data to Microsoft automatically.

The recommended state for this setting is: Enabled.

Rationale:

Even though the KMS licensing method does not *require* KMS clients to connect to Microsoft, they still send KMS client activation state data to Microsoft automatically. Preventing this information from being sent can help reduce privacy concerns in high security environments.

Impact:

The computer is prevented from sending data to Microsoft regarding its KMS client activation state.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows  
NT\CurrentVersion\Software Protection Platform:NoGenTicket
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

```
Computer Configuration\Policies\Administrative Templates\Windows  
Components\Software Protection Platform\Turn off KMS Client Online AVS  
Validation
```

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template AVSValidationGP.admx/adml that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

Default Value:

Disabled. (KMS client activation data will automatically be sent to Microsoft when the device activates.)

CIS Controls:

Version 7

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.9.67 Sound Recorder

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `SoundRec.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.68 Speech

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Speech.admx/adml` that is included with the Microsoft Windows 10 Release 1703 Administrative Templates (or newer).

18.9.69 Store

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WinStoreUI.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates, or by the Group Policy template `WindowsStore.admx/adml` that is included with the Microsoft Windows 10 Release 1511 Administrative Templates (or newer).

18.9.70 Sync your settings

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `SettingSync.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.9.71 Tablet PC

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.72 Task Scheduler

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `TaskScheduler.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.73 Text Input

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `TextInput.admx/adml` that is only included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates and Microsoft Windows 10 Release 1511 Administrative Templates.

18.9.74 Windows Calendar

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WinCal.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.75 Windows Color System

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsColorSystem.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.76 Windows Customer Experience Improvement Program

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `CEIPEnable.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.77 Windows Defender Antivirus (formerly Windows Defender)

This section contains recommendations related to Windows Defender Antivirus.

This Group Policy section is provided by the Group Policy template `WindowsDefender.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Note: This section was originally named *Windows Defender* but was renamed by Microsoft to *Windows Defender Antivirus* starting with the Microsoft Windows 10 Release 1703 Administrative Templates.

18.9.77.1 Client Interface

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsDefender.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

18.9.77.2 Exclusions

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsDefender.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

18.9.77.3 MAPS

This section contains recommendations related to Microsoft Active Protection Service (MAPS).

This Group Policy section is provided by the Group Policy template `WindowsDefender.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

18.9.77.3.1 (L1) Ensure 'Configure local setting override for reporting to Microsoft MAPS' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting configures a local override for the configuration to join Microsoft Active Protection Service (MAPS), which Microsoft has now renamed to "Windows Defender Antivirus Cloud Protection Service". This setting can only be set by Group Policy.

The recommended state for this setting is: Disabled.

Rationale:

The decision on whether or not to participate in Microsoft MAPS / Windows Defender Antivirus Cloud Protection Service for malicious software reporting should be made centrally in an enterprise managed environment, so that all computers within it behave consistently in that regard. Configuring this setting to Disabled ensures that the decision remains centrally managed.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows Defender\Spynet:LocalSettingOverrideSpynetReporting

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Defender Antivirus\MAPS\Configure local setting override for reporting to Microsoft MAPS

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template WindowsDefender.admx/adml that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

Default Value:

Disabled. (Group Policy will take priority over the local preference setting.)

CIS Controls:

Version 7

2.7 Utilize Application Whitelisting

Utilize application whitelisting technology on all assets to ensure that only authorized software executes and all unauthorized software is blocked from executing on assets.

8.1 Utilize Centrally Managed Anti-malware Software

Utilize centrally managed anti-malware software to continuously monitor and defend each of the organization's workstations and servers.

8.2 Ensure Anti-Malware Software and Signatures are Updated

Ensure that the organization's anti-malware software updates its scanning engine and signature database on a regular basis.

18.9.77.3.2 (L2) Ensure 'Join Microsoft MAPS' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting allows you to join Microsoft Active Protection Service (MAPS), which Microsoft has now renamed to "Windows Defender Antivirus Cloud Protection Service". Microsoft MAPS / Windows Defender Antivirus Cloud Protection Service is the online community that helps you choose how to respond to potential threats. The community also helps stop the spread of new malicious software infections. You can choose to send basic or additional information about detected software. Additional information helps Microsoft create new definitions and help it to protect your computer.

Possible options are:

- (0x0) Disabled (default)
- (0x1) Basic membership
- (0x2) Advanced membership

Basic membership will send basic information to Microsoft about software that has been detected including where the software came from the actions that you apply or that are applied automatically and whether the actions were successful.

Advanced membership in addition to basic information will send more information to Microsoft about malicious software spyware and potentially unwanted software including the location of the software file names how the software operates and how it has impacted your computer.

The recommended state for this setting is: **Disabled**.

Rationale:

The information that would be sent can include things like location of detected items on your computer if harmful software was removed. The information would be automatically collected and sent. In some instances personal information might unintentionally be sent to Microsoft. However, Microsoft states that it will not use this information to identify you or contact you.

For privacy reasons in high security environments, it is best to prevent these data submissions altogether.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is in effect when the following registry value does not exist, or when it exists with a value of 0:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows  
Defender\Spynet:SpynetReporting
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to **Disabled**:

```
Computer Configuration\Policies\Administrative Templates\Windows  
Components\Windows Defender Antivirus\MAPS\Join Microsoft MAPS
```

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `WindowsDefender.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

Default Value:

Disabled. (Microsoft MAPS / Windows Defender Antivirus Cloud Protection Service will not be joined.)

CIS Controls:

Version 7

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.9.77.4 MpEngine

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsDefender.admx/adml` that is included with the Microsoft Windows 10 Release 1703 Administrative Templates (or newer).

18.9.77.5 Network Inspection System

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsDefender.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

18.9.77.6 Quarantine

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsDefender.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

18.9.77.7 Real-time Protection

This section contains settings related to Real-time Protection.

This Group Policy section is provided by the Group Policy template `WindowsDefender.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

18.9.77.7.1 (L1) Ensure 'Turn on behavior monitoring' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to configure behavior monitoring for Windows Defender Antivirus.

The recommended state for this setting is: Enabled.

Rationale:

When running an antivirus solution such as Windows Defender Antivirus, it is important to ensure that it is configured to heuristically monitor in real-time for suspicious and known malicious activity.

Impact:

None - this is the default configuration.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows Defender\Real-Time Protection:DisableBehaviorMonitoring`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Defender Antivirus\Real-Time Protection\Turn on behavior monitoring

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template WindowsDefender.admx/adml that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

Default Value:

Enabled. (Behavior monitoring will be enabled.)

CIS Controls:

Version 7

8.1 Utilize Centrally Managed Anti-malware Software

Utilize centrally managed anti-malware software to continuously monitor and defend each of the organization's workstations and servers.

8.2 Ensure Anti-Malware Software and Signatures are Updated

Ensure that the organization's anti-malware software updates its scanning engine and signature database on a regular basis.

8.6 Centralize Anti-malware Logging

Send all malware detection events to enterprise anti-malware administration tools and event log servers for analysis and alerting.

18.9.77.8 Remediation

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template WindowsDefender.admx/adml that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

18.9.77.9 Reporting

This section contains settings related to Windows Defender Reporting.

This Group Policy section is provided by the Group Policy template `WindowsDefender.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

18.9.77.9.1 (L2) Ensure 'Configure Watson events' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting allows you to configure whether or not Watson events are sent.

The recommended state for this setting is: `Disabled`.

Rationale:

Watson events are the reports that get sent to Microsoft when a program or service crashes or fails, including the possibility of automatic submission. Preventing this information from being sent can help reduce privacy concerns.

Impact:

Watson events will not be sent to Microsoft automatically when a program or service crashes or fails.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows Defender\Reporting:DisableGenericRePorts
--

Remediation:

To establish the recommended configuration via GP, set the following UI path to **Disabled**:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Defender Antivirus\Reporting\Configure Watson events

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `WindowsDefender.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

Default Value:

Enabled. (Watson events *will* be sent to Microsoft automatically when a program or service crashes or fails.)

CIS Controls:

Version 7

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.9.77.10 Scan

This section contains settings related to Windows Defender scanning.

This Group Policy section is provided by the Group Policy template `WindowsDefender.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

18.9.77.10.1 (L1) Ensure 'Scan removable drives' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to manage whether or not to scan for malicious software and unwanted software in the contents of removable drives, such as USB flash drives, when running a full scan.

The recommended state for this setting is: Enabled.

Rationale:

It is important to ensure that any present removable drives are always included in any type of scan, as removable drives are more likely to contain malicious software brought in to the enterprise managed environment from an external, unmanaged computer.

Impact:

Removable drives will be scanned during any type of scan by Windows Defender Antivirus.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows Defender\Scan:DisableRemovableDriveScanning

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Defender Antivirus\Scan removable drives

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template WindowsDefender.admx/adml that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

Default Value:

Disabled. (Removable drives will not be scanned during a full scan. Removable drives may still be scanned during quick scan and custom scan.)

CIS Controls:

Version 7

8.4 Configure Anti-Malware Scanning of Removable Devices

Configure devices so that they automatically conduct an anti-malware scan of removable media when inserted or connected.

18.9.77.10.2 (L1) Ensure 'Turn on e-mail scanning' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to configure e-mail scanning. When e-mail scanning is enabled, the engine will parse the mailbox and mail files, according to their specific format, in order to analyze the mail bodies and attachments. Several e-mail formats are currently supported, for example: pst (Outlook), dbx, mbx, mime (Outlook Express), binhex (Mac).

The recommended state for this setting is: Enabled.

Rationale:

Incoming e-mails should be scanned by an antivirus solution such as Windows Defender Antivirus, as email attachments are a commonly used attack vector to infiltrate computers with malicious software.

Impact:

E-mail scanning by Windows Defender Antivirus will be enabled.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows Defender\Scan:DisableEmailScanning
--

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Defender Antivirus\Scan\Turn on e-mail scanning

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template WindowsDefender.admx/adml that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

Default Value:

Disabled. (E-mail scanning by Windows Defender Antivirus will be disabled.)

CIS Controls:

Version 7

8.1 Utilize Centrally Managed Anti-malware Software

Utilize centrally managed anti-malware software to continuously monitor and defend each of the organization's workstations and servers.

8.2 Ensure Anti-Malware Software and Signatures are Updated

Ensure that the organization's anti-malware software updates its scanning engine and signature database on a regular basis.

18.9.77.11 Security Intelligence Updates (formerly Signature Updates)

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template WindowsDefender.admx/adml that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

Note: This section was initially named *Signature Updates* but was renamed by Microsoft to *Security Intelligence Updates* starting with the Microsoft Windows 10 Release 1903 Administrative Templates.

18.9.77.12 Threats

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsDefender.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

18.9.77.13 Windows Defender Exploit Guard

This section contains Windows Defender Exploit Guard settings.

This Group Policy section is provided by the Group Policy template `WindowsDefender.admx/adml` that is included with the Microsoft Windows 10 Release 1709 Administrative Templates (or newer).

18.9.77.13.1 Attack Surface Reduction

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsDefender.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

18.9.77.13.2 Controlled Folder Access

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsDefender.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

18.9.77.13.3 Network Protection

This section contains Windows Network Protection settings.

This Group Policy section is provided by the Group Policy template `WindowsDefender.admx/adml` that is included with the Microsoft Windows 10 Release 1709 Administrative Templates (or newer).

18.9.77.13.3.1 (L1) Ensure 'Prevent users and apps from accessing dangerous websites' is set to 'Enabled: Block' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls Windows Defender Exploit Guard network protection.

The recommended state for this setting is: Enabled: Block.

Rationale:

This setting can help prevent employees from using any application to access dangerous domains that may host phishing scams, exploit-hosting sites, and other malicious content on the Internet.

Impact:

Users and applications will not be able to access dangerous domains.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows Defender\Windows Defender Exploit Guard\Network Protection:EnableNetworkProtection

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:
Block:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Defender Antivirus\Windows Defender Exploit Guard\Network Protection\Prevent users and apps from accessing dangerous websites

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template WindowsDefender.admx/adml that is included with the Microsoft Windows 10 Release 1709 Administrative Templates (or newer).

Default Value:

Disabled. (Users and applications will not be blocked from connecting to dangerous domains.)

CIS Controls:

Version 7

7.4 Maintain and Enforce Network-Based URL Filters

Enforce network-based URL filters that limit a system's ability to connect to websites not approved by the organization. This filtering shall be enforced for each of the organization's systems, whether they are physically at an organization's facilities or not.

7.6 Log all URL requests

Log all URL requests from each of the organization's systems, whether onsite or a mobile device, in order to identify potentially malicious activity and assist incident handlers with identifying potentially compromised systems.

7.7 Use of DNS Filtering Services

Use DNS filtering services to help block access to known malicious domains.

18.9.77.14 (L1) Ensure 'Configure detection for potentially unwanted applications' is set to 'Enabled: Block' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls detection and action for Potentially Unwanted Applications (PUA), which are sneaky unwanted application bundlers or their bundled applications, that can deliver adware or malware.

The recommended state for this setting is: Enabled: Block.

For more information, see this link: [Block potentially unwanted applications with Windows Defender Antivirus | Microsoft Docs](#)

Rationale:

Potentially unwanted applications can increase the risk of your network being infected with malware, cause malware infections to be harder to identify, and can waste IT resources in cleaning up the applications. They should be blocked from installation.

Impact:

Applications that are identified by Microsoft as PUA will be blocked at download and install time.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows Defender:PUAProtection

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:
Block:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Defender Antivirus\Configure detection for potentially unwanted applications

Note: This Group Policy path is provided by the Group Policy template WindowsDefender.admx/adml that is included with the Microsoft Windows 10 Release 1809 & Server 2019 Administrative Templates (or newer).

Default Value:

Disabled. (Applications that are identified by Microsoft as PUA will not be blocked.)

CIS Controls:

Version 7

2.7 Utilize Application Whitelisting

Utilize application whitelisting technology on all assets to ensure that only authorized software executes and all unauthorized software is blocked from executing on assets.

8.1 Utilize Centrally Managed Anti-malware Software

Utilize centrally managed anti-malware software to continuously monitor and defend each of the organization's workstations and servers.

8.2 Ensure Anti-Malware Software and Signatures are Updated

Ensure that the organization's anti-malware software updates its scanning engine and signature database on a regular basis.

18.9.77.15 (L1) Ensure 'Turn off Windows Defender AntiVirus' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting turns off Windows Defender Antivirus. If the setting is configured to Disabled, Windows Defender Antivirus runs and computers are scanned for malware and other potentially unwanted software.

The recommended state for this setting is: `Disabled`.

Rationale:

It is important to ensure a current, updated antivirus product is scanning each computer for malicious file activity. Microsoft provides a competent solution out of the box in Windows Defender Antivirus.

Organizations that choose to purchase a reputable 3rd-party antivirus solution may choose to exempt themselves from this recommendation in lieu of the commercial alternative.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows
Defender:DisableAntiSpyware`

Remediation:

To establish the recommended configuration via GP, set the following UI path to **Disabled**:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Defender Antivirus\Turn off Windows Defender AntiVirus

Note: This Group Policy path is provided by the Group Policy template `WindowsDefender.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Note #2: In older Microsoft Windows Administrative Templates, this setting was initially named *Turn off Windows Defender*, but it was renamed starting with the Windows 10 Release 1703 Administrative Templates.

Default Value:

Disabled. (Windows Defender Antivirus runs and computers are scanned for malware and other potentially unwanted software.)

CIS Controls:

Version 7

8.1 Utilize Centrally Managed Anti-malware Software

Utilize centrally managed anti-malware software to continuously monitor and defend each of the organization's workstations and servers.

8.2 Ensure Anti-Malware Software and Signatures are Updated

Ensure that the organization's anti-malware software updates its scanning engine and signature database on a regular basis.

18.9.78 Windows Defender Application Guard

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `AppHVSI.admx/adml` that is included with the Microsoft Windows 10 Release 1703 Administrative Templates (or newer).

18.9.79 Windows Defender Exploit Guard

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `ExploitGuard.admx/adml` that is included with the Microsoft Windows 10 Release 1709 Administrative Templates (or newer).

18.9.80 Windows Defender SmartScreen

This section contains Windows Defender SmartScreen settings.

This Group Policy section is provided by the Group Policy template `SmartScreen.admx/adml` that is included with the Microsoft Windows 10 Release 1703 Administrative Templates (or newer).

18.9.80.1 Explorer

This section contains recommendations for Explorer-related Windows Defender SmartScreen settings.

The Group Policy settings contained within this section are provided by the Group Policy template `WindowsExplorer.admx/adml` that is included with the Microsoft Windows 10 Release 1703 Administrative Templates (or newer).

18.9.80.1.1 (L1) Ensure 'Configure Windows Defender SmartScreen' is set to 'Enabled: Warn and prevent bypass' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to manage the behavior of Windows SmartScreen. Windows SmartScreen helps keep PCs safer by warning users before running unrecognized programs downloaded from the Internet. Some information is sent to Microsoft about files and programs run on PCs with this feature enabled.

The recommended state for this setting is: Enabled: Warn and prevent bypass.

Rationale:

Windows SmartScreen helps keep PCs safer by warning users before running unrecognized programs downloaded from the Internet. However, due to the fact that some information is sent to Microsoft about files and programs run on PCs some organizations may prefer to disable it.

Impact:

Users will be warned before they are allowed to run unrecognized programs downloaded from the Internet.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry locations:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\System:EnableSmartScreen  
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\System:ShellSmartScreenLevel
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled: Warn and prevent bypass:

```
Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Defender SmartScreen\Explorer\Configure Windows Defender SmartScreen
```

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `WindowsExplorer.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Note #2: In older Microsoft Windows Administrative Templates, this setting was initially named *Configure Windows SmartScreen*, but it was renamed starting with the Windows 10 Release 1703 Administrative Templates.

Default Value:

Disabled. (Windows SmartScreen behavior is managed by administrators on the PC by using Windows SmartScreen Settings in Action Center.)

Additional Information:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73559
Rule ID: SV-88223r2_rule
STIG ID: WN16-CC-000330
Severity: CAT II

Note: The Microsoft Windows Server 2016 Security Technical Implementation Guide refers to this setting by the previous name of *Configure Windows SmartScreen*. It was renamed in the Windows 10 Release 1703 Administrative Templates to *Configure Windows Defender SmartScreen*.

Note #2: This setting is available for configuration in two locations within the Administrative Templates.

- Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Defender SmartScreen\Explorer\Configure Windows Defender SmartScreen
- Computer Configuration\Policies\Administrative Templates\Windows Components\File Explorer\Configure Windows Defender SmartScreen

Note #3: In the Microsoft Windows Server 2016 Security Technical Implementation Guide this setting is set to Enabled, but no sub-setting is defined.

CIS Controls:

Version 7

2.6 Address unapproved software

Ensure that unauthorized software is either removed or the inventory is updated in a timely manner

2.7 Utilize Application Whitelisting

Utilize application whitelisting technology on all assets to ensure that only authorized software executes and all unauthorized software is blocked from executing on assets.

7.2 Disable Unnecessary or Unauthorized Browser or Email Client Plugins

Uninstall or disable any unauthorized browser or email client plugins or add-on applications.

7.3 Limit Use of Scripting Languages in Web Browsers and Email Clients

Ensure that only authorized scripting languages are able to run in all web browsers and email clients.

18.9.81 Windows Error Reporting

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `ErrorReporting.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.82 Windows Game Recording and Broadcasting

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `GameDVR.admx/adml` that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

18.9.83 Windows Hello for Business (formerly Microsoft Passport for Work)

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Passport.admx/adml` that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

Note: This section was initially named *Microsoft Passport for Work* but was renamed by Microsoft to *Windows Hello for Business* starting with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates.

18.9.84 Windows Ink Workspace

This section contains recommendations related to the Windows Ink Workspace.

This Group Policy section is provided by the Group Policy template `WindowsInkWorkspace.admx/adml` that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

18.9.84.1 (L2) Ensure 'Allow suggested apps in Windows Ink Workspace' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting determines whether suggested apps in Windows Ink Workspace are allowed.

The recommended state for this setting is: `Disabled`.

Rationale:

This Microsoft feature is designed to collect data and suggest apps based on that data collected. Disabling this setting will help ensure your data is not shared with any third party.

Impact:

The suggested apps in Windows Ink Workspace will not be allowed.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsInkWorkspace:AllowSuggestedAppsInWindowsInkWorkspace`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Ink Workspace\Allow suggested apps in Windows Ink Workspace

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `WindowsInkWorkspace.admx/adml` that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

Default Value:

Enabled. (The suggested apps in Windows Ink Workspace will be allowed.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

18.9.84.2 (L1) Ensure 'Allow Windows Ink Workspace' is set to 'Enabled: On, but disallow access above lock' OR 'Disabled' but not 'Enabled: On' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether Windows Ink items are allowed above the lock screen.

The recommended state for this setting is: Enabled: On, but disallow access above lock OR Disabled.

Rationale:

Allowing any apps to be accessed while system is locked is not recommended. If this feature is permitted, it should only be accessible once a user authenticates with the proper credentials.

Impact:

Windows Ink Workspace will not be permitted above the lock screen.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\WindowsInkWorkspace:AllowWindowsInkWorkspace

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled: On, but disallow access above lock OR Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Ink Workspace\Allow Windows Ink Workspace

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template WindowsInkWorkspace.admx/adml that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

Default Value:

Enabled. (Windows Ink Workspace is permitted above the lock screen.)

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

18.9.85 Windows Installer

This section contains recommendations related to Windows Installer.

This Group Policy section is provided by the Group Policy template `MSI.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.85.1 (L1) Ensure 'Allow user control over installs' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting controls whether users are permitted to change installation options that typically are available only to system administrators. The security features of Windows Installer normally prevent users from changing installation options that are typically reserved for system administrators, such as specifying the directory to which files are installed. If Windows Installer detects that an installation package has permitted the user to change a protected option, it stops the installation and displays a message. These security features operate only when the installation program is running in a privileged security context in which it has access to directories denied to the user.

The recommended state for this setting is: `Disabled`.

Rationale:

In an enterprise managed environment, only IT staff with administrative rights should be installing or changing software on a system. Allowing users the ability to have any control over installs can risk unapproved software from being installed or removed from a system, which could cause the system to become vulnerable to compromise.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\Installer:EnableUserControl

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Installer\Allow user control over installs

Note: This Group Policy path is provided by the Group Policy template MSI.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Note #2: In older Microsoft Windows Administrative Templates, this setting was named *Enable user control over installs*, but it was renamed starting with the Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

Default Value:

Disabled. (The security features of Windows Installer will prevent users from changing installation options typically reserved for system administrators, such as specifying the directory to which files are installed.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73583
Rule ID: SV-88247r1_rule
STIG ID: WN16-CC-000450
Severity: CAT II

CIS Controls:

Version 7

4.3 Ensure the Use of Dedicated Administrative Accounts

Ensure that all users with administrative account access use a dedicated or secondary account for elevated activities. This account should only be used for administrative activities and not internet browsing, email, or similar activities.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

18.9.85.2 (L1) Ensure 'Always install with elevated privileges' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting controls whether or not Windows Installer should use system permissions when it installs any program on the system.

Note: This setting appears both in the Computer Configuration and User Configuration folders. To make this setting effective, you must enable the setting in both folders.

Caution: If enabled, skilled users can take advantage of the permissions this setting grants to change their privileges and gain permanent access to restricted files and folders. Note that the User Configuration version of this setting is not guaranteed to be secure.

The recommended state for this setting is: `Disabled`.

Rationale:

Users with limited privileges can exploit this feature by creating a Windows Installer installation package that creates a new local account that belongs to the local built-in Administrators group, adds their current account to the local built-in Administrators group, installs malicious software, or performs other unauthorized activities.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\Installer:AlwaysInstallElevated`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Installer\Always install with elevated privileges

Note: This Group Policy path is provided by the Group Policy template `MSI.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Windows Installer will apply the current user's permissions when it installs programs that a system administrator does not distribute or offer. This will prevent standard users from installing applications that affect system-wide configuration items.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73585
Rule ID: SV-88249r1_rule
STIG ID: WN16-CC-000460
Severity: CAT I

CIS Controls:

Version 7

4.3 Ensure the Use of Dedicated Administrative Accounts

Ensure that all users with administrative account access use a dedicated or secondary account for elevated activities. This account should only be used for administrative activities and not internet browsing, email, or similar activities.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

18.9.85.3 (L2) Ensure 'Prevent Internet Explorer security prompt for Windows Installer scripts' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls whether Web-based programs are allowed to install software on the computer without notifying the user.

The recommended state for this setting is: Disabled.

Rationale:

Suppressing the system warning can pose a security risk and increase the attack surface on the system.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\Installer:SafeForScripting

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Installer\Prevent Internet Explorer security prompt for Windows Installer scripts

Note: This Group Policy path is provided by the Group Policy template `MSI.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Note #2: In older Microsoft Windows Administrative Templates, this setting was initially named *Disable IE security prompt for Windows Installer scripts*, but it was renamed starting with the Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

Default Value:

Disabled. (When a script hosted by an Internet browser tries to install a program on the system, the system warns users and allows them to select or refuse the installation.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73587
Rule ID: SV-88251r1_rule
STIG ID: WN16-CC-000470
Severity: CAT II

CIS Controls:

Version 7

7.3 Limit Use of Scripting Languages in Web Browsers and Email Clients

Ensure that only authorized scripting languages are able to run in all web browsers and email clients.

18.9.86 Windows Logon Options

This section contains recommendations related to Windows Logon Options.

This Group Policy section is provided by the Group Policy template `WinLogon.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.86.1 (L1) Ensure 'Sign-in and lock last interactive user automatically after a restart' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting controls whether a device will automatically sign-in the last interactive user after Windows Update restarts the system.

The recommended state for this setting is: `Disabled`.

Rationale:

Disabling this feature will prevent the caching of user's credentials and unauthorized use of the device, and also ensure the user is aware of the restart.

Impact:

The device does not store the user's credentials for automatic sign-in after a Windows Update restart. The users' lock screen apps are not restarted after the system restarts. The user is required to present the logon credentials in order to proceed after restart.

Note: Disable this policy setting so that the device does not store the user's credentials for automatic sign-in after a Windows Update restart and the users' lock screen apps are not restarted after the system restarts.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed.

This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System:
DisableAutomaticRestartSignOn

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Logon Options\Sign-in and lock last interactive user automatically after a restart

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template WinLogon.admx/adml that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

Note #2: In older Microsoft Windows Administrative Templates, this setting was initially named *Sign-in last interactive user automatically after a system-initiated restart*, but it was renamed starting with the Windows 10 Release 1903 Administrative Templates.

Default Value:

Enabled. (The device securely saves the user's credentials (including the user name, domain and encrypted password) to configure automatic sign-in after a Windows Update restart. After the Windows Update restart, the user is automatically signed-in and the session is automatically locked with all the lock screen apps configured for that user.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73589
Rule ID: SV-88253r1_rule
STIG ID: WN16-CC-000480
Severity: CAT II

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

18.9.87 Windows Mail

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsMail.admx/adml` that is only included with the Microsoft Windows Vista through the Windows 10 Release 1703 Administrative Templates.

18.9.88 Windows Media Center

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `MediaCenter.admx/adml` that is only included with the Microsoft Windows Vista through Windows 10 Release 1511 Administrative Templates.

18.9.89 Windows Media Digital Rights Management

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsMediaDRM.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.90 Windows Media Player

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsMediaPlayer.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.91 Windows Meeting Space

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsCollaboration.admx/adml` that is only included with the Microsoft Windows Vista and Server 2008 (non-R2) Administrative Templates.

18.9.92 Windows Messenger

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsMessenger.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.93 Windows Mobility Center

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `MobilePCMobilityCenter.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.94 Windows Movie Maker

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `MovieMaker.admx/adml` that is only included with the Microsoft Windows Vista and Server 2008 (non-R2) Administrative Templates.

18.9.95 Windows PowerShell

This section contains recommendations related to Windows PowerShell.

This Group Policy section is provided by the Group Policy template `PowerShellExecutionPolicy.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

18.9.95.1 (L1) Ensure 'Turn on PowerShell Script Block Logging' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server

Description:

This policy setting enables logging of all PowerShell script input to the Microsoft-Windows-PowerShell/Operational event log.

The recommended state for this setting is: `Disabled`.

Note: In Microsoft's own hardening guidance, they recommend the opposite value, `Enabled`, because having this data logged improves investigations of PowerShell attack incidents. However, the default ACL on the PowerShell Operational log allows Interactive User (i.e. *any* logged on user) to read it, and therefore possibly expose passwords or other sensitive information to unauthorized users. If Microsoft locks down the default ACL on that log in the future (e.g. to restrict it only to Administrators), then we will revisit this recommendation in a future release.

Rationale:

There are potential risks of capturing passwords in the PowerShell logs. This setting should only be needed for debugging purposes, and not in normal operation, it is important to ensure this is set to `Disabled`.

Impact:

Logging of PowerShell script input is disabled.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\ Policies\Microsoft\Windows\PowerShell\ScriptBlock  
Logging:EnableScriptBlockLogging
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to **Disabled**:

```
Computer Configuration\Policies\Administrative Templates\Windows  
Components\Windows PowerShell\Turn on PowerShell Script Block Logging
```

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `PowerShellExecutionPolicy.admx/adml` that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

Default Value:

Enabled. (PowerShell will log script blocks the first time they are used.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

18.9.95.2 (L3) Ensure 'Turn on PowerShell Script Block Logging' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting enables logging of all PowerShell script input to the Microsoft-Windows-PowerShell/Operational event log.

The recommended state for this setting is: Enabled.

Note: In Microsoft's own hardening guidance, they recommend the opposite value, Enabled, because having this data logged improves investigations of PowerShell attack incidents. However, the default ACL on the PowerShell Operational log allows Interactive User (i.e. *any* logged on user) to read it, and therefore possibly expose passwords or other sensitive information to unauthorized users. If Microsoft locks down the default ACL on that log in the future (e.g. to restrict it only to Administrators), then we will revisit this recommendation in a future release.

Rationale:

There are potential risks of capturing passwords in the PowerShell logs.

Impact:

Logging of PowerShell script input is disabled.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\PowerShell\ScriptBlock
Logging:EnableScriptBlockLogging

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows PowerShell\Turn on PowerShell Script Block Logging

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `PowerShellExecutionPolicy.admx/adml` that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

Default Value:

Enabled. (PowerShell will log script blocks the first time they are used.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73591
Rule ID: SV-88255r1_rule
STIG ID: WN16-CC-000490
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

18.9.95.3 (L1) Ensure 'Turn on PowerShell Transcription' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This Policy setting lets you capture the input and output of Windows PowerShell commands into text-based transcripts.

The recommended state for this setting is: Disabled.

Rationale:

If this setting is enabled there is a risk that passwords could get stored in plain text in the `PowerShell_transcript` output file.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\PowerShell\Transcription:EnableTranscripting`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows PowerShell\Turn on PowerShell Transcription

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `PowerShellExecutionPolicy.admx/adml` that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

Default Value:

Disabled. (Transcription of PowerShell-based applications is disabled by default, although transcription can still be enabled through the `Start-Transcript` cmdlet.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

18.9.96 Windows Reliability Analysis

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `RacWmiProv.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

18.9.97 Windows Remote Management (WinRM)

This section contains recommendations related to Windows Remote Management (WinRM).

This Group Policy section is provided by the Group Policy template `WindowsRemoteManagement.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.97.1 WinRM Client

This section contains recommendations related to the Windows Remote Management (WinRM) client.

This Group Policy section is provided by the Group Policy template `WindowsRemoteManagement.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.97.1.1 (L1) Ensure 'Allow Basic authentication' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to manage whether the Windows Remote Management (WinRM) client uses Basic authentication.

The recommended state for this setting is: `Disabled`.

Rationale:

Basic authentication is less robust than other authentication methods available in WinRM because credentials including passwords are transmitted in plain text. An attacker who is able to capture packets on the network where WinRM is running may be able to determine the credentials used for accessing remote hosts via WinRM.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WinRM\Client:AllowBasic

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Remote Management (WinRM)\WinRM Client\Allow Basic authentication

Note: This Group Policy path is provided by the Group Policy template WindowsRemoteManagement.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (The WinRM client does not use Basic authentication.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide: Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73593
Rule ID: SV-88257r1_rule
STIG ID: WN16-CC-000500
Severity: CAT I

CIS Controls:

Version 7

14.4 Encrypt All Sensitive Information in Transit

Encrypt all sensitive information in transit.

16.5 Encrypt Transmittal of Username and Authentication Credentials

Ensure that all account usernames and authentication credentials are transmitted across networks using encrypted channels.

18.9.97.1.2 (L1) Ensure 'Allow unencrypted traffic' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Member Server
- Level 3 - STIG Domain Controller

Description:

This policy setting allows you to manage whether the Windows Remote Management (WinRM) client sends and receives unencrypted messages over the network.

The recommended state for this setting is: Disabled.

Rationale:

Encrypting WinRM network traffic reduces the risk of an attacker viewing or modifying WinRM messages as they transit the network.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WinRM\Client:AllowUnencryptedTraffic

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Remote Management (WinRM)\WinRM Client\Allow unencrypted traffic

Note: This Group Policy path is provided by the Group Policy template WindowsRemoteManagement.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (The WinRM client sends or receives only encrypted messages over the network.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73595
Rule ID: SV-88259r1_rule
STIG ID: WN16-CC-000510
Severity: CAT II

CIS Controls:

Version 7

14.4 Encrypt All Sensitive Information in Transit

Encrypt all sensitive information in transit.

16.5 Encrypt Transmittal of Username and Authentication Credentials

Ensure that all account usernames and authentication credentials are transmitted across networks using encrypted channels.

18.9.97.1.3 (L1) Ensure 'Disallow Digest authentication' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to manage whether the Windows Remote Management (WinRM) client will not use Digest authentication.

The recommended state for this setting is: Enabled.

Rationale:

Digest authentication is less robust than other authentication methods available in WinRM, an attacker who is able to capture packets on the network where WinRM is running may be able to determine the credentials used for accessing remote hosts via WinRM.

Impact:

The WinRM client will not use Digest authentication.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WinRM\Client:AllowDigest

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Remote Management (WinRM)\WinRM Client\Disallow Digest authentication

Note: This Group Policy path is provided by the Group Policy template WindowsRemoteManagement.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (The WinRM client will use Digest authentication.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73597
Rule ID: SV-88261r1_rule
STIG ID: WN16-CC-000520
Severity: CAT II

CIS Controls:

Version 7

14.4 Encrypt All Sensitive Information in Transit

Encrypt all sensitive information in transit.

16.5 Encrypt Transmittal of Username and Authentication Credentials

Ensure that all account usernames and authentication credentials are transmitted across networks using encrypted channels.

18.9.97.2 WinRM Service

This section contains recommendations related to the Windows Remote Management (WinRM) service.

This Group Policy section is provided by the Group Policy template `WindowsRemoteManagement.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.97.2.1 (L1) Ensure 'Allow Basic authentication' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to manage whether the Windows Remote Management (WinRM) service accepts Basic authentication from a remote client.

The recommended state for this setting is: `Disabled`.

Rationale:

Basic authentication is less robust than other authentication methods available in WinRM because credentials including passwords are transmitted in plain text. An attacker who is able to capture packets on the network where WinRM is running may be able to determine the credentials used for accessing remote hosts via WinRM.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\ Policies\Microsoft\Windows\WinRM\Service:AllowBasic

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Remote Management (WinRM)\WinRM Service\Allow Basic authentication

Note: This Group Policy path is provided by the Group Policy template WindowsRemoteManagement.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (The WinRM service will not accept Basic authentication from a remote client.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73599
Rule ID: SV-88263r1_rule
STIG ID: WN16-CC-000530
Severity: CAT II

CIS Controls:

Version 7

14.4 Encrypt All Sensitive Information in Transit

Encrypt all sensitive information in transit.

16.5 Encrypt Transmittal of Username and Authentication Credentials

Ensure that all account usernames and authentication credentials are transmitted across networks using encrypted channels.

18.9.97.2.2 (L2) Ensure 'Allow remote server management through WinRM' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting allows you to manage whether the Windows Remote Management (WinRM) service automatically listens on the network for requests on the HTTP transport over the default HTTP port.

The recommended state for this setting is: Disabled.

Rationale:

Any feature is a potential avenue of attack, those that enable inbound network connections are particularly risky. Only enable the use of the Windows Remote Management (WinRM) service on trusted networks and when feasible employ additional controls such as IPsec.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy object is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WinRM\Service:AllowAutoConfig

Remediation:

To establish the recommended configuration via GP, set the following UI path to **Disabled**:

Computer Configuration\Administrative Templates\Windows Components\Windows Remote Management (WinRM)\WinRM Service\Allow remote server management through WinRM

Note: This Group Policy path is provided by the Group Policy template `WindowsRemoteManagement.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Note #2: In older Microsoft Windows Administrative Templates, this setting was initially named *Allow automatic configuration of listeners*, but it was renamed starting with the Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

Default Value:

Disabled. (The WinRM service will not respond to requests from a remote computer, regardless of whether or not any WinRM listeners are configured.)

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

18.9.97.2.3 (L1) Ensure 'Allow unencrypted traffic' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to manage whether the Windows Remote Management (WinRM) service sends and receives unencrypted messages over the network.

The recommended state for this setting is: Disabled.

Rationale:

Encrypting WinRM network traffic reduces the risk of an attacker viewing or modifying WinRM messages as they transit the network.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WinRM\Service:AllowUnencryptedTraffic
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Remote Management (WinRM)\WinRM Service\Allow unencrypted traffic

Note: This Group Policy path is provided by the Group Policy template WindowsRemoteManagement.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (The WinRM service sends or receives only encrypted messages over the network.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73601
Rule ID: SV-88265r1_rule
STIG ID: WN16-CC-000540
Severity: CAT II

CIS Controls:

Version 7

14.4 Encrypt All Sensitive Information in Transit

Encrypt all sensitive information in transit.

16.5 Encrypt Transmittal of Username and Authentication Credentials

Ensure that all account usernames and authentication credentials are transmitted across networks using encrypted channels.

18.9.97.2.4 (L1) Ensure 'Disallow WinRM from storing RunAs credentials' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to manage whether the Windows Remote Management (WinRM) service will allow RunAs credentials to be stored for any plug-ins.

The recommended state for this setting is: Enabled.

Note: If you enable and then disable this policy setting, any values that were previously configured for RunAs Password will need to be reset.

Rationale:

Although the ability to store RunAs credentials is a convenient feature it increases the risk of account compromise slightly. For example, if you forget to lock your desktop before leaving it unattended for a few minutes another person could access not only the desktop of your computer but also any hosts you manage via WinRM with cached RunAs credentials.

Impact:

The WinRM service will not allow the RunAsUser or RunAsPassword configuration values to be set for any plug-ins. If a plug-in has already set the RunAsUser and RunAsPassword configuration values, the RunAsPassword configuration value will be erased from the credential store on the computer.

If this setting is later Disabled again, any values that were previously configured for RunAsPassword will need to be reset.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\ Policies\Microsoft\Windows\WinRM\Service:DisableRunAs

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Remote Management (WinRM)\WinRM Service\Disallow WinRM from storing RunAs credentials

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template WindowsRemoteManagement.admx/adml that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Disabled. (The WinRM service will allow the RunAsUser and RunAsPassword configuration values to be set for plug-ins and the RunAsPassword value will be stored securely.)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73603
Rule ID: SV-88267r1_rule
STIG ID: WN16-CC-000550
Severity: CAT II

CIS Controls:

Version 7

14.3 Disable Workstation to Workstation Communication

Disable all workstation to workstation communication to limit an attacker's ability to move laterally and compromise neighboring systems, through technologies such as Private VLANs or microsegmentation.

18.9.98 Windows Remote Shell

This section contains settings related to Windows Remote Shell (WinRS).

This Group Policy section is provided by the Group Policy template `WindowsRemoteShell.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.98.1 (L2) Ensure 'Allow Remote Shell Access' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting allows you to manage configuration of remote access to all supported shells to execute scripts and commands.

The recommended state for this setting is: `Disabled`.

Note: The GPME help text for this setting is incorrectly worded, implying that configuring it to `Enabled` will reject new Remote Shell connections, and setting it to `Disabled` will allow Remote Shell connections. The opposite is true (and is consistent with the title of the setting). This is a wording mistake by Microsoft in the Administrative Template.

Rationale:

Any feature is a potential avenue of attack, those that enable inbound network connections are particularly risky. Only enable the use of the Windows Remote Shell on trusted networks and when feasible employ additional controls such as IPsec.

Impact:

New Remote Shell connections are not allowed and are rejected by the server.

Note: On Server 2012 (non-R2) and newer, due to design changes in the OS after Server 2008 R2, configuring this setting as prescribed will prevent the ability to add or remove Roles and Features (even locally) via the GUI. We therefore recommend that the necessary Roles and Features be installed prior to configuring this setting on a Level 2 server. Alternatively, Roles and Features can still be added or removed using the PowerShell commands `Add-WindowsFeature` or `Remove-WindowsFeature` in the Server Manager module, even with this setting configured.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy object is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WinRM\Service\WinRS:AllowRemoteShellAccess

Remediation:

To establish the recommended configuration via GP, set the following UI path to **Disabled**:

Computer Configuration\Administrative Templates\Windows Components\Windows Remote Shell\Allow Remote Shell Access

Note: This Group Policy path is provided by the Group Policy template `WindowsRemoteShell.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Enabled. (New Remote Shell connections are allowed.)

CIS Controls:

Version 7

4.5 Use Multifactor Authentication For All Administrative Access

Use multi-factor authentication and encrypted channels for all administrative account access.

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

9.3 Perform Regular Automated Port Scans

Perform automated port scans on a regular basis against all systems and alert if unauthorized ports are detected on a system.

18.9.99 Windows Security (formerly Windows Defender Security Center)

This section contains recommendations related to the Windows Security Center console settings.

This Group Policy section is provided by the Group Policy template `WindowsDefenderSecurityCenter.admx/adml` that is included with the Microsoft Windows 10 Release 1709 Administrative Templates (or newer).

Note: This section was originally named *Windows Defender Security Center* but was renamed by Microsoft to *Windows Security* starting with the Microsoft Windows 10 Release 1809 & Server 2019 Administrative Templates.

18.9.99.1 Account protection

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsDefenderSecurityCenter.admx/adml` that is included with the Microsoft Windows 10 Release 1803 Administrative Templates (or newer).

18.9.99.2 App and browser protection

This section contains App and browser protection settings.

This Group Policy section is provided by the Group Policy template `WindowsDefenderSecurityCenter.admx/adml` that is included with the Microsoft Windows 10 Release 1709 Administrative Templates (or newer).

18.9.99.2.1 (L1) Ensure 'Prevent users from modifying settings' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting prevent users from making changes to the Exploit protection settings area in the Windows Security settings.

The recommended state for this setting is: Enabled.

Rationale:

Only authorized IT staff should be able to make changes to the exploit protection settings in order to ensure the organizations specific configuration is not modified.

Impact:

Local users cannot make changes in the Exploit protection settings area.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows Defender Security Center\App and Browser protection:DisallowExploitProtectionOverride`

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Security\App and browser protection\Prevent users from modifying settings

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `WindowsDefenderSecurityCenter.admx/adml` that is included with the Microsoft Windows 10 Release 1709 Administrative Templates (or newer).

Default Value:

Disabled. (Local users are allowed to make changes in the Exploit protection settings area.)

CIS Controls:

Version 7

8.3 Enable Operating System Anti-Exploitation Features/ Deploy Anti-Exploit Technologies

Enable anti-exploitation features such as Data Execution Prevention (DEP) or Address Space Layout Randomization (ASLR) that are available in an operating system or deploy appropriate toolkits that can be configured to apply protection to a broader set of applications and executables.

18.9.100 Windows SideShow

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `SideShow.admx/adml` that is only included with the Microsoft Windows Vista Administrative Templates through Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

18.9.101 Windows System Resource Manager

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `SystemResourceManager.admx/adml` that is only included with the Microsoft Windows Vista through Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

18.9.102 Windows Update

This section contains recommendations related to Windows Update.

This Group Policy section is provided by the Group Policy template `WindowsUpdate.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

18.9.102.1 Windows Update for Business (formerly Defer Windows Updates)

This section contains recommendations related to Windows Update for Business.

This Group Policy section is provided by the Group Policy template `WindowsUpdate.admx/adml` that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

Note: This section was initially named *Defer Windows Updates* but was renamed by Microsoft to *Windows Update for Business* starting with the Microsoft Windows 10 Release 1709 Administrative Templates.

18.9.102.1.1 (L1) Ensure 'Manage preview builds' is set to 'Enabled: Disable preview builds' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether users can access the Windows Insider Program controls in Settings -> Update and Security. These controls enable users to make their devices available for downloading and installing preview (beta) builds of Windows software.

The recommended state for this setting is: Enabled: Disable preview builds.

Rationale:

It can be risky for experimental features to be allowed in an enterprise managed environment because this can introduce bugs and security holes into systems, making it easier for an attacker to gain access. It is generally preferred to only use production-ready builds.

Impact:

Preview builds are prevented from installing on the device.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WindowsUpdate:ManagePreviewBuilds  
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WindowsUpdate:ManagePreviewBuildsPolicyValue
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:
Disable preview builds:

```
Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Update\Windows Update for Business\Manage preview builds
```

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template WindowsUpdate.admx/adml that is included with the Microsoft Windows 10 Release 1709 Administrative Templates (or newer).

Default Value:

Disabled. (Preview builds are not installed on the device, unless the user opts-in through Settings -> Update and Security)

CIS Controls:

Version 7

2.3 Utilize Software Inventory Tools

Utilize software inventory tools throughout the organization to automate the documentation of all software on business systems.

2.6 Address unapproved software

Ensure that unauthorized software is either removed or the inventory is updated in a timely manner

18.9.102.1.2 (L1) Ensure 'Select when Preview Builds and Feature Updates are received' is set to 'Enabled: Semi-Annual Channel, 180 or more days' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines the level of Preview Build or Feature Updates to receive, and when.

The Windows readiness level for each new Windows 10 Feature Update is classified in one of 5 categories, depending on your organizations level of comfort with receiving them:

- **Preview Build - Fast:** Devices set to this level will be the first to receive new builds of Windows with features not yet available to the general public. Select Fast to participate in identifying and reporting issues to Microsoft, and provide suggestions on new functionality.
- **Preview Build - Slow:** Devices set to this level receive new builds of Windows before they are available to the general public, but at a slower cadence than those set to Fast, and with changes and fixes identified in earlier builds.
- **Release Preview:** Receive builds of Windows just before Microsoft releases them to the general public.
- **Semi-Annual Channel (Targeted):** Receive feature updates when they are released to the general public.
- **Semi-Annual Channel:** Feature updates will arrive when they are declared Semi-Annual Channel. This usually occurs about 4 months after Semi-Annual Channel (Targeted), indicating that Microsoft, Independent Software Vendors (ISVs), partners and customer believe that the release is ready for broad deployment.

The recommended state for this setting is: Enabled: Semi-Annual Channel, 180 or more days.

Note: If the "Allow Telemetry" policy is set to 0, this policy will have no effect.

Note #2: Starting with Windows Server 2016 RTM (Release 1607), Microsoft introduced a new Windows Update (WU) client behavior called **Dual Scan**, with an eye to cloud-based update management. In some cases, this Dual Scan feature can interfere with Windows Updates from Windows Server Update Services (WSUS) and/or manual WU updates. If you are using WSUS in your environment, you may need to set the above setting to **Not Configured** or configure the setting *Do not allow update deferral policies to cause scans against Windows Update* (added in the Windows 10 Release 1709 Administrative Templates) in order to prevent the Dual Scan feature from interfering. More information on Dual Scan is available at these links:

- [Demystifying “Dual Scan” – WSUS Product Team Blog](#)
- [Improving Dual Scan on 1607 – WSUS Product Team Blog](#)

Note #3: Prior to Windows Server 2016 R1709, values above 180 days are not recognized by the OS. Starting with Windows Server 2016 R1709, the maximum number of days you can defer is 365 days.

Rationale:

Forcing new features without prior testing in your environment could cause software incompatibilities as well as introducing new bugs into the operating system. In an enterprise managed environment, it is generally preferred to delay Feature Updates until thorough testing and a deployment plan is in place. This recommendation delays the *automatic* installation of new features as long as possible.

Impact:

Feature Updates will be delayed until 180 or more days after they are declared to have a Windows readiness level of "Semi-Annual Channel".

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WindowsUpdate:DeferFeatureUpdates  
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WindowsUpdate:BranchReadinessLevel  
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WindowsUpdate:DeferFeatureUpdatesPeriodInDays
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled: Semi-Annual Channel, 180 or more days:

```
Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Update\Windows Update for Business>Select when Preview Builds and Feature Updates are received
```

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template WindowsUpdate.admx/adml that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

Note #2: In older Microsoft Windows Administrative Templates, this setting was initially named *Select when Feature Updates are received*, but it was renamed to *Select when Preview Builds and Feature Updates are received* starting with the Windows 10 Release 1709 Administrative Templates.

Default Value:

Disabled. (Feature Updates will not be delayed when released by Microsoft.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

18.9.102.1.3 (L1) Ensure 'Select when Quality Updates are received' is set to 'Enabled: 0 days' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting controls when Quality Updates are received.

The recommended state for this setting is: Enabled: 0 days.

Note: If the "Allow Telemetry" policy is set to 0, this policy will have no effect.

Note #2: Starting with Windows Server 2016 RTM (Release 1607), Microsoft introduced a new Windows Update (WU) client behavior called **Dual Scan**, with an eye to cloud-based update management. In some cases, this Dual Scan feature can interfere with Windows Updates from Windows Server Update Services (WSUS) and/or manual WU updates. If you are using WSUS in your environment, you may need to set the above setting to `Not Configured` or configure the setting *Do not allow update deferral policies to cause scans against Windows Update* (added in the Windows 10 Release 1709 Administrative Templates) in order to prevent the Dual Scan feature from interfering. More information on Dual Scan is available at these links:

- [Demystifying “Dual Scan” – WSUS Product Team Blog](#)
- [Improving Dual Scan on 1607 – WSUS Product Team Blog](#)

Rationale:

Quality Updates can contain important bug fixes and/or security patches, and should be installed as soon as possible.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WindowsUpdate:DeferQualityUpdates  
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WindowsUpdate:DeferQualityUpdatesPeriodInDays
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:0 days:

```
Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Update\Windows Update for Business>Select when Quality Updates are received
```

Note: This Group Policy path does not exist by default. An updated Group Policy template (WindowsUpdate.admx/adml) is required - it is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

Default Value:

Enabled: 0 days. (Install new Quality Updates as soon as they are available.)

CIS Controls:

Version 7

3.4 Deploy Automated Operating System Patch Management Tools

Deploy automated software update tools in order to ensure that the operating systems are running the most recent security updates provided by the software vendor.

3.5 Deploy Automated Software Patch Management Tools

Deploy automated software update tools in order to ensure that third-party software on all systems is running the most recent security updates provided by the software vendor.

18.9.102.2 (L1) Ensure 'Configure Automatic Updates' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting specifies whether computers in your environment will receive security updates from Windows Update or WSUS. If you configure this policy setting to Enabled, the operating system will recognize when a network connection is available and then use the network connection to search Windows Update or your designated intranet site for updates that apply to them.

After you configure this policy setting to Enabled, select one of the following three options in the Configure Automatic Updates Properties dialog box to specify how the service will work:

- 2 - Notify for download and auto install (*Notify before downloading any updates*)
- 3 - Auto download and notify for install (*Download the updates automatically and notify when they are ready to be installed.*) (*Default setting*)
- 4 - Auto download and schedule the install (*Automatically download updates and install them on the schedule specified below.*)
- 5 - Allow local admin to choose setting (*Leave decision on above choices up to the local Administrators (Not Recommended)*)

The recommended state for this setting is: `Enabled`.

Note: The sub-setting "*Configure automatic updating:*" has 4 possible values – all of them are valid depending on specific organizational needs, however if feasible we suggest using a value of 4 – Auto download and schedule the install. This suggestion is not a scored requirement.

Note #2: Organizations that utilize a 3rd-party solution for patching may choose to exempt themselves from this recommendation, and instead configure it to `Disabled` so that the native Windows Update mechanism does not interfere with the 3rd-party patching process.

Rationale:

Although each version of Windows is thoroughly tested before release, it is possible that problems will be discovered after the products are shipped. The Configure Automatic Updates setting can help you ensure that the computers in your environment will always have the most recent critical operating system updates and service packs installed.

Impact:

Critical operating system updates and service packs will be installed as necessary.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WindowsUpdate\AU>NoAutoUpdate

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Update\Configure Automatic Updates

Note: This Group Policy path is provided by the Group Policy template WindowsUpdate.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Enabled: 3 - Auto download and notify for install. (Windows finds updates that apply to the computer and downloads them in the background (the user is not notified or interrupted during this process). When the downloads are complete, users will be notified that they are ready to install. After going to Windows Update, users can install them.)

CIS Controls:

Version 7

3.4 Deploy Automated Operating System Patch Management Tools

Deploy automated software update tools in order to ensure that the operating systems are running the most recent security updates provided by the software vendor.

3.5 Deploy Automated Software Patch Management Tools

Deploy automated software update tools in order to ensure that third-party software on all systems is running the most recent security updates provided by the software vendor.

18.9.102.3 (L1) Ensure 'Configure Automatic Updates: Scheduled install day' is set to '0 - Every day' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting specifies when computers in your environment will receive security updates from Windows Update or WSUS.

The recommended state for this setting is: 0 – Every day.

Note: This setting is only applicable if 4 – Auto download and schedule the install is selected in Rule 18.9.102.2. It will have no impact if any other option is selected.

Rationale:

Although each version of Windows is thoroughly tested before release, it is possible that problems will be discovered after the products are shipped. The Configure Automatic Updates setting can help you ensure that the computers in your environment will always have the most recent critical operating system updates and service packs installed.

Impact:

If 4 – Auto download and schedule the install is selected in Rule 18.9.102.2, critical operating system updates and service packs will automatically download every day (at 3:00 A.M., by default).

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WindowsUpdate\AU:ScheduledInstallDay

Remediation:

To establish the recommended configuration via GP, set the following UI path to 0 - Every day:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Update\Configure Automatic Updates: Scheduled install day

Note: This Group Policy path is provided by the Group Policy template WindowsUpdate.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Not Defined. (Since the default value of Configure Automatic Updates is 3 - Auto download and notify for install, this setting is not applicable by default.)

CIS Controls:

Version 7

3.4 Deploy Automated Operating System Patch Management Tools

Deploy automated software update tools in order to ensure that the operating systems are running the most recent security updates provided by the software vendor.

3.5 Deploy Automated Software Patch Management Tools

Deploy automated software update tools in order to ensure that third-party software on all systems is running the most recent security updates provided by the software vendor.

18.9.102.4 (L1) Ensure 'No auto-restart with logged on users for scheduled automatic updates installations' is set to 'Disabled'
(Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting specifies that Automatic Updates will wait for computers to be restarted by the users who are logged on to them to complete a scheduled installation.

The recommended state for this setting is: Disabled.

Note: This setting applies only when you configure Automatic Updates to perform scheduled update installations. If you configure the Configure Automatic Updates setting to Disabled, this setting has no effect.

Rationale:

Some security updates require that the computer be restarted to complete an installation. If the computer cannot restart automatically, then the most recent update will not completely install and no new updates will download to the computer until it is restarted. Without the auto-restart functionality, users who are not security-conscious may choose to indefinitely delay the restart, therefore keeping the computer in a less secure state.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WindowsUpdate\AU>NoAutoRebootWithLoggedOnUsers

Remediation:

To establish the recommended configuration via GP, set the following UI path to **Disabled**:

Computer Configuration\Policies\Administrative Templates\Windows Components\Windows Update\No auto-restart with logged on users for scheduled automatic updates installations

Note: This Group Policy path is provided by the Group Policy template WindowsUpdate.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Note #2: In older Microsoft Windows Administrative Templates, this setting was initially named *No auto-restart for scheduled Automatic Updates installations*, but it was renamed starting with the Windows 7 & Server 2008 R2 Administrative Templates.

Default Value:

Disabled. (Automatic Updates will notify the user that the computer will automatically restart in 5 minutes to complete the installation of security updates.)

CIS Controls:

Version 7

3.4 Deploy Automated Operating System Patch Management Tools

Deploy automated software update tools in order to ensure that the operating systems are running the most recent security updates provided by the software vendor.

3.5 Deploy Automated Software Patch Management Tools

Deploy automated software update tools in order to ensure that third-party software on all systems is running the most recent security updates provided by the software vendor.

19 Administrative Templates (User)

This section contains user-based recommendations from Group Policy Administrative Templates (ADMX).

19.1 Control Panel

This section contains recommendations for Control Panel settings.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.1.1 Add or Remove Programs

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `AddRemovePrograms.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.1.2 Display

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `ControlPanelDisplay.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.1.3 Personalization (formerly Desktop Themes)

This section contains recommendations for personalization settings.

This Group Policy section is provided by the Group Policy template `ControlPanelDisplay.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Note: This section was initially named *Desktop Themes* but was renamed by Microsoft to *Personalization* starting with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates.

19.1.3.1 (L1) Ensure 'Enable screen saver' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting enables/disables the use of desktop screen savers.

The recommended state for this setting is: Enabled.

Rationale:

If a user forgets to lock their computer when they walk away, it is possible that a passerby will hijack it. Configuring a timed screen saver with password lock will help to protect against these hijacks.

Impact:

A screen saver runs, provided that the following two conditions hold: First, a valid screen saver on the client is specified through the *Force specific screen saver* setting (Rule 19.1.3.2) or through Control Panel on the client computer. Second, the *Screen saver timeout* setting (Rule 19.1.3.4) is set to a nonzero value through the setting or through Control Panel.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_USERS\[USER SID]\Software\Policies\Microsoft\Windows\Control Panel\Desktop:ScreenSaveActive

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

User Configuration\Policies\Administrative Templates\Control Panel\Personalization\Enable screen saver

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template ControlPanelDisplay.admx/adml that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

Default Value:

Enabling/disabling the screen saver is managed locally by the user.

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

19.1.3.2 (L1) Ensure 'Force specific screen saver: Screen saver executable name' is set to 'Enabled: scrnsave.scr' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting specifies the screen saver for the user's desktop.

The recommended state for this setting is: Enabled: scrnsave.scr.

Note: If the specified screen saver is not installed on a computer to which this setting applies, the setting is ignored.

Rationale:

If a user forgets to lock their computer when they walk away, it is possible that a passerby will hijack it. Configuring a timed screen saver with password lock will help to protect against these hijacks.

Impact:

The system displays the specified screen saver on the user's desktop. The drop-down list of screen savers in the Screen Saver dialog in the Personalization or Display Control Panel will be disabled, preventing users from changing the screen saver.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_USERS\[USER SID]\Software\Policies\Microsoft\Windows\Control Panel\Desktop:SCRNSAVE.EXE

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:
scrnsave.scr:

User Configuration\Policies\Administrative Templates\Control Panel\Personalization\Force specific screen saver

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template ControlPanelDisplay.admx/adml that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

Default Value:

Disabled. (Users can select any screen saver.)

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

19.1.3.3 (L1) Ensure 'Password protect the screen saver' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting determines whether screen savers used on the computer are password protected.

The recommended state for this setting is: Enabled.

Rationale:

If a user forgets to lock their computer when they walk away, it is possible that a passerby will hijack it. Configuring a timed screen saver with password lock will help to protect against these hijacks.

Impact:

All screen savers are password protected. The "Password protected" checkbox on the Screen Saver dialog in the Personalization or Display Control Panel will be disabled, preventing users from changing the password protection setting.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_USERS\[USER SID]\Software\Policies\Microsoft\Windows\Control Panel\Desktop:ScreenSaverIsSecure

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

User Configuration\Policies\Administrative Templates\Control Panel\Personalization\Password protect the screen saver

Note: This Group Policy path is provided by the Group Policy template ControlPanelDisplay.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Whether or not to password protect each screen saver is managed locally by the user.

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

19.1.3.4 (L1) Ensure 'Screen saver timeout' is set to 'Enabled: 900 seconds or fewer, but not 0' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting specifies how much user idle time must elapse before the screen saver is launched.

The recommended state for this setting is: Enabled: 900 seconds or fewer, but not 0.

Note: This setting has no effect under the following circumstances:

- The wait time is set to zero.
- The "Enable Screen Saver" setting is disabled.
- A valid screen existing saver is not selected manually or via the "Screen saver executable name" setting

Rationale:

If a user forgets to lock their computer when they walk away, it is possible that a passerby will hijack it. Configuring a timed screen saver with password lock will help to protect against these hijacks.

Impact:

The screen saver will automatically activate when the computer has been left unattended for the amount of time specified, and the users will not be able to change the timeout value.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_USERS\[USER SID]\Software\Policies\Microsoft\Windows\Control Panel\Desktop:ScreenSaveTimeOut

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled: 900 or fewer, but not 0:

User Configuration\Policies\Administrative Templates\Control Panel\Personalization\Screen saver timeout

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template ControlPanelDisplay.admx/adml that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

Default Value:

15 minutes. (May subsequently be reconfigured locally by the user.)

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

19.2 Desktop

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.3 Network

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.4 Shared Folders

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `SharedFolders.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.5 Start Menu and Taskbar

This section contains recommendations for Start Menu and Taskbar settings.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.5.1 Notifications

This section contains recommendations for Notification settings.

This Group Policy section is provided by the Group Policy template `WPN.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

19.5.1.1 (L1) Ensure 'Turn off toast notifications on the lock screen' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting turns off toast notifications on the lock screen.

The recommended state for this setting is `Enabled`.

Rationale:

While this feature can be handy for users, applications that provide toast notifications might display sensitive personal or business data while the device is left unattended.

Impact:

Applications will not be able to raise toast notifications on the lock screen.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_USERS\[USER  
SID]\Software\Policies\Microsoft\Windows\CurrentVersion\PushNotifications:NoT  
oastApplicationNotificationOnLockScreen
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

```
User Configuration\Policies\Administrative Templates\Start Menu and  
Taskbar\Notifications\Turn off toast notifications on the lock screen
```

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `WPN.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

Default Value:

Disabled. (Toast notifications on the lock screen are enabled and can be turned off by the administrator or user.)

CIS Controls:

Version 7

16.11 Lock Workstation Sessions After Inactivity

Automatically lock workstation sessions after a standard period of inactivity.

19.6 System

This section contains recommendations for System settings.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.6.1 Ctrl+Alt+Del Options

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `CtrlAltDel.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.6.2 Display

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Display.admx/adml` that is included with the Microsoft Windows 10 Release 1803 Administrative Templates (or newer).

19.6.3 Driver Installation

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `DeviceInstallation.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.6.4 Folder Redirection

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `FolderRedirection.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.6.5 Group Policy

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `GroupPolicy.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.6.6 Internet Communication Management

This section contains recommendations related to Internet Communication Management.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.6.6.1 Internet Communication settings

This section contains recommendations related to Internet Communication settings.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.6.6.1.1 (L2) Ensure 'Turn off Help Experience Improvement Program' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting specifies whether users can participate in the Help Experience Improvement program. The Help Experience Improvement program collects information about how customers use Windows Help so that Microsoft can improve it.

The recommended state for this setting is: Enabled.

Rationale:

Large enterprise managed environments may not want to have information collected by Microsoft from managed client computers.

Impact:

Users cannot participate in the Help Experience Improvement program.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_USERS\[USER  
SID]\Software\Policies\Microsoft\Assistance\Client\1.0>NoImplicitFeedback
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

```
User Configuration\Policies\Administrative Templates\System\Internet  
Communication Management\Internet Communication Settings\Turn off Help  
Experience Improvement Program
```

Note: This Group Policy path is provided by the Group Policy template HelpAndSupport.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Users can turn on the Help Experience Improvement program feature from the Help and Support settings page.)

CIS Controls:

Version 7

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

19.7 Windows Components

This section contains recommendations for Windows Component settings.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.1 Add features to Windows 8 / 8.1 / 10 (formerly Windows Anytime Upgrade)

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsAnytimeUpgrade.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

Note: This section was initially named *Windows Anytime Upgrade* but was renamed by Microsoft to *Add features to Windows x* starting with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

19.7.2 App runtime

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `AppXRuntime.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

19.7.3 Application Compatibility

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `AppCompat.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.4 Attachment Manager

This section contains recommendations related to Attachment Manager.

This Group Policy section is provided by the Group Policy template `AttachmentManager.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.4.1 (L1) Ensure 'Do not preserve zone information in file attachments' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting allows you to manage whether Windows marks file attachments with information about their zone of origin (such as restricted, Internet, intranet, local). This requires NTFS in order to function correctly, and will fail without notice on FAT32. By not preserving the zone information, Windows cannot make proper risk assessments.

The recommended state for this setting is: `Disabled`.

Note: The Attachment Manager feature warns users when opening or executing files which are marked as being from an untrusted source, unless/until the file's zone information has been removed via the "Unblock" button on the file's properties or via a separate tool such as [Microsoft Sysinternals Streams](#).

Rationale:

A file that is downloaded from a computer in the Internet or Restricted Sites zone may be moved to a location that makes it appear safe, like an intranet file share, and executed by an unsuspecting user. The Attachment Manager feature will warn users when opening or executing files which are marked as being from an untrusted source, unless/until the file's zone information has been removed.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_USERS\[USER  
SID]\Software\Microsoft\Windows\CurrentVersion\Policies\Attachments:SaveZoneInformation
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

```
User Configuration\Policies\Administrative Templates\Windows  
Components\Attachment Manager\Do not preserve zone information in file  
attachments
```

Note: This Group Policy path is provided by the Group Policy template `AttachmentManager.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Windows marks file attachments with their zone information.)

CIS Controls:

Version 7

7.1 Ensure Use of Only Fully Supported Browsers and Email Clients

Ensure that only fully supported web browsers and email clients are allowed to execute in the organization, ideally only using the latest version of the browsers and email clients provided by the vendor.

19.7.4.2 (L1) Ensure 'Notify antivirus programs when opening attachments' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting manages the behavior for notifying registered antivirus programs. If multiple programs are registered, they will all be notified.

The recommended state for this setting is: Enabled.

Note: An updated antivirus program must be installed for this policy setting to function properly.

Rationale:

Antivirus programs that do not perform on-access checks may not be able to scan downloaded files.

Impact:

Windows tells the registered antivirus program(s) to scan the file when a user opens a file attachment. If the antivirus program fails, the attachment is blocked from being opened.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_USERS\[USER  
SID]\Software\Microsoft\Windows\CurrentVersion\Policies\Attachments:ScanWithAntiVirus
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

User Configuration\Policies\Administrative Templates\Windows Components\Attachment Manager\Notify antivirus programs when opening attachments

Note: This Group Policy path is provided by the Group Policy template AttachmentManager.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Windows does not call the registered antivirus program(s) when file attachments are opened.)

CIS Controls:

Version 7

7.10 Sandbox All Email Attachments

Use sandboxing to analyze and block inbound email attachments with malicious behavior.

7.9 Block Unnecessary File Types

Block all e-mail attachments entering the organization's e-mail gateway if the file types are unnecessary for the organization's business.

8.1 Utilize Centrally Managed Anti-malware Software

Utilize centrally managed anti-malware software to continuously monitor and defend each of the organization's workstations and servers.

8.2 Ensure Anti-Malware Software and Signatures are Updated

Ensure that the organization's anti-malware software updates its scanning engine and signature database on a regular basis.

19.7.5 AutoPlay Policies

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `AutoPlay.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.6 Backup

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `UserdataBackup.admx/adml` that is included only with the Microsoft Windows Vista through Windows 8.0 & Server 2012 (non-R2) Administrative Templates, as well as the Microsoft Windows 10 RTM (Release 1507) and Windows 10 Release 1511 Administrative Templates.

19.7.7 Cloud Content

This section contains recommendations for Cloud Content.

This Group Policy section is provided by the Group Policy template `CloudContent.admx/adml` that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

19.7.7.1 (L1) Ensure 'Configure Windows spotlight on lock screen' is set to Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting lets you configure Windows Spotlight on the lock screen.

The recommended state for this setting is: `Disabled`.

Note: [Per Microsoft TechNet](#), this policy setting only applies to Windows 10 Enterprise and Windows 10 Education editions.

Rationale:

Enabling this setting will help ensure your data is not shared with any third party. The Windows Spotlight feature collects data and uses that data to display suggested apps as well as images from the internet.

Impact:

Windows Spotlight will be turned off and users will no longer be able to select it as their lock screen.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_USERS\[USER  
SID]\Software\Policies\Microsoft\Windows\CloudContent:ConfigureWindowsSpotlig  
ht
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Disabled:

```
User Configuration\Policies\Administrative Templates\Windows Components\Cloud  
Content\Configure Windows spotlight on lock screen
```

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template `CloudContent.admx/adml` that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

Default Value:

Enabled. (Windows Spotlight is set as the lock screen provider.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

19.7.7.2 (L1) Ensure 'Do not suggest third-party content in Windows spotlight' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether Windows will suggest apps and content from third-party software publishers.

The recommended state for this setting is: Enabled.

Rationale:

Enabling this setting will help ensure your data is not shared with any third party. The Windows Spotlight feature collects data and uses that data to display suggested apps as well as images from the internet.

Impact:

Windows Spotlight on lock screen, Windows tips, Microsoft consumer features and other related features will no longer suggest apps and content from third-party software publishers. Users may still see suggestions and tips to make them more productive with Microsoft features and apps.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_USERS\[USER  
SID]\Software\Policies\Microsoft\Windows\CloudContent:DisableThirdPartySuggestions
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

User Configuration\Policies\Administrative Templates\Windows Components\Cloud Content\Do not suggest third-party content in Windows spotlight

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template CloudContent.admx/adml that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

Default Value:

Disabled. (Apps and content from third-party software publishers will be suggested in addition to Microsoft apps and content.)

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

19.7.7.3 (L2) Ensure 'Do not use diagnostic data for tailored experiences' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This setting determines if Windows can use diagnostic data to provide tailored experiences to the user.

The recommended state for this setting is: Enabled.

Rationale:

Tracking, collection and utilization of personalized data is a privacy and security issue that is of concern to many organizations.

Impact:

Windows will not use diagnostic data from this device (this data may include browser, app and feature usage, depending on the "Diagnostic and usage data" setting value) to customize content shown on the lock screen, Windows tips, Microsoft consumer features and other related features. If these features are enabled, users will still see recommendations, tips and offers, but they may be less personalized.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_USERS\[USER  
SID]\Software\Policies\Microsoft\Windows\CloudContent:DisableTailoredExperiencesWithDiagnosticData
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

User Configuration\Policies\Administrative Templates\Windows Components\Cloud Content\Do not use diagnostic data for tailored experiences

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template CloudContent.admx/adml that is included with the Microsoft Windows 10 Release 1703 Administrative Templates (or newer).

Default Value:

Disabled. (Microsoft will use diagnostic data to provide personalized recommendations, tips and offers.)

CIS Controls:

Version 7

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

19.7.7.4 (L2) Ensure 'Turn off all Windows spotlight features' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This policy setting lets you turn off all Windows Spotlight features at once.

The recommended state for this setting is: Enabled.

Note: [Per Microsoft TechNet](#), this policy setting only applies to Windows 10 Enterprise and Windows 10 Education editions.

Rationale:

Enabling this setting will help ensure your data is not shared with any third party. The Windows Spotlight feature collects data and uses that data to display suggested apps as well as images from the internet.

Impact:

Windows Spotlight on lock screen, Windows tips, Microsoft consumer features and other related features will be turned off.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_USERS\[USER  
SID]\Software\Policies\Microsoft\Windows\CloudContent:DisableWindowsSpotlight  
Features
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

User Configuration\Policies\Administrative Templates\Windows Components\Cloud Content\Turn off all Windows spotlight features

Note: This Group Policy path may not exist by default. It is provided by the Group Policy template CloudContent.admx/adml that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

Default Value:

Disabled. (Windows Spotlight features are allowed.)

CIS Controls:

Version 7

13.3 Monitor and Block Unauthorized Network Traffic

Deploy an automated tool on network perimeters that monitors for unauthorized transfer of sensitive information and blocks such transfers while alerting information security professionals.

19.7.8 Credential User Interface

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `CredUI.admx/adml` that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

19.7.9 Data Collection and Preview Builds

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `DataCollection.admx/adml` that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

19.7.10 Desktop Gadgets

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `sidebar.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

19.7.11 Desktop Window Manager

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `DWM.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.12 Digital Locker

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `DigitalLocker.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.13 Edge UI

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `EdgeUI.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

19.7.14 File Explorer (formerly Windows Explorer)

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Note: This section was initially named *Windows Explorer* but was renamed by Microsoft to *File Explorer* starting with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates.

19.7.15 File Revocation

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `FileRevocation.admx/adml` that is included with the Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates (or newer).

19.7.16 IME

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `EAIME.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates (or newer).

19.7.17 Import Video

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `CaptureWizard.admx/adml` that is only included with the Microsoft Windows Vista and Windows Server 2008 (non-R2) Administrative Templates.

19.7.18 Instant Search

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WordWheel.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.19 Internet Explorer

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `IinetRes.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.20 Location and Sensors

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Sensors.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

19.7.21 Microsoft Edge

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `MicrosoftEdge.admx/adml` that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

19.7.22 Microsoft Management Console

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `MMC.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.23 Microsoft User Experience Virtualization

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `UserExperienceVirtualization.admx/adml` that is included with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates (or newer).

19.7.24 NetMeeting

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Conf.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.25 Network Projector

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `NetworkProjection.admx/adml` that is only included with the Microsoft Windows Vista through the Windows 8.1 Update & Server 2012 R2 Update Administrative Templates.

19.7.26 Network Sharing

This section contains recommendations related to Network Sharing.

This Group Policy section is provided by the Group Policy template `Sharing.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.26.1 (L1) Ensure 'Prevent users from sharing files within their profile.' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This policy setting determines whether users can share files within their profile. By default, users are allowed to share files within their profile to other users on their network after an administrator opts in the computer. An administrator can opt in the computer by using the sharing wizard to share a file within their profile.

The recommended state for this setting is: `Enabled`.

Rationale:

If not properly configured, a user could accidentally share sensitive data with unauthorized users. In an enterprise managed environment, the company should provide a managed location for file sharing, such as a file server or SharePoint, instead of the user sharing files directly from their own user profile.

Impact:

Users cannot share files within their profile using the sharing wizard. Also, the sharing wizard cannot create a share at `%root%\Users` and can only be used to create SMB shares on folders.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

```
HKEY_USERS\[USER  
SID]\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer>NoInplaceSha  
ring
```

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

```
User Configuration\Policies\Administrative Templates\Windows  
Components\Network Sharing\Prevent users from sharing files within their  
profile.
```

Note: This Group Policy path is provided by the Group Policy template Sharing.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Users can share files out of their user profile after an administrator has opted in the computer.)

CIS Controls:

Version 7

14.6 Protect Information through Access Control Lists

Protect all information stored on systems with file system, network share, claims, application, or database specific access control lists. These controls will enforce the principle that only authorized individuals should have access to the information based on their need to access the information as a part of their responsibilities.

19.7.27 OOBE

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `OOBE.admx/adml` that is included with the Microsoft Windows 10 Release 1809 and Server 2019 Administrative Templates (or newer).

19.7.28 Presentation Settings

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `MobilePCPresentationSettings.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.29 Remote Desktop Services (formerly Terminal Services)

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `TerminalServer.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Note: This section was initially named *Terminal Services* but was renamed by Microsoft to *Remote Desktop Services* starting with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates.

19.7.30 RSS Feeds

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `InetRes.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.31 Search

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Search.admx/adml` that is included with the Microsoft Windows 7 & Server 2008 R2 Administrative Templates (or newer).

19.7.32 Sound Recorder

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `SoundRec.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.33 Store

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WinStoreUI.admx/adml` that is included with the Microsoft Windows 8.0 & Server 2012 (non-R2) Administrative Templates and Microsoft Windows 8.1 & Server 2012 R2 Administrative Templates, or by the Group Policy template `WindowsStore.admx/adml` that is included with the Microsoft Windows 10 Release 1511 Administrative Templates (or newer).

19.7.34 Tablet PC

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Windows.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.35 Task Scheduler

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `TaskScheduler.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.36 Windows Calendar

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WinCal.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.37 Windows Color System

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsColorSystem.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.38 Windows Defender SmartScreen

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `SmartScreen.admx/adml` that is included with the Microsoft Windows 10 Release 1703 Administrative Templates (or newer).

19.7.39 Windows Error Reporting

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `ErrorReporting.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.40 Windows Hello for Business (formerly Microsoft Passport for Work)

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `Passport.admx/adml` that is included with the Microsoft Windows 10 RTM (Release 1507) Administrative Templates (or newer).

Note: This section was initially named *Microsoft Passport for Work* but was renamed by Microsoft to *Windows Hello for Business* starting with the Microsoft Windows 10 Release 1607 & Server 2016 Administrative Templates.

19.7.41 Windows Installer

This section contains recommendations related to Windows Installer.

This Group Policy section is provided by the Group Policy template `MSI.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.41.1 (L1) Ensure 'Always install with elevated privileges' is set to 'Disabled' (Automated)

Profile Applicability:

- Level 1 - Domain Controller
- Level 1 - Member Server
- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting controls whether or not Windows Installer should use system permissions when it installs any program on the system.

Note: This setting appears both in the Computer Configuration and User Configuration folders. To make this setting effective, you must enable the setting in both folders.

Caution: If enabled, skilled users can take advantage of the permissions this setting grants to change their privileges and gain permanent access to restricted files and folders. Note that the User Configuration version of this setting is not guaranteed to be secure.

The recommended state for this setting is: `Disabled`.

Rationale:

Users with limited privileges can exploit this feature by creating a Windows Installer installation package that creates a new local account that belongs to the local built-in Administrators group, adds their current account to the local built-in Administrators group, installs malicious software, or performs other unauthorized activities.

Impact:

None - this is the default behavior.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_USERS\[USER
SID]\Software\Policies\Microsoft\Windows\Installer:AlwaysInstallElevated

Remediation:

To establish the recommended configuration via GP, set the following UI path to **Disabled**:

User Configuration\Policies\Administrative Templates\Windows Components\Windows Installer\Always install with elevated privileges

Note: This Group Policy path is provided by the Group Policy template `MSI.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Disabled. (Windows Installer will apply the current user's permissions when it installs programs that a system administrator does not distribute or offer. This will prevent standard users from installing applications that affect system-wide configuration items.)

CIS Controls:

Version 7

4.3 Ensure the Use of Dedicated Administrative Accounts

Ensure that all users with administrative account access use a dedicated or secondary account for elevated activities. This account should only be used for administrative activities and not internet browsing, email, or similar activities.

4.6 Use of Dedicated Machines For All Administrative Tasks

Ensure administrators use a dedicated machine for all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading e-mail, composing documents, or browsing the Internet.

19.7.42 Windows Logon Options

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WinLogon.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.43 Windows Mail

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsMail.admx/adml` that is only included with the Microsoft Windows Vista through Windows 10 Release 1703 Administrative Templates.

19.7.44 Windows Media Center

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `MediaCenter.admx/adml` that is only included with the Microsoft Windows Vista through Windows 10 Release 1511 Administrative Templates.

19.7.45 Windows Media Player

This section contains recommendations related to Windows Media Player.

This Group Policy section is provided by the Group Policy template `WindowsMediaPlayer.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.45.1 Networking

This section is intentionally blank and exists to ensure the structure of Windows benchmarks is consistent.

This Group Policy section is provided by the Group Policy template `WindowsMediaPlayer.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.45.2 Playback

This section contains recommendations related to Windows Media Player playback.

This Group Policy section is provided by the Group Policy template `WindowsMediaPlayer.admx/adml` that is included with all versions of the Microsoft Windows Administrative Templates.

19.7.45.2.1 (L2) Ensure 'Prevent Codec Download' is set to 'Enabled' (Automated)

Profile Applicability:

- Level 2 - Domain Controller
- Level 2 - Member Server

Description:

This setting controls whether Windows Media Player is allowed to download additional codecs for decoding media files it does not already understand.

The recommended state for this setting is: `Enabled`.

Rationale:

This has some potential for risk if a malicious data file is opened in Media Player that requires an additional codec to be installed. If a special codec is required for a necessary job function, then that codec should first be tested to ensure it is legitimate, and it should be supplied by the IT department in the organization.

Impact:

Windows Media Player is prevented from automatically downloading codecs to your computer. In addition, the *Download codecs automatically* check box on the Player tab in the Player is not available.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_USERS\ [USER SID]\Software\Policies\Microsoft\WindowsMediaPlayer:PreventCodecDownload

Remediation:

To establish the recommended configuration via GP, set the following UI path to Enabled:

User Configuration\Policies\Administrative Templates\Windows Components\Windows Media Player\Playback\Prevent Codec Download

Note: This Group Policy path is provided by the Group Policy template WindowsMediaPlayer.admx/adml that is included with all versions of the Microsoft Windows Administrative Templates.

Default Value:

Users can change the setting for the *Download codecs automatically* check box.

CIS Controls:

Version 7

2.3 Utilize Software Inventory Tools

Utilize software inventory tools throughout the organization to automate the documentation of all software on business systems.

2.6 Address unapproved software

Ensure that unauthorized software is either removed or the inventory is updated in a timely manner

20 Additional Security Technical Implementation Guide (STIG) Settings

This section contains additional Security Technical Implementation Guide (STIG) settings that may not controlled through Group Policy.

20.1 (L3) Ensure 'DoD Interoperability Root CA cross-certificates must be installed in the Untrusted Certificates Store on unclassified systems' (Manual)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting ensures that the Interoperability Root CA cross-certificates are installed in the Untrusted Certificate Store on unclassified systems.

The STIG recommended state for this setting is: DoD Root CA 2 - DoD Interoperability Root CA 1 - 22BBE981F0694D246CC1472ED2B021DC8540A22F and DoD Root CA 3 - DoD Interoperability Root CA 2 - AC06108CA348CC03B53795C64BF84403C1DBD341

Rationale:

If the Interoperability Root CA cross-certificates are not installed in the Untrusted Certificates Store users may experience denial of service when performing certificate-based authentication to DoD websites due to the system chaining to a root other than DoD Root CAs.

Note: This requirement only applies to unclassified systems.

Impact:

None

Audit:

To establish the recommended configuration, navigate to Certificate Store and make sure the following certificates are installed: DoD Root CA 2 - DoD Interoperability Root CA 1 - 22BBE981F0694D246CC1472ED2B021DC8540A22F and DoD Root CA 3 - DoD Interoperability Root CA 2 - AC06108CA348CC03B53795C64BF84403C1DBD341

Note: The Certificate Store can be loaded by executing the *Microsoft Management Console (MMC)* and adding the snap-in *Certificates*.

Remediation:

Install the following DoD Root CA certificates:

DoD Root CA 2 - DoD Interoperability Root CA 1 - 22BBE981F0694D246CC1472ED2B021DC8540A22F and DoD Root CA 3 - DoD Interoperability Root CA 2 - AC06108CA348CC03B53795C64BF84403C1DBD341

Note: The InstallRoot tool is available on IASE at <http://iae.disa.mil/pki-pke/Pages/tools.aspx>.

Note #2: The Certificate Store can be loaded by executing the *Microsoft Management Console (MMC)* and adding the snap-in *Certificates*.

Default Value:

N/A

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73607
Rule ID: SV-88271r3_rule
STIG ID: WN16-PK-000020
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

20.2 (L3) Ensure 'DoD Root CA certificates must be installed in the Trusted Root Store' (Manual)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting ensures that the DoD Root CA certificates are installed in the Trusted Root Store to make sure that secure DoD websites and DoD-signed code are properly validated.

The STIG recommended state for this setting is: DoD Root CA 2, DoD Root CA 3, DoD Root CA 4 and DoD Root CA 5

Rationale:

The DoD root certificates will ensure that the trust chain is established for server certificates issued from the DoD CAs.

Impact:

None

Audit:

To establish the recommended configuration, navigate to Certificate Store and make sure the following certificates are installed: DoD Root CA 2, DoD Root CA 3, DoD Root CA 4 and DoD Root CA 5

Note: The Certificate Store can be loaded by executing the *Microsoft Management Console (MMC)* and adding the snap-in *Certificates*.

Remediation:

Install the following DoD Root CA certificates:

DoD Root CA 2, DoD Root CA 3, DoD Root CA 4 and DoD Root CA 5

Note: The InstallRoot tool is available on IASE at <http://iase.disa.mil/pki-pke/Pages/tools.aspx>.

Note #2: The Certificate Store can be loaded by executing the *Microsoft Management Console (MMC)* and adding the snap-in *Certificates*.

Default Value:

N/A

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73605
Rule ID: SV-88269r3_rule
STIG ID: WN16-PK-000010
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

20.3 (L3) Ensure 'Event Viewer must be protected from unauthorized modification and deletion' (Manual)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting restricts permissions to the Event Viewer, which is used to view and manipulate log data.

The STIG recommended state for this setting is: TrustedInstaller - Full Control, Administrators - Read & Execute, SYSTEM - Read & Execute, Users - Read & Execute, ALL APPLICATION PACKAGES - Read & Execute and ALL RESTRICTED APPLICATION PACKAGES - Read & Execute

Rationale:

Protecting audit information also includes identifying and protecting the tools used to view and manipulate log data. Therefore, protecting audit tools is necessary to prevent unauthorized operation on audit information.

Impact:

Users will be able to open *Event Viewer* and view logs, but not able to delete logs.

Audit:

Navigate to the path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration, set the NTFS permissions on the file below to TrustedInstaller - Full Control, Administrators - Read & Execute, SYSTEM - Read & Execute, Users - Read & Execute, ALL APPLICATION PACKAGES - Read & Execute and ALL RESTRICTED APPLICATION PACKAGES - Read & Execute:

```
%SystemRoot%\System32\eventvwr.exe
```

Default Value:

N/A

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73411
Rule ID: SV-88063r1_rule
STIG ID: WN16-AU-000060
Severity: CAT II

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

20.4 (L3) Ensure 'Fax Server role' is set to 'Not Installed' (Manual)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting provides a single interface that administrators can use to efficiently administer fax resources.

Note: A fax server is comprised of four different parts:

- Fax Server role
- Fax service
- Fax Service Manager
- Windows Fax and Scan

The STIG recommended state for this setting is: Not installed

Rationale:

Unnecessary services increase the attack surface of a system. Some of these services may not support required levels of authentication or encryption or may provide unauthorized access to the system.

Impact:

Fax Server features such as automatically making fax connections available to users and computers in your organization will not be possible.

Audit:

Navigate to the path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To Uninstall the *Fax Server* role:

- Start "Server Manager"
- Select the server with the role
- Scroll down to "ROLES AND FEATURES" in the right pane
- Select "Remove Roles and Features" from the drop-down "TASKS" list
- Select the appropriate server on the "Server Selection" page and click "Next"
- Deselect "Fax Server" on the "Roles" page
- Click "Next" and "Remove" as prompted (if installed).

Default Value:

N/A

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73287
Rule ID: SV-87939r1_rule
STIG ID: WN16-00-000350
Severity: CAT II

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

20.5 (L3) Ensure 'Local volumes must use a format that supports NTFS attributes' (Manual)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting ensures that volumes are formatted to use NT file system (NTFS) or Resilient File System (ReFS).

Microsoft proprietary file system introduced with Windows Server 2012 with the intent of becoming the "next generation" file system after NTFS.

The STIG recommended state for this setting is: 'Eventlog'-Full Control, 'SYSTEM'-Full Control, 'Administrators'-Full Control

Rationale:

Restricting permissions on the Application Event Log will prevent non-privileged users from viewing and deleting the log. Preserving an audit trail of system activity can help identify possible compromises, detect attacks, and troubleshoot system performance and configuration errors.

Impact:

Non-privileged accounts will not be able to view or delete the Application Event Log.

Audit:

Navigate to the path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration, set the NTFS permissions on the file below to 'Eventlog'-Full Control, 'SYSTEM'-Full Control, 'Administrators'-Full Control:

```
%SystemRoot%\System32\winevt\Logs\Application.evtx
```

Note: If the location of the event logs has been changed, when adding permissions, the event log user, 'Eventlog' must be entered as 'NT Service\Eventlog'.

Default Value:

N/A

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73405
Rule ID: SV-88057r1_rule
STIG ID: WN16-AU-000030
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

20.6 (L3) Ensure 'Microsoft FTP Service (FTPSVC)' is set to 'Not Installed' (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Enables the server to be a File Transfer Protocol (FTP) server.

The STIG recommended state for this setting is: `Not Installed`.

Note: This service is not installed by default. It is supplied with Windows, but is installed by enabling an optional Windows feature (*Internet Information Services - FTP Server*).

Rationale:

Hosting an FTP server (especially a non-secure FTP server) from a workstation is an increased security risk, as the attack surface of that workstation is then greatly increased.

Note: This security concern applies to *any* FTP server application installed on a workstation, not just IIS.

Impact:

The computer will not function as an FTP server.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

`HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\FTPSVC:Start`

Note: Alternately this Windows Feature can be uninstalled by using *Roles and Features* in Server Manager.

Remediation:

To establish the recommended configuration via GP, set the following UI path to: Not Installed.

Computer Configuration\Policies\Windows Settings\Security Settings\System Services\Microsoft FTP Service

OR

To Uninstall the *FTP Server* role:

- Start "Server Manager"
- Select the server with the role
- Scroll down to "ROLES AND FEATURES" in the right pane
- Select "Remove Roles and Features" from the drop-down "TASKS" list
- Select the appropriate server on the "Server Selection" page and click "Next"
- Deselect "FTP Server" under "Web Server (IIS)" on the "Roles" page
- Click "Next" and "Remove" as prompted (if installed).

Default Value:

Not Installed (Automatic when installed)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73289
Rule ID: SV-87941r1_rule
STIG ID: WN16-00-000360
Severity: CAT II

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

20.7 (L3) Ensure 'Peer Name Resolution Protocol (PNRPsvc)' is set to 'Not Installed' (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Enables serverless peer name resolution over the Internet using the Peer Name Resolution Protocol (PNRP).

The STIG recommended state for this setting is: Not Installed.

Rationale:

Peer Name Resolution Protocol is a distributed and (mostly) serverless way to handle name resolution of clients with each other. In a high security environment, it is more secure to rely on centralized name resolution methods maintained by authorized staff.

Impact:

Some peer-to-peer and collaborative applications, such as Remote Assistance, may not function.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\PNRPsvc:Start

Note: Alternately this Windows Feature can be uninstalled by using *Roles and Features* in Server Manager.

Remediation:

To establish the recommended configuration via GP, set the following UI path to: Not Installed.

Computer Configuration\Policies\Windows Settings\Security Settings\System Services\Peer Name Resolution Protocol

OR

To Uninstall the *Peer Name Resolution Protocol* feature:

- Start "Server Manager"
- Select the server with the role
- Scroll down to "ROLES AND FEATURES" in the right pane
- Select "Remove Roles and Features" from the drop-down "TASKS" list
- Select the appropriate server on the "Server Selection" page and click "Next"
- Deselect "Peer Name Resolution Protocol" on the "Features" page
- Click "Next" and "Remove" as prompted (if installed).

Default Value:

Manual

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73291
Rule ID: SV-87943r1_rule
STIG ID: WN16-00-000370
Severity: CAT II

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

20.8 (L3) Ensure 'Permissions for the Application Event Log must prevent access by non-privileged accounts' (Manual)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting restricts permissions to the Application Event Log for all non-privileged users.

The STIG recommended state for this setting is: 'Eventlog'-Full Control, 'SYSTEM'-Full Control, 'Administrators'-Full Control

Rationale:

Restricting permissions on the Application Event Log will prevent non-privileged users from viewing and deleting the log. Preserving an audit trail of system activity can help identify possible compromises, detect attacks, and troubleshoot system performance and configuration errors.

Impact:

Non-privileged accounts will not be able to view or delete the Application Event Log.

Audit:

Navigate to the path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration, set the NTFS permissions on the file below to 'Eventlog'-Full Control, 'SYSTEM'-Full Control, 'Administrators'-Full Control:

```
%SystemRoot%\System32\winevt\Logs\Application.evtx
```

Note: If the location of the event logs has been changed, when adding permissions, the event log user, 'Eventlog' must be entered as 'NT Service\Eventlog'.

Default Value:

N/A

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73405
Rule ID: SV-88057r1_rule
STIG ID: WN16-AU-000030
Severity: CAT II

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

20.9 (L3) Ensure 'Permissions for the Security Event Log must prevent access by non-privileged accounts' (Manual)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting restricts permissions to the Security Event Log for all non-privileged users.

The STIG recommended state for this setting is: 'Eventlog'-Full Control, 'SYSTEM'-Full Control, 'Administrators'-Full Control

Rationale:

Restricting permissions on the Security Event Log will prevent non-privileged users from viewing and deleting the log. Preserving an audit trail of system activity can help identify possible compromises, detect attacks, and troubleshoot system performance and configuration errors.

Impact:

Non-privileged accounts will not be able to view or delete the Security Event Log.

Audit:

Navigate to the path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration, set the NTFS permissions on the file below to 'Eventlog'-Full Control, 'SYSTEM'-Full Control, 'Administrators'-Full Control:

`%SystemRoot%\ System32\winevt\Logs\Security.evtx`

Note: If the location of the event logs has been changed, when adding permissions, the event log user, 'Eventlog' must be entered as 'NT Service\Eventlog'.

Default Value:

N/A

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73407
Rule ID: SV-88059r1_rule
STIG ID: WN16-AU-000040
Severity: CAT II

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

20.10 (L3) Ensure 'Permissions for the System Event Log must prevent access by non-privileged accounts' (Manual)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This STIG setting restricts permissions to the System Event Log for all non-privileged users.

The recommended state for this setting is: 'Eventlog'-Full Control, 'SYSTEM'-Full Control, 'Administrators'-Full Control

Rationale:

Restricting permissions on the System Event Log will prevent non-privileged users from viewing and deleting the log. Preserving an audit trail of system activity can help identify possible compromises, detect attacks, and troubleshoot system performance and configuration errors.

Impact:

Non-privileged accounts will not be able to view or delete the System Event Log.

Audit:

Navigate to the path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration, set the NTFS permissions on the file below to 'Eventlog'-Full Control, 'SYSTEM'-Full Control, 'Administrators'-Full Control:

```
%SystemRoot%\System32\winevt\Logs\System.evtx
```

Note: If the location of the event logs has been changed, when adding permissions, the event log user, 'Eventlog' must be entered as 'NT Service\Eventlog'.

Default Value:

N/A

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73409
Rule ID: SV-88061r1_rule
STIG ID: WN16-AU-000050
Severity: CAT II

CIS Controls:

Version 7

6.3 Enable Detailed Logging

Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.

20.11 (L3) Ensure 'Permissions on the Active Directory data files must only allow System and Administrators access' (Manual)

Profile Applicability:

- Level 3 - STIG Domain Controller

Description:

This setting restricts permissions to the Active Directory data files.

The STIG recommended state for this setting is: NT AUTHORITY\SYSTEM: (I) (F),
BUILTIN\Administrators: (I) (F)

Note: (I) = permission inherited from parent container and (F) = full access

Rationale:

Improper access permissions for directory data-related files could allow unauthorized users to read, modify, or delete directory data or audit trails.

Impact:

Non-privileged accounts will not be able to read, modify, or delete directory data or audit trails

Audit:

Navigate to the path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

Maintain the permissions on NTDS database and log files as follows:

NT AUTHORITY\SYSTEM: (I) (F)
BUILTIN\Administrators: (I) (F)

(I) = permission inherited from parent container
(F) = full access

Default Value:

N/A

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73369
Rule ID: SV-88021r1_rule
STIG ID: WN16-DC-000070
Severity: CAT I

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

20.12 (L3) Ensure 'Server Message Block (SMB) v1 protocol must be uninstalled' (Manual)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

SMBv1 is an old version of the Server Message Block protocol Windows uses for file sharing on a local network.

The STIG recommended state for this setting is: Not installed

Rationale:

SMBv1 is a legacy protocol that uses the message-digest 5 (MD5) algorithm as part of Server Message Block (SMB). MD5 is known to be vulnerable to a number of attacks such as collision and preimage attacks and is not FIPS compliant.

Impact:

Disabling SMBv1 without thoroughly testing for SMBv1 traffic in your environment can have unintended consequences, up to and including a complete suspension of all network services, denied access to all resources, and remote authentication failures (like LDAP).

Audit:

Navigate to the path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To Uninstall the *Fax Server* role:

- Start "Server Manager"
- Select the server with the role
- Scroll down to "ROLES AND FEATURES" in the right pane
- Select "Remove Roles and Features" from the drop-down "TASKS" list
- Select the appropriate server on the "Server Selection" page and click "Next"
- Deselect "SMB 1.0/CIFS File Sharing Support" on the "Features" page
- Click "Next" and "Remove" as prompted (if installed).

OR

- Open "Windows PowerShell" with elevated privileges (run as administrator)
- Enter "Uninstall-WindowsFeature -Name FS-SMB1 -Restart"
- (Omit the Restart parameter if an immediate restart of the system cannot be done.)

Default Value:

N/A

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73299
Rule ID: SV-87951r2_rule
STIG ID: WN16-00-000410
Severity: CAT II

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

20.13 (L3) Ensure 'Simple TCP/IP Services (simptcp)' is set to 'Not Installed' (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Supports the following TCP/IP services: Character Generator, Daytime, Discard, Echo, and Quote of the Day.

The STIG recommended state for this setting is: Not Installed.

Note: This service is not installed by default. It is supplied with Windows, but is installed by enabling an optional Windows feature (*Simple TCPIP services (i.e. echo, daytime etc)*).

Rationale:

The Simple TCP/IP Services have very little purpose in a modern enterprise environment - allowing them might increase exposure and risk for attack.

Impact:

The Simple TCP/IP services (Character Generator, Daytime, Discard, Echo and Quote of the Day) will not be available.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\simptcp:Start

Note: Alternately this Windows Feature can be uninstalled by using *Roles and Features* in Server Manager.

Remediation:

To establish the recommended configuration via GP, set the following UI path to: Disabled or ensure the service is not installed.

Computer Configuration\Policies\Windows Settings\Security Settings\System Services\Simple TCP/IP Services

OR

To Uninstall the *Simple TCP/IP Services (simptcp)* feature:

- Start "Server Manager"
- Select the server with the role
- Scroll down to "ROLES AND FEATURES" in the right pane
- Select "Remove Roles and Features" from the drop-down "TASKS" list
- Select the appropriate server on the "Server Selection" page and click "Next"
- Deselect "Simple TCP/IP Services" on the "Features" page
- Click "Next" and "Remove" as prompted (if installed).

Default Value:

Not Installed (Automatic when installed)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73293
Rule ID: SV-87945r1_rule
STIG ID: WN16-00-000380
Severity: CAT II

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

20.14 (L3) Ensure 'Software certificate installation files must be removed from Windows Server 2016' (Manual)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting ensures that unauthorized certificate installation files (*.p12 and *.pfx) are not installed on the system. *.p12 and *.pfx files are a binary format used for storing the server certificate, any intermediate certificates, and the private key into a single encryptable file.

The STIG recommended state for this setting is: Remove all *.p12 and *.pfx files.

Note: This does not apply to server-based applications that have a requirement for .p12 certificate files or Adobe PreFlight certificate files.

Rationale:

Use of software certificates and their accompanying installation files for end users to access resources is less secure than the use of hardware-based certificates.

Impact:

N/A

Audit:

Navigate to the path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

Remove any certificate installation files *.p12 and *.pfx found on a system.

Note: This does not apply to server-based applications that have a requirement for .p12 certificate files or Adobe PreFlight certificate files.

Default Value:

N/A

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73271
Rule ID: SV-87923r2_rule
STIG ID: WN16-00-000270
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

20.15 (L3) Ensure 'Systems must be maintained at a supported servicing level'(Manual)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting ensures that the Operating System level is in compliance.

The STIG recommended state for this setting is: Version 1607 (Build 14393.xxx) or greater

Rationale:

Systems must be maintained at a servicing level supported by the vendor with new security updates. Systems at unsupported servicing levels will not receive security updates for new vulnerabilities, which leave them subject to exploitation.

Impact:

Systems older than OS build version 1607 (Build 14393.xxx) or greater are not supported.

Audit:

Navigate to the path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To establish the recommended configuration , navigate to the following and confirm the Operating System Version:

- Open "Windows Command Prompt" with elevated privileges (run as administrator)
- Type: systeminfo and HIT "Enter"
- Confirm the OS Version is Version 1607 (Build 14393.xxx) or greater.

If not, update the system to Version 1607 (Build 14393.xxx) or greater.

Default Value:

N/A

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73239
Rule ID: SV-87891r1_rule
STIG ID: WN16-00-000110
Severity: CAT I

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

20.16 (L3) Ensure 'Telnet (TlntSvr)' is set to 'Not Installed' (Automated)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Enables a remote user to log on to this computer and run programs, and supports various TCP/IP Telnet clients, including UNIX-based and Windows-based computers.

The STIG recommended state for this setting is: Not Installed.

Note: This service is not installed by default. It is supplied with Windows, but is installed by enabling an optional Windows feature (*TelnetServer*).

Rationale:

Hosting a Telnet server (especially a non-secure Telnet server) from a workstation is an increased security risk, as the attack surface of that workstation is then greatly increased.

Note: This security concern applies to *any* Telnet server application installed on a workstation, not just the one supplied with Windows.

Impact:

Remote user Telnet access will not be available.

Audit:

Navigate to the UI Path articulated in the Remediation section and confirm it is set as prescribed. This group policy setting is backed by the following registry location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\TlntSvr:Start

Note: Alternately this Windows Feature can be uninstalled by using *Roles and Features* in Server Manager.

Remediation:

To establish the recommended configuration via GP, set the following UI path to: Not Installed

Computer Configuration\Policies\Windows Settings\Security Settings\System Services\Telnet

OR

To Uninstall the *Telnet Client* feature:

- Start "Server Manager"
- Select the server with the role
- Scroll down to "ROLES AND FEATURES" in the right pane
- Select "Remove Roles and Features" from the drop-down "TASKS" list
- Select the appropriate server on the "Server Selection" page and click "Next"
- Deselect "Telnet Client" on the "Features" page
- Click "Next" and "Remove" as prompted (if installed).

Default Value:

Not Installed (Disabled when installed)

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73295
Rule ID: SV-87947r1_rule
STIG ID: WN16-00-000390
Severity: CAT II

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

20.17 (L3) Ensure 'TFTP Client must not be installed' (Manual)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting provides the transfer of files to and from a remote computer, typically a computer running UNIX, that is running the Trivial File Transfer Protocol (tftp) service or daemon. tftp is typically used by embedded devices or systems that retrieve firmware, configuration information, or a system image during the boot process from a tftp server.

The STIG recommended state for this setting is: Not installed

Rationale:

Unnecessary services increase the attack surface of a system. Some of these services may not support required levels of authentication or encryption or may provide unauthorized access to the system.

Impact:

Trivial File Transfer Protocol (tftp) features, such as the transferring of files, will not be available to users in your organization.

Audit:

Navigate to the path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To Uninstall the *TFTP Client* feature:

- Start "Server Manager"
- Select the server with the role
- Scroll down to "ROLES AND FEATURES" in the right pane
- Select "Remove Roles and Features" from the drop-down "TASKS" list
- Select the appropriate server on the "Server Selection" page and click "Next"
- Deselect "TFTP Client" on the "Features" page
- Click "Next" and "Remove" as prompted (if installed).

Default Value:

N/A

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73297
Rule ID: SV-87949r1_rule
STIG ID: WN16-00-000400
Severity: CAT II

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

20.18 (L3) Ensure 'US DoD CCEB Interoperability Root CA cross-certificates must be installed in the Untrusted Certificates Store on unclassified systems' (Manual)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

This setting ensures that the US DoD CCEB Interoperability Root CA cross-certificates are installed in the Untrusted Certificate Store on unclassified systems.

The STIG recommended state for this setting is: DoD Root CA 3 – US DoD CCEB Interoperability Root CA 2 – 929BF3196896994C0A201DF4A5B71F603FEFBF2E

Rationale:

If the US DoD CCEB Interoperability Root CA cross-certificates are not installed in the Untrusted Certificates Store users may experience denial of service when performing certificate-based authentication to DoD websites due to the system chaining to a root other than DoD Root CAs.

Note: This requirement only applies to unclassified systems.

Impact:

None

Audit:

To establish the recommended configuration, navigate to Certificate Store and make sure the following certificates are installed: DoD Root CA 3 – US DoD CCEB Interoperability Root CA 2 – 929BF3196896994C0A201DF4A5B71F603FEFBF2E

Note: The Certificate Store can be loaded by executing the *Microsoft Management Console (MMC)* and adding the snap-in *Certificates*.

Remediation:

Install the following DoD Root CA certificates:

DoD Root CA 3 - US DoD CCEB Interoperability Root CA 2 -
929BF3196896994C0A201DF4A5B71F603FEFBF2E

Note: The InstallRoot tool is available on IASE at <http://iase.disa.mil/pki-pke/Pages/tools.aspx>.

Note #2: The Certificate Store can be loaded by executing the *Microsoft Management Console (MMC)* and adding the snap-in *Certificates*.

Default Value:

N/A

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73609
Rule ID: SV-88273r3_rule
STIG ID: WN16-PK-000030
Severity: CAT II

CIS Controls:

Version 7

5.1 Establish Secure Configurations

Maintain documented, standard security configuration standards for all authorized operating systems and software.

20.19 (L3) Ensure 'Windows PowerShell 2.0 must not be installed' (Manual)

Profile Applicability:

- Level 3 - STIG Domain Controller
- Level 3 - STIG Member Server

Description:

Windows PowerShell was designed with purpose of task automation and configuration management.

The STIG recommended state for this setting is: Not installed

Note: Windows PowerShell 5.0 added advanced logging features that can provide additional detail when malware has been run on a system.

Rationale:

Windows PowerShell 2.0 can be used in some scenarios by attackers who want to bypass the script block logging feature that was added in PowerShell 5.0.7.

Impact:

PowerShell scripts that rely on PowerShell 2.0 will not function in your environment.

Audit:

Navigate to the path articulated in the Remediation section and confirm it is set as prescribed.

Remediation:

To Uninstall the *Windows PowerShell 2.0 Engine* feature:

- Start "Server Manager"
- Select the server with the role
- Scroll down to "ROLES AND FEATURES" in the right pane
- Select "Remove Roles and Features" from the drop-down "TASKS" list
- Select the appropriate server on the "Server Selection" page and click "Next"
- Deselect "Windows PowerShell 2.0 Engine" under "Windows PowerShell" on the "Features" page
- Click "Next" and "Remove" as prompted (if installed).

Default Value:

N/A

Additional Information:

This Benchmark Recommendation maps to:

Microsoft Windows Server 2016 Security Technical Implementation Guide:
Version 1, Release 13, Benchmark Date: May 15, 2020

Vul ID: V-73301
Rule ID: SV-87953r1_rule
STIG ID: WN16-00-000420
Severity: CAT II

CIS Controls:

Version 7

9.2 Ensure Only Approved Ports, Protocols and Services Are Running

Ensure that only network ports, protocols, and services listening on a system with validated business needs, are running on each system.

Appendix: Summary Table

Control		Set Correctly	
		Yes	No
1	Account Policies		
1.1	Password Policy		
1.1.1	(L1) Ensure 'Enforce password history' is set to '24 or more password(s)' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
1.1.2	(L1) Ensure 'Maximum password age' is set to '60 or fewer days, but not 0' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
1.1.3	(L1) Ensure 'Minimum password age' is set to '1 or more day(s)' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
1.1.4	(L1) Ensure 'Minimum password length' is set to '14 or more character(s)' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
1.1.5	(L1) Ensure 'Password must meet complexity requirements' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
1.1.6	(L1) Ensure 'Store passwords using reversible encryption' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
1.2	Account Lockout Policy		
1.2.1	(L1) Ensure 'Account lockout duration' is set to '15 or more minute(s)' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
1.2.2	(L1) Ensure 'Account lockout threshold' is set to '10 or fewer invalid logon attempt(s), but not 0' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
1.2.3	(L3) Ensure 'Account lockout threshold' is set to '3 or fewer invalid logon attempt(s), but not 0' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
1.2.4	(L1) Ensure 'Reset account lockout counter after' is set to '15 or more minute(s)' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
1.3	Kerberos Policy		
1.3.1	(L3) Ensure 'Enforce user logon restrictions' is set to 'Enabled' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>
1.3.2	(L3) Ensure 'Maximum lifetime for service ticket' is set to '600 or fewer minutes, but not 0' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>
1.3.3	(L3) Ensure 'Maximum lifetime for user ticket' is set to '10 or fewer hours, but not 0' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>
1.3.4	(L3) Ensure 'Maximum lifetime for user ticket renewal' is set to '7 or fewer days' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>
1.3.5	(L3) Ensure 'Maximum tolerance for computer clock synchronization' is set to '5 or fewer minutes' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>
2	Local Policies		
2.1	Audit Policy		
2.2	User Rights Assignment		

Control		Set Correctly	
		Yes	No
2.2.1	(L1) Ensure 'Access Credential Manager as a trusted caller' is set to 'No One' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.2	(L1) Ensure 'Access this computer from the network' is set to 'Administrators, Authenticated Users, ENTERPRISE DOMAIN CONTROLLERS' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.3	(L1) Ensure 'Access this computer from the network' is set to 'Administrators, Authenticated Users' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.4	(L1) Ensure 'Act as part of the operating system' is set to 'No One' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.5	(L1) Ensure 'Add workstations to domain' is set to 'Administrators' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.6	(L1) Ensure 'Adjust memory quotas for a process' is set to 'Administrators, LOCAL SERVICE, NETWORK SERVICE' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.7	(L1) Ensure 'Allow log on locally' is set to 'Administrators' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.8	(L1) Ensure 'Allow log on through Remote Desktop Services' is set to 'Administrators' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.9	(L1) Ensure 'Allow log on through Remote Desktop Services' is set to 'Administrators, Remote Desktop Users' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.10	(L1) Ensure 'Back up files and directories' is set to 'Administrators' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.11	(L1) Ensure 'Change the system time' is set to 'Administrators, LOCAL SERVICE' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.12	(L1) Ensure 'Change the time zone' is set to 'Administrators, LOCAL SERVICE' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.13	(L1) Ensure 'Create a pagefile' is set to 'Administrators' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.14	(L1) Ensure 'Create a token object' is set to 'No One' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.15	(L1) Ensure 'Create global objects' is set to 'Administrators, LOCAL SERVICE, NETWORK SERVICE, SERVICE' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.16	(L1) Ensure 'Create permanent shared objects' is set to 'No One' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.17	(L1) Ensure 'Create symbolic links' is set to 'Administrators' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>

Control		Set Correctly	
		Yes	No
2.2.18	(L1) Ensure 'Create symbolic links' is set to 'Administrators, NT VIRTUAL MACHINE\Virtual Machines' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.19	(L1) Ensure 'Debug programs' is set to 'Administrators' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.20	(L1) Ensure 'Deny access to this computer from the network' to include 'Guests' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.21	(L1) Ensure 'Deny access to this computer from the network' to include 'Guests, Local account and member of Administrators group' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.22	(L3) Ensure 'Deny access to this computer from the network' to include 'Guests, member of Enterprise Admins group, member of Domain Admins group, Local account and member of Administrators group' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.23	(L1) Ensure 'Deny log on as a batch job' to include 'Guests' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.24	(L3) Ensure 'Deny log on as a batch job' to include 'Guests, member of Enterprise Admins group and member of Domain Admins group' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.25	(L1) Ensure 'Deny log on as a service' to include 'Guests' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.26	(L3) Ensure 'Deny log on as a service' is set to 'No One' (DC Only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.27	(L3) Ensure 'Deny log on as a service' to include 'members of Enterprise Admin group and members of Domain Admin group' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.28	(L1) Ensure 'Deny log on locally' to include 'Guests' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.29	(L3) Ensure 'Deny log on locally' to include 'Guests, members of Enterprise Admins group and members of Domain Admins group' (MS Only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.30	(L1) Ensure 'Deny log on through Remote Desktop Services' to include 'Guests' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.31	(L1) Ensure 'Deny log on through Remote Desktop Services' is set to 'Guests, Local account' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.32	(L3) Ensure 'Deny log on through Remote Desktop Services' is set to include 'Guests, members of Enterprise Admins group, members of Domain admins group and Local account' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>

Control		Set Correctly	
		Yes	No
2.2.33	(L1) Ensure 'Enable computer and user accounts to be trusted for delegation' is set to 'Administrators' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.34	(L1) Ensure 'Enable computer and user accounts to be trusted for delegation' is set to 'No One' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.35	(L1) Ensure 'Force shutdown from a remote system' is set to 'Administrators' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.36	(L1) Ensure 'Generate security audits' is set to 'LOCAL SERVICE, NETWORK SERVICE' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.37	(L1) Ensure 'Impersonate a client after authentication' is set to 'Administrators, LOCAL SERVICE, NETWORK SERVICE, SERVICE' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.38	(L1) Ensure 'Impersonate a client after authentication' is set to 'Administrators, LOCAL SERVICE, NETWORK SERVICE, SERVICE' and (when the Web Server (IIS) Role with Web Services Role Service is installed) 'IIS_IUSRS' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.39	(L3) Ensure 'Impersonate a client after authentication' is set to 'Administrators, LOCAL SERVICE, NETWORK SERVICE, SERVICE' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.40	(L1) Ensure 'Increase scheduling priority' is set to 'Administrators' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.41	(L1) Ensure 'Load and unload device drivers' is set to 'Administrators' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.42	(L1) Ensure 'Lock pages in memory' is set to 'No One' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.43	(L2) Ensure 'Log on as a batch job' is set to 'Administrators' (DC Only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.44	(L1) Ensure 'Manage auditing and security log' is set to 'Administrators' and (when Exchange is running in the environment) 'Exchange Servers' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.45	(L1) Ensure 'Manage auditing and security log' is set to 'Administrators' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.46	(L3) Ensure 'Manage auditing and security log' is set to 'Administrators' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.47	(L1) Ensure 'Modify an object label' is set to 'No One' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.48	(L1) Ensure 'Modify firmware environment values' is set to 'Administrators' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>

Control		Set Correctly	
		Yes	No
2.2.49	(L1) Ensure 'Perform volume maintenance tasks' is set to 'Administrators' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.50	(L1) Ensure 'Profile single process' is set to 'Administrators' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.51	(L1) Ensure 'Profile system performance' is set to 'Administrators, NT SERVICE\WdiServiceHost' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.52	(L1) Ensure 'Replace a process level token' is set to 'LOCAL SERVICE, NETWORK SERVICE' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.53	(L1) Ensure 'Restore files and directories' is set to 'Administrators' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.54	(L1) Ensure 'Shut down the system' is set to 'Administrators' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.55	(L1) Ensure 'Synchronize directory service data' is set to 'No One' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.2.56	(L1) Ensure 'Take ownership of files or other objects' is set to 'Administrators' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3	Security Options		
2.3.1	Accounts		
2.3.1.1	(L1) Ensure 'Accounts: Administrator account status' is set to 'Disabled' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.1.2	(L1) Ensure 'Accounts: Block Microsoft accounts' is set to 'Users can't add or log on with Microsoft accounts' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.1.3	(L1) Ensure 'Accounts: Guest account status' is set to 'Disabled' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.1.4	(L3) Ensure 'Accounts: Guest account status' is set to 'Disabled' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.1.5	(L1) Ensure 'Accounts: Limit local account use of blank passwords to console logon only' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.1.6	(L1) Configure 'Accounts: Rename administrator account' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.1.7	(L1) Configure 'Accounts: Rename guest account' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.2	Audit		
2.3.2.1	(L1) Ensure 'Audit: Force audit policy subcategory settings (Windows Vista or later) to override audit policy category settings' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.2.2	(L1) Ensure 'Audit: Shut down system immediately if unable to log security audits' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.3	DCOM		

Control		Set Correctly	
		Yes	No
2.3.4	Devices		
2.3.4.1	(L1) Ensure 'Devices: Allowed to format and eject removable media' is set to 'Administrators' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.4.2	(L1) Ensure 'Devices: Prevent users from installing printer drivers' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.5	Domain controller		
2.3.5.1	(L1) Ensure 'Domain controller: Allow server operators to schedule tasks' is set to 'Disabled' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.5.2	(L1) Ensure 'Domain controller: LDAP server signing requirements' is set to 'Require signing' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.5.3	(L1) Ensure 'Domain controller: Refuse machine account password changes' is set to 'Disabled' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.6	Domain member		
2.3.6.1	(L1) Ensure 'Domain member: Digitally encrypt or sign secure channel data (always)' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.6.2	(L1) Ensure 'Domain member: Digitally encrypt secure channel data (when possible)' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.6.3	(L1) Ensure 'Domain member: Digitally sign secure channel data (when possible)' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.6.4	(L1) Ensure 'Domain member: Disable machine account password changes' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.6.5	(L1) Ensure 'Domain member: Maximum machine account password age' is set to '30 or fewer days, but not 0' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.6.6	(L1) Ensure 'Domain member: Require strong (Windows 2000 or later) session key' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.7	Interactive logon		
2.3.7.1	(L1) Ensure 'Interactive logon: Do not display last user name' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.7.2	(L1) Ensure 'Interactive logon: Do not require CTRL+ALT+DEL' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.7.3	(L1) Ensure 'Interactive logon: Machine inactivity limit' is set to '900 or fewer second(s), but not 0' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.7.4	(L1) Configure 'Interactive logon: Message text for users attempting to log on' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.7.5	(L1) Configure 'Interactive logon: Message title for users attempting to log on' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>

Control		Set Correctly	
		Yes	No
2.3.7.6	(L2) Ensure 'Interactive logon: Number of previous logons to cache (in case domain controller is not available)' is set to '4 or fewer logon(s)' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.7.7	(L1) Ensure 'Interactive logon: Prompt user to change password before expiration' is set to 'between 5 and 14 days' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.7.8	(L1) Ensure 'Interactive logon: Require Domain Controller Authentication to unlock workstation' is set to 'Enabled' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.7.9	(L1) Ensure 'Interactive logon: Smart card removal behavior' is set to 'Lock Workstation' or higher (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.8	Microsoft network client		
2.3.8.1	(L1) Ensure 'Microsoft network client: Digitally sign communications (always)' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.8.2	(L1) Ensure 'Microsoft network client: Digitally sign communications (if server agrees)' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.8.3	(L1) Ensure 'Microsoft network client: Send unencrypted password to third-party SMB servers' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.9	Microsoft network server		
2.3.9.1	(L1) Ensure 'Microsoft network server: Amount of idle time required before suspending session' is set to '15 or fewer minute(s)' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.9.2	(L1) Ensure 'Microsoft network server: Digitally sign communications (always)' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.9.3	(L1) Ensure 'Microsoft network server: Digitally sign communications (if client agrees)' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.9.4	(L1) Ensure 'Microsoft network server: Disconnect clients when logon hours expire' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.9.5	(L1) Ensure 'Microsoft network server: Server SPN target name validation level' is set to 'Accept if provided by client' or higher (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.10	Network access		
2.3.10.1	(L1) Ensure 'Network access: Allow anonymous SID/Name translation' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.10.2	(L1) Ensure 'Network access: Do not allow anonymous enumeration of SAM accounts' is set to 'Enabled' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>

Control		Set Correctly	
		Yes	No
2.3.10.3	(L3) Ensure 'Network access: Do not allow anonymous enumeration of SAM accounts' is set to 'Enabled' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.10.4	(L3) Ensure 'Network access: Do not allow anonymous enumeration of SAM accounts and shares' is set to 'Enabled' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.10.5	(L1) Ensure 'Network access: Do not allow anonymous enumeration of SAM accounts and shares' is set to 'Enabled' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.10.6	(L2) Ensure 'Network access: Do not allow storage of passwords and credentials for network authentication' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.10.7	(L1) Ensure 'Network access: Let Everyone permissions apply to anonymous users' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.10.8	(L1) Configure 'Network access: Named Pipes that can be accessed anonymously' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.10.9	(L1) Configure 'Network access: Named Pipes that can be accessed anonymously' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.10.10	(L1) Configure 'Network access: Remotely accessible registry paths' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.10.11	(L1) Configure 'Network access: Remotely accessible registry paths and sub-paths' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.10.12	(L1) Ensure 'Network access: Restrict anonymous access to Named Pipes and Shares' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.10.13	(L1) Ensure 'Network access: Restrict clients allowed to make remote calls to SAM' is set to 'Administrators: Remote Access: Allow' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.10.14	(L1) Ensure 'Network access: Shares that can be accessed anonymously' is set to 'None' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.10.15	(L1) Ensure 'Network access: Sharing and security model for local accounts' is set to 'Classic - local users authenticate as themselves' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.11	Network security		
2.3.11.1	(L1) Ensure 'Network security: Allow Local System to use computer identity for NTLM' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.11.2	(L1) Ensure 'Network security: Allow LocalSystem NULL session fallback' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.11.3	(L1) Ensure 'Network Security: Allow PKU2U authentication requests to this computer to use online identities' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>

Control		Set Correctly	
		Yes	No
2.3.11.4	(L1) Ensure 'Network security: Configure encryption types allowed for Kerberos' is set to 'AES128_HMAC_SHA1, AES256_HMAC_SHA1, Future encryption types' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.11.5	(L1) Ensure 'Network security: Do not store LAN Manager hash value on next password change' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.11.6	(L1) Ensure 'Network security: Force logoff when logon hours expire' is set to 'Enabled' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.11.7	(L1) Ensure 'Network security: LAN Manager authentication level' is set to 'Send NTLMv2 response only. Refuse LM & NTLM' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.11.8	(L1) Ensure 'Network security: LDAP client signing requirements' is set to 'Negotiate signing' or higher (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.11.9	(L1) Ensure 'Network security: Minimum session security for NTLM SSP based (including secure RPC) clients' is set to 'Require NTLMv2 session security, Require 128-bit encryption' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.11.10	(L1) Ensure 'Network security: Minimum session security for NTLM SSP based (including secure RPC) servers' is set to 'Require NTLMv2 session security, Require 128-bit encryption' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.12	Recovery console		
2.3.13	Shutdown		
2.3.13.1	(L1) Ensure 'Shutdown: Allow system to be shut down without having to log on' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.14	System cryptography		
2.3.14.1	(L3) System cryptography: Force strong key protection for user keys stored on the computer is set to 'User must enter a password each time they use a key' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.14.2	(L3) 'System cryptography: Use FIPS compliant algorithms for encryption, hashing, and signing' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.15	System objects		
2.3.15.1	(L1) Ensure 'System objects: Require case insensitivity for non-Windows subsystems' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.15.2	(L1) Ensure 'System objects: Strengthen default permissions of internal system objects (e.g. Symbolic Links)' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.16	System settings		

Control		Set Correctly	
		Yes	No
2.3.17	User Account Control		
2.3.17.1	(L1) Ensure 'User Account Control: Admin Approval Mode for the Built-in Administrator account' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.17.2	(L3) Ensure 'User Account Control: Allow UIAccess applications to prompt for elevation without using the secure desktop' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.17.3	(L1) Ensure 'User Account Control: Behavior of the elevation prompt for administrators in Admin Approval Mode' is set to 'Prompt for consent on the secure desktop' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.17.4	(L1) Ensure 'User Account Control: Behavior of the elevation prompt for standard users' is set to 'Automatically deny elevation requests' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.17.5	(L1) Ensure 'User Account Control: Detect application installations and prompt for elevation' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.17.6	(L1) Ensure 'User Account Control: Only elevate UIAccess applications that are installed in secure locations' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.17.7	(L1) Ensure 'User Account Control: Run all administrators in Admin Approval Mode' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.17.8	(L1) Ensure 'User Account Control: Switch to the secure desktop when prompting for elevation' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
2.3.17.9	(L1) Ensure 'User Account Control: Virtualize file and registry write failures to per-user locations' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
3	Event Log		
4	Restricted Groups		
5	System Services		
6	Registry		
7	File System		
8	Wired Network (IEEE 802.3) Policies		
9	Windows Firewall with Advanced Security		
9.1	Domain Profile		
9.1.1	(L1) Ensure 'Windows Firewall: Domain: Firewall state' is set to 'On (recommended)' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.1.2	(L1) Ensure 'Windows Firewall: Domain: Inbound connections' is set to 'Block (default)' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>

Control		Set Correctly	
		Yes	No
9.1.3	(L1) Ensure 'Windows Firewall: Domain: Outbound connections' is set to 'Allow (default)' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.1.4	(L1) Ensure 'Windows Firewall: Domain: Settings: Display a notification' is set to 'No' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.1.5	(L1) Ensure 'Windows Firewall: Domain: Logging: Name' is set to '%SystemRoot%\System32\logfiles\firewall\domainfw.log' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.1.6	(L1) Ensure 'Windows Firewall: Domain: Logging: Size limit (KB)' is set to '16,384 KB or greater' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.1.7	(L1) Ensure 'Windows Firewall: Domain: Logging: Log dropped packets' is set to 'Yes' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.1.8	(L1) Ensure 'Windows Firewall: Domain: Logging: Log successful connections' is set to 'Yes' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.2	Private Profile		
9.2.1	(L1) Ensure 'Windows Firewall: Private: Firewall state' is set to 'On (recommended)' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.2.2	(L1) Ensure 'Windows Firewall: Private: Inbound connections' is set to 'Block (default)' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.2.3	(L1) Ensure 'Windows Firewall: Private: Outbound connections' is set to 'Allow (default)' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.2.4	(L1) Ensure 'Windows Firewall: Private: Settings: Display a notification' is set to 'No' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.2.5	(L1) Ensure 'Windows Firewall: Private: Logging: Name' is set to '%SystemRoot%\System32\logfiles\firewall\privatefw.log' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.2.6	(L1) Ensure 'Windows Firewall: Private: Logging: Size limit (KB)' is set to '16,384 KB or greater' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.2.7	(L1) Ensure 'Windows Firewall: Private: Logging: Log dropped packets' is set to 'Yes' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.2.8	(L1) Ensure 'Windows Firewall: Private: Logging: Log successful connections' is set to 'Yes' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.3	Public Profile		
9.3.1	(L1) Ensure 'Windows Firewall: Public: Firewall state' is set to 'On (recommended)' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.3.2	(L1) Ensure 'Windows Firewall: Public: Inbound connections' is set to 'Block (default)' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.3.3	(L1) Ensure 'Windows Firewall: Public: Outbound connections' is set to 'Allow (default)' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>

Control		Set Correctly	
		Yes	No
9.3.4	(L1) Ensure 'Windows Firewall: Public: Settings: Display a notification' is set to 'No' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.3.5	(L1) Ensure 'Windows Firewall: Public: Settings: Apply local firewall rules' is set to 'No' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.3.6	(L1) Ensure 'Windows Firewall: Public: Settings: Apply local connection security rules' is set to 'No' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.3.7	(L1) Ensure 'Windows Firewall: Public: Logging: Name' is set to '%SystemRoot%\System32\logfiles\firewall\publicfw.log' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.3.8	(L1) Ensure 'Windows Firewall: Public: Logging: Size limit (KB)' is set to '16,384 KB or greater' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.3.9	(L1) Ensure 'Windows Firewall: Public: Logging: Log dropped packets' is set to 'Yes' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
9.3.10	(L1) Ensure 'Windows Firewall: Public: Logging: Log successful connections' is set to 'Yes' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
10	Network List Manager Policies		
11	Wireless Network (IEEE 802.11) Policies		
12	Public Key Policies		
13	Software Restriction Policies		
14	Network Access Protection NAP Client Configuration		
15	Application Control Policies		
16	IP Security Policies		
17	Advanced Audit Policy Configuration		
17.1	Account Logon		
17.1.1	(L1) Ensure 'Audit Credential Validation' is set to 'Success and Failure' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.1.2	(L1) Ensure 'Audit Kerberos Authentication Service' is set to 'Success and Failure' (DC Only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.1.3	(L1) Ensure 'Audit Kerberos Service Ticket Operations' is set to 'Success and Failure' (DC Only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.2	Account Management		
17.2.1	(L1) Ensure 'Audit Application Group Management' is set to 'Success and Failure' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.2.2	(L1) Ensure 'Audit Computer Account Management' is set to include 'Success' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.2.3	(L1) Ensure 'Audit Distribution Group Management' is set to include 'Success' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.2.4	(L1) Ensure 'Audit Other Account Management Events' is set to include 'Success' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>

Control		Set Correctly	
		Yes	No
17.2.5	(L3) Ensure 'Audit Other Account Management Events' is set to include 'Success' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.2.6	(L1) Ensure 'Audit Security Group Management' is set to include 'Success' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.2.7	(L1) Ensure 'Audit User Account Management' is set to 'Success and Failure' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.3	Detailed Tracking		
17.3.1	(L1) Ensure 'Audit PNP Activity' is set to include 'Success' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.3.2	(L1) Ensure 'Audit Process Creation' is set to include 'Success' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.4	DS Access		
17.4.1	(L1) Ensure 'Audit Directory Service Access' is set to include 'Failure' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.4.2	(L3) Ensure 'Audit Directory Service Access' is set to include 'Success' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.4.3	(L1) Ensure 'Audit Directory Service Changes' is set to include 'Success' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.4.4	(L3) Ensure 'Audit Directory Service Changes' is set to include 'Failure' (DC only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.5	Logon/Logoff		
17.5.1	(L1) Ensure 'Audit Account Lockout' is set to include 'Failure' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.5.2	(L3) Ensure 'Audit Account Lockout' is set to include 'Success' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.5.3	(L1) Ensure 'Audit Group Membership' is set to include 'Success' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.5.4	(L1) Ensure 'Audit Logoff' is set to include 'Success' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.5.5	(L1) Ensure 'Audit Logon' is set to 'Success and Failure' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.5.6	(L1) Ensure 'Audit Other Logon/Logoff Events' is set to 'Success and Failure' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.5.7	(L1) Ensure 'Audit Special Logon' is set to include 'Success' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.6	Object Access		
17.6.1	(L1) Ensure 'Audit Detailed File Share' is set to include 'Failure' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.6.2	(L1) Ensure 'Audit File Share' is set to 'Success and Failure' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>

Control		Set Correctly	
		Yes	No
17.6.3	(L1) Ensure 'Audit Other Object Access Events' is set to 'Success and Failure' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.6.4	(L1) Ensure 'Audit Removable Storage' is set to 'Success and Failure' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.7	Policy Change		
17.7.1	(L1) Ensure 'Audit Audit Policy Change' is set to include 'Success' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.7.2	(L3) Ensure 'Audit Audit Policy Change' is set to include 'Failure' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.7.3	(L1) Ensure 'Audit Authentication Policy Change' is set to include 'Success' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.7.4	(L1) Ensure 'Audit Authorization Policy Change' is set to include 'Success' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.7.5	(L1) Ensure 'Audit MPSSVC Rule-Level Policy Change' is set to 'Success and Failure' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.7.6	(L1) Ensure 'Audit Other Policy Change Events' is set to include 'Failure' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.8	Privilege Use		
17.8.1	(L1) Ensure 'Audit Sensitive Privilege Use' is set to 'Success and Failure' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.9	System		
17.9.1	(L1) Ensure 'Audit IPsec Driver' is set to 'Success and Failure' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.9.2	(L1) Ensure 'Audit Other System Events' is set to 'Success and Failure' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.9.3	(L1) Ensure 'Audit Security State Change' is set to include 'Success' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.9.4	(L1) Ensure 'Audit Security System Extension' is set to include 'Success' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
17.9.5	(L1) Ensure 'Audit System Integrity' is set to 'Success and Failure' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18	Administrative Templates (Computer)		
18.1	Control Panel		
18.1.1	Personalization		
18.1.1.1	(L1) Ensure 'Prevent enabling lock screen camera' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.1.1.2	(L1) Ensure 'Prevent enabling lock screen slide show' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.1.2	Regional and Language Options		
18.1.2.1	Handwriting personalization		

Control		Set Correctly	
		Yes	No
18.1.2.2	(L1) Ensure 'Allow users to enable online speech recognition services' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.1.3	(L2) Ensure 'Allow Online Tips' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.2	LAPS		
18.2.1	(L1) Ensure LAPS AdmPwd GPO Extension / CSE is installed (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.2.2	(L1) Ensure 'Do not allow password expiration time longer than required by policy' is set to 'Enabled' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.2.3	(L1) Ensure 'Enable Local Admin Password Management' is set to 'Enabled' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.2.4	(L1) Ensure 'Password Settings: Password Complexity' is set to 'Enabled: Large letters + small letters + numbers + special characters' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.2.5	(L1) Ensure 'Password Settings: Password Length' is set to 'Enabled: 15 or more' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.2.6	(L1) Ensure 'Password Settings: Password Age (Days)' is set to 'Enabled: 30 or fewer' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.3	MS Security Guide		
18.3.1	(L1) Ensure 'Apply UAC restrictions to local accounts on network logons' is set to 'Enabled' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.3.2	(L1) Ensure 'Configure SMB v1 client driver' is set to 'Enabled: Disable driver (recommended)' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.3.3	(L1) Ensure 'Configure SMB v1 server' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.3.4	(L1) Ensure 'Enable Structured Exception Handling Overwrite Protection (SEHOP)' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.3.5	(L1) Ensure 'NetBT NodeType configuration' is set to 'Enabled: P-node (recommended)' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.3.6	(L1) Ensure 'WDigest Authentication' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.4	MSS (Legacy)		
18.4.1	(L1) Ensure 'MSS: (AutoAdminLogon) Enable Automatic Logon (not recommended)' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.4.2	(L1) Ensure 'MSS: (DisableIPSourceRouting IPv6) IP source routing protection level (protects against packet spoofing)' is set to 'Enabled: Highest protection, source routing is completely disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>

Control		Set Correctly	
		Yes	No
18.4.3	(L1) Ensure 'MSS: (DisableIPSourceRouting) IP source routing protection level (protects against packet spoofing)' is set to 'Enabled: Highest protection, source routing is completely disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.4.4	(L1) Ensure 'MSS: (EnableICMPRedirect) Allow ICMP redirects to override OSPF generated routes' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.4.5	(L2) Ensure 'MSS: (KeepAliveTime) How often keep-alive packets are sent in milliseconds' is set to 'Enabled: 300,000 or 5 minutes (recommended)' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.4.6	(L1) Ensure 'MSS: (NoNameReleaseOnDemand) Allow the computer to ignore NetBIOS name release requests except from WINS servers' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.4.7	(L2) Ensure 'MSS: (PerformRouterDiscovery) Allow IRDP to detect and configure Default Gateway addresses (could lead to DoS)' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.4.8	(L1) Ensure 'MSS: (SafeDllSearchMode) Enable Safe DLL search mode (recommended)' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.4.9	(L1) Ensure 'MSS: (ScreenSaverGracePeriod) The time in seconds before the screen saver grace period expires (0 recommended)' is set to 'Enabled: 5 or fewer seconds' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.4.10	(L2) Ensure 'MSS: (TcpMaxDataRetransmissions IPv6) How many times unacknowledged data is retransmitted' is set to 'Enabled: 3' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.4.11	(L2) Ensure 'MSS: (TcpMaxDataRetransmissions) How many times unacknowledged data is retransmitted' is set to 'Enabled: 3' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.4.12	(L1) Ensure 'MSS: (WarningLevel) Percentage threshold for the security event log at which the system will generate a warning' is set to 'Enabled: 90% or less' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.5	Network		
18.5.1	Background Intelligent Transfer Service (BITS)		
18.5.2	BranchCache		
18.5.3	DirectAccess Client Experience Settings		
18.5.4	DNS Client		
18.5.4.1	(L1) Ensure 'Turn off multicast name resolution' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.5.5	Fonts		

Control		Set Correctly	
		Yes	No
18.5.5.1	(L2) Ensure 'Enable Font Providers' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.5.6	Hotspot Authentication		
18.5.7	Lanman Server		
18.5.8	Lanman Workstation		
18.5.8.1	(L1) Ensure 'Enable insecure guest logons' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.5.9	Link-Layer Topology Discovery		
18.5.9.1	(L2) Ensure 'Turn on Mapper I/O (LLTDIO) driver' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.5.9.2	(L2) Ensure 'Turn on Responder (RSPNDR) driver' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.5.10	Microsoft Peer-to-Peer Networking Services		
18.5.10.1	Peer Name Resolution Protocol		
18.5.10.2	(L2) Ensure 'Turn off Microsoft Peer-to-Peer Networking Services' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.5.11	Network Connections		
18.5.11.1	Windows Defender Firewall (formerly Windows Firewall)		
18.5.11.2	(L1) Ensure 'Prohibit installation and configuration of Network Bridge on your DNS domain network' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.5.11.3	(L1) Ensure 'Prohibit use of Internet Connection Sharing on your DNS domain network' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.5.11.4	(L1) Ensure 'Require domain users to elevate when setting a network's location' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.5.12	Network Connectivity Status Indicator		
18.5.13	Network Isolation		
18.5.14	Network Provider		
18.5.14.1	(L1) Ensure 'Hardened UNC Paths' is set to 'Enabled, with "Require Mutual Authentication" and "Require Integrity" set for all NETLOGON and SYSVOL shares' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.5.15	Offline Files		
18.5.16	QoS Packet Scheduler		
18.5.17	SNMP		
18.5.18	SSL Configuration Settings		
18.5.19	TCPIP Settings		
18.5.19.1	IPv6 Transition Technologies		
18.5.19.2	Parameters		
18.5.19.2.1	(L2) Disable IPv6 (Ensure TCPIP6 Parameter 'DisabledComponents' is set to '0xff (255)') (Automated)	<input type="checkbox"/>	<input type="checkbox"/>

Control		Set Correctly	
		Yes	No
18.5.20	Windows Connect Now		
18.5.20.1	(L2) Ensure 'Configuration of wireless settings using Windows Connect Now' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.5.20.2	(L2) Ensure 'Prohibit access of the Windows Connect Now wizards' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.5.21	Windows Connection Manager		
18.5.21.1	(L1) Ensure 'Minimize the number of simultaneous connections to the Internet or a Windows Domain' is set to 'Enabled: 1 = Minimize simultaneous connections' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.5.21.2	(L2) Ensure 'Prohibit connection to non-domain networks when connected to domain authenticated network' is set to 'Enabled' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.6	Printers		
18.7	Start Menu and Taskbar		
18.7.1	Notifications		
18.7.1.1	(L2) Ensure 'Turn off notifications network usage' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8	System		
18.8.1	Access-Denied Assistance		
18.8.2	App-V		
18.8.3	Audit Process Creation		
18.8.3.1	(L3) Ensure 'Include command line in process creation events' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.3.2	(L1) Ensure 'Include command line in process creation events' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.4	Credentials Delegation		
18.8.4.1	(L1) Ensure 'Encryption Oracle Remediation' is set to 'Enabled: Force Updated Clients' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.4.2	(L1) Ensure 'Remote host allows delegation of non-exportable credentials' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.5	Device Guard		
18.8.5.1	(NG) Ensure 'Turn On Virtualization Based Security' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.5.2	(NG) Ensure 'Turn On Virtualization Based Security: Select Platform Security Level' is set to 'Secure Boot and DMA Protection' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.5.3	(NG) Ensure 'Turn On Virtualization Based Security: Virtualization Based Protection of Code Integrity' is set to 'Enabled with UEFI lock' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>

Control		Set Correctly	
		Yes	No
18.8.5.4	(NG) Ensure 'Turn On Virtualization Based Security: Require UEFI Memory Attributes Table' is set to 'True (checked)' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.5.5	(NG) Ensure 'Turn On Virtualization Based Security: Credential Guard Configuration' is set to 'Enabled with UEFI lock' (MS Only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.5.6	(NG) Ensure 'Turn On Virtualization Based Security: Credential Guard Configuration' is set to 'Disabled' (DC Only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.5.7	(NG) Ensure 'Turn On Virtualization Based Security: Secure Launch Configuration' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.6	Device Health Attestation Service		
18.8.7	Device Installation		
18.8.8	Device Redirection		
18.8.9	Disk NV Cache		
18.8.10	Disk Quotas		
18.8.11	Display		
18.8.12	Distributed COM		
18.8.13	Driver Installation		
18.8.14	Early Launch Antimalware		
18.8.14.1	(L1) Ensure 'Boot-Start Driver Initialization Policy' is set to 'Enabled: Good, unknown and bad but critical' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.14.2	(L3) Ensure 'Boot-Start Driver Initialization Policy' is set to 'Not Configured' or 'Enabled with anything except ALL' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.15	Enhanced Storage Access		
18.8.16	File Classification Infrastructure		
18.8.17	File Share Shadow Copy Agent		
18.8.18	File Share Shadow Copy Provider		
18.8.19	Filesystem (formerly NTFS Filesystem)		
18.8.20	Folder Redirection		
18.8.21	Group Policy		
18.8.21.1	Logging and tracing		
18.8.21.2	(L1) Ensure 'Configure registry policy processing: Do not apply during periodic background processing' is set to 'Enabled: FALSE' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.21.3	(L1) Ensure 'Configure registry policy processing: Process even if the Group Policy objects have not changed' is set to 'Enabled: TRUE' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>

Control		Set Correctly	
		Yes	No
18.8.21.4	(L1) Ensure 'Continue experiences on this device' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.21.5	(L1) Ensure 'Turn off background refresh of Group Policy' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.22	Internet Communication Management		
18.8.22.1	Internet Communication settings		
18.8.22.1.1	(L1) Ensure 'Turn off downloading of print drivers over HTTP' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.22.1.2	(L2) Ensure 'Turn off handwriting personalization data sharing' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.22.1.3	(L2) Ensure 'Turn off handwriting recognition error reporting' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.22.1.4	(L2) Ensure 'Turn off Internet Connection Wizard if URL connection is referring to Microsoft.com' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.22.1.5	(L1) Ensure 'Turn off Internet download for Web publishing and online ordering wizards' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.22.1.6	(L2) Ensure 'Turn off printing over HTTP' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.22.1.7	(L2) Ensure 'Turn off Registration if URL connection is referring to Microsoft.com' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.22.1.8	(L2) Ensure 'Turn off Search Companion content file updates' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.22.1.9	(L2) Ensure 'Turn off the "Order Prints" picture task' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.22.1.10	(L2) Ensure 'Turn off the "Publish to Web" task for files and folders' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.22.1.11	(L2) Ensure 'Turn off the Windows Messenger Customer Experience Improvement Program' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.22.1.12	(L2) Ensure 'Turn off Windows Customer Experience Improvement Program' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.22.1.13	(L2) Ensure 'Turn off Windows Error Reporting' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.23	iSCSI		
18.8.24	KDC		
18.8.25	Kerberos		
18.8.25.1	(L2) Ensure 'Support device authentication using certificate' is set to 'Enabled: Automatic' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.26	Kernel DMA Protection		
18.8.27	Locale Services		

Control		Set Correctly	
		Yes	No
18.8.27.1	(L2) Ensure 'Disallow copying of user input methods to the system account for sign-in' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.28	Logon		
18.8.28.1	(L1) Ensure 'Block user from showing account details on sign-in' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.28.2	(L1) Ensure 'Do not display network selection UI' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.28.3	(L1) Ensure 'Do not enumerate connected users on domain-joined computers' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.28.4	(L1) Ensure 'Enumerate local users on domain-joined computers' is set to 'Disabled' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.28.5	(L1) Ensure 'Turn off app notifications on the lock screen' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.28.6	(L1) Ensure 'Turn off picture password sign-in' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.28.7	(L1) Ensure 'Turn on convenience PIN sign-in' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.29	Mitigation Options		
18.8.30	Net Logon		
18.8.31	OS Policies		
18.8.32	Performance Control Panel		
18.8.33	PIN Complexity		
18.8.34	Power Management		
18.8.34.1	Button Settings		
18.8.34.2	Energy Saver Settings		
18.8.34.3	Hard Disk Settings		
18.8.34.4	Notification Settings		
18.8.34.5	Power Throttling Settings		
18.8.34.6	Sleep Settings		
18.8.34.6.1	(L2) Ensure 'Allow network connectivity during connected-standby (on battery)' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.34.6.2	(L2) Ensure 'Allow network connectivity during connected-standby (plugged in)' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.34.6.3	(L1) Ensure 'Require a password when a computer wakes (on battery)' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.34.6.4	(L1) Ensure 'Require a password when a computer wakes (plugged in)' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.35	Recovery		
18.8.36	Remote Assistance		

Control		Set Correctly	
		Yes	No
18.8.36.1	(L1) Ensure 'Configure Offer Remote Assistance' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.36.2	(L1) Ensure 'Configure Solicited Remote Assistance' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.37	Remote Procedure Call		
18.8.37.1	(L1) Ensure 'Enable RPC Endpoint Mapper Client Authentication' is set to 'Enabled' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.37.2	(L2) Ensure 'Restrict Unauthenticated RPC clients' is set to 'Enabled: Authenticated' (MS only) (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.38	Removable Storage Access		
18.8.39	Scripts		
18.8.40	Server Manager		
18.8.41	Service Control Manager Settings		
18.8.42	Shutdown		
18.8.43	Shutdown Options		
18.8.44	Storage Health		
18.8.45	Storage Sense		
18.8.46	System Restore		
18.8.47	Troubleshooting and Diagnostics		
18.8.47.1	Application Compatibility Diagnostics		
18.8.47.2	Corrupted File Recovery		
18.8.47.3	Disk Diagnostic		
18.8.47.4	Fault Tolerant Heap		
18.8.47.5	Microsoft Support Diagnostic Tool		
18.8.47.5.1	(L2) Ensure 'Microsoft Support Diagnostic Tool: Turn on MSDT interactive communication with support provider' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.47.6	MSI Corrupted File Recovery		
18.8.47.7	Scheduled Maintenance		
18.8.47.8	Scripted Diagnostics		
18.8.47.9	Windows Boot Performance Diagnostics		
18.8.47.10	Windows Memory Leak Diagnosis		
18.8.47.11	Windows Performance PerfTrack		
18.8.47.11.1	(L2) Ensure 'Enable/Disable PerfTrack' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.48	Trusted Platform Module Services		
18.8.49	User Profiles		
18.8.49.1	(L2) Ensure 'Turn off the advertising ID' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.8.50	Windows File Protection		

Control		Set Correctly	
		Yes	No
18.8.51	Windows HotStart		
18.8.52	Windows Time Service		
18.8.52.1	Time Providers		
18.8.52.1.1	(L2) Ensure 'Enable Windows NTP Client' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18.8.52.1.2	(L2) Ensure 'Enable Windows NTP Server' is set to 'Disabled' (MS only) (Automated)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18.9	Windows Components		
18.9.1	Active Directory Federation Services		
18.9.2	ActiveX Installer Service		
18.9.3	Add features to Windows 8 / 8.1 / 10 (formerly Windows Anytime Upgrade)		
18.9.4	App Package Deployment		
18.9.4.1	(L2) Ensure 'Allow a Windows app to share application data between users' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18.9.5	App Privacy		
18.9.6	App runtime		
18.9.6.1	(L1) Ensure 'Allow Microsoft accounts to be optional' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18.9.7	Application Compatibility		
18.9.7.1	(L3) Ensure 'Turn off Inventory Collector' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18.9.8	AutoPlay Policies		
18.9.8.1	(L1) Ensure 'Disallow Autoplay for non-volume devices' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18.9.8.2	(L1) Ensure 'Set the default behavior for AutoRun' is set to 'Enabled: Do not execute any autorun commands' (Automated)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18.9.8.3	(L1) Ensure 'Turn off Autoplay' is set to 'Enabled: All drives' (Automated)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18.9.9	Backup		
18.9.10	Biometrics		
18.9.10.1	Facial Features		
18.9.10.1.1	(L1) Ensure 'Configure enhanced anti-spoofing' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18.9.11	BitLocker Drive Encryption		
18.9.12	Camera		
18.9.12.1	(L2) Ensure 'Allow Use of Camera' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18.9.13	Cloud Content		

Control		Set Correctly	
		Yes	No
18.9.13.1	(L1) Ensure 'Turn off Microsoft consumer experiences' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.14	Connect		
18.9.14.1	(L1) Ensure 'Require pin for pairing' is set to 'Enabled: First Time' OR 'Enabled: Always' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.15	Credential User Interface		
18.9.15.1	(L1) Ensure 'Do not display the password reveal button' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.15.2	(L1) Ensure 'Enumerate administrator accounts on elevation' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.16	Data Collection and Preview Builds		
18.9.16.1	(L1) Ensure 'Allow Telemetry' is set to 'Enabled: 0 - Security [Enterprise Only]' or 'Enabled: 1 - Basic' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.16.2	(L2) Ensure 'Configure Authenticated Proxy usage for the Connected User Experience and Telemetry service' is set to 'Enabled: Disable Authenticated Proxy usage' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.16.3	(L1) Ensure 'Do not show feedback notifications' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.16.4	(L1) Ensure 'Toggle user control over Insider builds' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.17	Delivery Optimization		
18.9.18	Desktop Gadgets		
18.9.19	Desktop Window Manager		
18.9.20	Device and Driver Compatibility		
18.9.21	Device Registration (formerly Workplace Join)		
18.9.22	Digital Locker		
18.9.23	Edge UI		
18.9.24	EMET		
18.9.25	Event Forwarding		
18.9.26	Event Log Service		
18.9.26.1	Application		
18.9.26.1.1	(L1) Ensure 'Application: Control Event Log behavior when the log file reaches its maximum size' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.26.1.2	(L1) Ensure 'Application: Specify the maximum log file size (KB)' is set to 'Enabled: 32,768 or greater' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.26.2	Security		
18.9.26.2.1	(L1) Ensure 'Security: Control Event Log behavior when the log file reaches its maximum size' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>

Control		Set Correctly	
		Yes	No
18.9.26.2.2	(L1) Ensure 'Security: Specify the maximum log file size (KB)' is set to 'Enabled: 196,608 or greater' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.26.3	Setup		
18.9.26.3.1	(L1) Ensure 'Setup: Control Event Log behavior when the log file reaches its maximum size' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.26.3.2	(L1) Ensure 'Setup: Specify the maximum log file size (KB)' is set to 'Enabled: 32,768 or greater' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.26.4	System		
18.9.26.4.1	(L1) Ensure 'System: Control Event Log behavior when the log file reaches its maximum size' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.26.4.2	(L1) Ensure 'System: Specify the maximum log file size (KB)' is set to 'Enabled: 32,768 or greater' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.27	Event Logging		
18.9.28	Event Viewer		
18.9.29	Family Safety (formerly Parental Controls)		
18.9.30	File Explorer (formerly Windows Explorer)		
18.9.30.1	Previous Versions		
18.9.30.2	(L1) Ensure 'Turn off Data Execution Prevention for Explorer' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.30.3	(L1) Ensure 'Turn off heap termination on corruption' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.30.4	(L1) Ensure 'Turn off shell protocol protected mode' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.31	File History		
18.9.32	Find My Device		
18.9.33	Game Explorer		
18.9.34	Handwriting		
18.9.35	HomeGroup		
18.9.36	Import Video		
18.9.37	Internet Explorer		
18.9.38	Internet Information Services		
18.9.39	Location and Sensors		
18.9.39.1	(L2) Ensure 'Turn off location' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.40	Maintenance Scheduler		
18.9.41	Maps		
18.9.42	MDM		
18.9.43	Messaging		

Control		Set Correctly	
		Yes	No
18.9.43.1	(L2) Ensure 'Allow Message Service Cloud Sync' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.44	Microsoft account		
18.9.44.1	(L1) Ensure 'Block all consumer Microsoft account user authentication' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.45	Microsoft Edge		
18.9.46	Microsoft FIDO Authentication		
18.9.47	Microsoft Secondary Authentication Factor		
18.9.48	Microsoft User Experience Virtualization		
18.9.49	NetMeeting		
18.9.50	Network Access Protection		
18.9.51	Network Projector		
18.9.52	OneDrive (formerly SkyDrive)		
18.9.52.1	(L1) Ensure 'Prevent the usage of OneDrive for file storage' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.53	Online Assistance		
18.9.54	OOBE		
18.9.55	Password Synchronization		
18.9.56	Portable Operating System		
18.9.57	Presentation Settings		
18.9.58	Push To Install		
18.9.59	Remote Desktop Services (formerly Terminal Services)		
18.9.59.1	RD Licensing (formerly TS Licensing)		
18.9.59.2	Remote Desktop Connection Client		
18.9.59.2.1	RemoteFX USB Device Redirection		
18.9.59.2.2	(L1) Ensure 'Do not allow passwords to be saved' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.59.3	Remote Desktop Session Host (formerly Terminal Server)		
18.9.59.3.1	Application Compatibility		
18.9.59.3.2	Connections		
18.9.59.3.2.1	(L2) Ensure 'Restrict Remote Desktop Services users to a single Remote Desktop Services session' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.59.3.3	Device and Resource Redirection		
18.9.59.3.3.1	(L2) Ensure 'Do not allow COM port redirection' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.59.3.3.2	(L1) Ensure 'Do not allow drive redirection' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.59.3.3.3	(L2) Ensure 'Do not allow LPT port redirection' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>

Control		Set Correctly	
		Yes	No
18.9.59.3.3.4	(L2) Ensure 'Do not allow supported Plug and Play device redirection' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.59.3.4	Licensing		
18.9.59.3.5	Printer Redirection		
18.9.59.3.6	Profiles		
18.9.59.3.7	RD Connection Broker (formerly TS Connection Broker)		
18.9.59.3.8	Remote Session Environment		
18.9.59.3.9	Security		
18.9.59.3.9.1	(L1) Ensure 'Always prompt for password upon connection' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.59.3.9.2	(L1) Ensure 'Require secure RPC communication' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.59.3.9.3	(L1) Ensure 'Require use of specific security layer for remote (RDP) connections' is set to 'Enabled: SSL' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.59.3.9.4	(L1) Ensure 'Require user authentication for remote connections by using Network Level Authentication' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.59.3.9.5	(L1) Ensure 'Set client connection encryption level' is set to 'Enabled: High Level' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.59.3.10	Session Time Limits		
18.9.59.3.10.1	(L2) Ensure 'Set time limit for active but idle Remote Desktop Services sessions' is set to 'Enabled: 15 minutes or less' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.59.3.10.2	(L2) Ensure 'Set time limit for disconnected sessions' is set to 'Enabled: 1 minute' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.59.3.11	Temporary folders		
18.9.59.3.11.1	(L1) Ensure 'Do not delete temp folders upon exit' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.59.3.11.2	(L1) Ensure 'Do not use temporary folders per session' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.60	RSS Feeds		
18.9.60.1	(L1) Ensure 'Prevent downloading of enclosures' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.60.2	(L3) Ensure 'Turn on Basic feed authentication over HTTP' is set to 'Disabled' or 'Not Configured' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.61	Search		
18.9.61.1	OCR		
18.9.61.2	(L2) Ensure 'Allow Cloud Search' is set to 'Enabled: Disable Cloud Search' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>

Control		Set Correctly	
		Yes	No
18.9.61.3	(L1) Ensure 'Allow indexing of encrypted files' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.62	Security Center		
18.9.63	Server for NIS		
18.9.64	Shutdown Options		
18.9.65	Smart Card		
18.9.66	Software Protection Platform		
18.9.66.1	(L2) Ensure 'Turn off KMS Client Online AVS Validation' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.67	Sound Recorder		
18.9.68	Speech		
18.9.69	Store		
18.9.70	Sync your settings		
18.9.71	Tablet PC		
18.9.72	Task Scheduler		
18.9.73	Text Input		
18.9.74	Windows Calendar		
18.9.75	Windows Color System		
18.9.76	Windows Customer Experience Improvement Program		
18.9.77	Windows Defender Antivirus (formerly Windows Defender)		
18.9.77.1	Client Interface		
18.9.77.2	Exclusions		
18.9.77.3	MAPS		
18.9.77.3.1	(L1) Ensure 'Configure local setting override for reporting to Microsoft MAPS' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.77.3.2	(L2) Ensure 'Join Microsoft MAPS' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.77.4	MpEngine		
18.9.77.5	Network Inspection System		
18.9.77.6	Quarantine		
18.9.77.7	Real-time Protection		
18.9.77.7.1	(L1) Ensure 'Turn on behavior monitoring' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.77.8	Remediation		
18.9.77.9	Reporting		
18.9.77.9.1	(L2) Ensure 'Configure Watson events' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.77.10	Scan		
18.9.77.10.1	(L1) Ensure 'Scan removable drives' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>

Control		Set Correctly	
		Yes	No
18.9.77.10.2	(L1) Ensure 'Turn on e-mail scanning' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.77.11	Security Intelligence Updates (formerly Signature Updates)		
18.9.77.12	Threats		
18.9.77.13	Windows Defender Exploit Guard		
18.9.77.13.1	Attack Surface Reduction		
18.9.77.13.2	Controlled Folder Access		
18.9.77.13.3	Network Protection		
18.9.77.13.3.1	(L1) Ensure 'Prevent users and apps from accessing dangerous websites' is set to 'Enabled: Block' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.77.14	(L1) Ensure 'Configure detection for potentially unwanted applications' is set to 'Enabled: Block' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.77.15	(L1) Ensure 'Turn off Windows Defender AntiVirus' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.78	Windows Defender Application Guard		
18.9.79	Windows Defender Exploit Guard		
18.9.80	Windows Defender SmartScreen		
18.9.80.1	Explorer		
18.9.80.1.1	(L1) Ensure 'Configure Windows Defender SmartScreen' is set to 'Enabled: Warn and prevent bypass' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.81	Windows Error Reporting		
18.9.82	Windows Game Recording and Broadcasting		
18.9.83	Windows Hello for Business (formerly Microsoft Passport for Work)		
18.9.84	Windows Ink Workspace		
18.9.84.1	(L2) Ensure 'Allow suggested apps in Windows Ink Workspace' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.84.2	(L1) Ensure 'Allow Windows Ink Workspace' is set to 'Enabled: On, but disallow access above lock' OR 'Disabled' but not 'Enabled: On' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.85	Windows Installer		
18.9.85.1	(L1) Ensure 'Allow user control over installs' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.85.2	(L1) Ensure 'Always install with elevated privileges' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.85.3	(L2) Ensure 'Prevent Internet Explorer security prompt for Windows Installer scripts' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.86	Windows Logon Options		
18.9.86.1	(L1) Ensure 'Sign-in and lock last interactive user automatically after a restart' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>

Control		Set Correctly	
		Yes	No
18.9.87	Windows Mail		
18.9.88	Windows Media Center		
18.9.89	Windows Media Digital Rights Management		
18.9.90	Windows Media Player		
18.9.91	Windows Meeting Space		
18.9.92	Windows Messenger		
18.9.93	Windows Mobility Center		
18.9.94	Windows Movie Maker		
18.9.95	Windows PowerShell		
18.9.95.1	(L1) Ensure 'Turn on PowerShell Script Block Logging' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.95.2	(L3) Ensure 'Turn on PowerShell Script Block Logging' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.95.3	(L1) Ensure 'Turn on PowerShell Transcription' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.96	Windows Reliability Analysis		
18.9.97	Windows Remote Management (WinRM)		
18.9.97.1	WinRM Client		
18.9.97.1.1	(L1) Ensure 'Allow Basic authentication' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.97.1.2	(L1) Ensure 'Allow unencrypted traffic' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.97.1.3	(L1) Ensure 'Disallow Digest authentication' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.97.2	WinRM Service		
18.9.97.2.1	(L1) Ensure 'Allow Basic authentication' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.97.2.2	(L2) Ensure 'Allow remote server management through WinRM' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.97.2.3	(L1) Ensure 'Allow unencrypted traffic' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.97.2.4	(L1) Ensure 'Disallow WinRM from storing RunAs credentials' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.98	Windows Remote Shell		
18.9.98.1	(L2) Ensure 'Allow Remote Shell Access' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.99	Windows Security (formerly Windows Defender Security Center)		
18.9.99.1	Account protection		
18.9.99.2	App and browser protection		

Control		Set Correctly	
		Yes	No
18.9.99.2.1	(L1) Ensure 'Prevent users from modifying settings' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.100	Windows SideShow		
18.9.101	Windows System Resource Manager		
18.9.102	Windows Update		
18.9.102.1	Windows Update for Business (formerly Defer Windows Updates)		
18.9.102.1.1	(L1) Ensure 'Manage preview builds' is set to 'Enabled: Disable preview builds' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.102.1.2	(L1) Ensure 'Select when Preview Builds and Feature Updates are received' is set to 'Enabled: Semi-Annual Channel, 180 or more days' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.102.1.3	(L1) Ensure 'Select when Quality Updates are received' is set to 'Enabled: 0 days' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.102.2	(L1) Ensure 'Configure Automatic Updates' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.102.3	(L1) Ensure 'Configure Automatic Updates: Scheduled install day' is set to '0 - Every day' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
18.9.102.4	(L1) Ensure 'No auto-restart with logged on users for scheduled automatic updates installations' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
19	Administrative Templates (User)		
19.1	Control Panel		
19.1.1	Add or Remove Programs		
19.1.2	Display		
19.1.3	Personalization (formerly Desktop Themes)		
19.1.3.1	(L1) Ensure 'Enable screen saver' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
19.1.3.2	(L1) Ensure 'Force specific screen saver: Screen saver executable name' is set to 'Enabled: scrnsave.scr' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
19.1.3.3	(L1) Ensure 'Password protect the screen saver' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
19.1.3.4	(L1) Ensure 'Screen saver timeout' is set to 'Enabled: 900 seconds or fewer, but not 0' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
19.2	Desktop		
19.3	Network		
19.4	Shared Folders		
19.5	Start Menu and Taskbar		
19.5.1	Notifications		

Control		Set Correctly	
		Yes	No
19.5.1.1	(L1) Ensure 'Turn off toast notifications on the lock screen' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
19.6	System		
19.6.1	Ctrl+Alt+Del Options		
19.6.2	Display		
19.6.3	Driver Installation		
19.6.4	Folder Redirection		
19.6.5	Group Policy		
19.6.6	Internet Communication Management		
19.6.6.1	Internet Communication settings		
19.6.6.1.1	(L2) Ensure 'Turn off Help Experience Improvement Program' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
19.7	Windows Components		
19.7.1	Add features to Windows 8 / 8.1 / 10 (formerly Windows Anytime Upgrade)		
19.7.2	App runtime		
19.7.3	Application Compatibility		
19.7.4	Attachment Manager		
19.7.4.1	(L1) Ensure 'Do not preserve zone information in file attachments' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
19.7.4.2	(L1) Ensure 'Notify antivirus programs when opening attachments' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
19.7.5	AutoPlay Policies		
19.7.6	Backup		
19.7.7	Cloud Content		
19.7.7.1	(L1) Ensure 'Configure Windows spotlight on lock screen' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
19.7.7.2	(L1) Ensure 'Do not suggest third-party content in Windows spotlight' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
19.7.7.3	(L2) Ensure 'Do not use diagnostic data for tailored experiences' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
19.7.7.4	(L2) Ensure 'Turn off all Windows spotlight features' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
19.7.8	Credential User Interface		
19.7.9	Data Collection and Preview Builds		
19.7.10	Desktop Gadgets		
19.7.11	Desktop Window Manager		
19.7.12	Digital Locker		
19.7.13	Edge UI		
19.7.14	File Explorer (formerly Windows Explorer)		

Control		Set Correctly	
		Yes	No
19.7.15	File Revocation		
19.7.16	IME		
19.7.17	Import Video		
19.7.18	Instant Search		
19.7.19	Internet Explorer		
19.7.20	Location and Sensors		
19.7.21	Microsoft Edge		
19.7.22	Microsoft Management Console		
19.7.23	Microsoft User Experience Virtualization		
19.7.24	NetMeeting		
19.7.25	Network Projector		
19.7.26	Network Sharing		
19.7.26.1	(L1) Ensure 'Prevent users from sharing files within their profile.' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
19.7.27	OOBE		
19.7.28	Presentation Settings		
19.7.29	Remote Desktop Services (formerly Terminal Services)		
19.7.30	RSS Feeds		
19.7.31	Search		
19.7.32	Sound Recorder		
19.7.33	Store		
19.7.34	Tablet PC		
19.7.35	Task Scheduler		
19.7.36	Windows Calendar		
19.7.37	Windows Color System		
19.7.38	Windows Defender SmartScreen		
19.7.39	Windows Error Reporting		
19.7.40	Windows Hello for Business (formerly Microsoft Passport for Work)		
19.7.41	Windows Installer		
19.7.41.1	(L1) Ensure 'Always install with elevated privileges' is set to 'Disabled' (Automated)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
19.7.42	Windows Logon Options		
19.7.43	Windows Mail		
19.7.44	Windows Media Center		
19.7.45	Windows Media Player		
19.7.45.1	Networking		
19.7.45.2	Playback		
19.7.45.2.1	(L2) Ensure 'Prevent Codec Download' is set to 'Enabled' (Automated)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Control		Set Correctly	
		Yes	No
20	Additional Security Technical Implementation Guide (STIG) Settings		
20.1	(L3) Ensure 'DoD Interoperability Root CA cross-certificates must be installed in the Untrusted Certificates Store on unclassified systems' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>
20.2	(L3) Ensure 'DoD Root CA certificates must be installed in the Trusted Root Store' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>
20.3	(L3) Ensure 'Event Viewer must be protected from unauthorized modification and deletion' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>
20.4	(L3) Ensure 'Fax Server role' is set to 'Not Installed' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>
20.5	(L3) Ensure 'Local volumes must use a format that supports NTFS attributes' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>
20.6	(L3) Ensure 'Microsoft FTP Service (FTPSVC)' is set to 'Not Installed' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
20.7	(L3) Ensure 'Peer Name Resolution Protocol (PNRPSvc)' is set to 'Not Installed' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
20.8	(L3) Ensure 'Permissions for the Application Event Log must prevent access by non-privileged accounts' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>
20.9	(L3) Ensure 'Permissions for the Security Event Log must prevent access by non-privileged accounts' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>
20.10	(L3) Ensure 'Permissions for the System Event Log must prevent access by non-privileged accounts' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>
20.11	(L3) Ensure 'Permissions on the Active Directory data files must only allow System and Administrators access' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>
20.12	(L3) Ensure 'Server Message Block (SMB) v1 protocol must be uninstalled' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>
20.13	(L3) Ensure 'Simple TCP/IP Services (simptcp)' is set to 'Not Installed' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
20.14	(L3) Ensure 'Software certificate installation files must be removed from Windows Server 2016' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>
20.15	(L3) Ensure 'Systems must be maintained at a supported servicing level' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>
20.16	(L3) Ensure 'Telnet (TlntSvr)' is set to 'Not Installed' (Automated)	<input type="checkbox"/>	<input type="checkbox"/>
20.17	(L3) Ensure 'TFTP Client must not be installed' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>
20.18	(L3) Ensure 'US DoD CCEB Interoperability Root CA cross-certificates must be installed in the Untrusted Certificates Store on unclassified systems' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>

Control		Set Correctly	
		Yes	No
20.19	(L3) Ensure 'Windows PowerShell 2.0 must not be installed' (Manual)	<input type="checkbox"/>	<input type="checkbox"/>

Appendix: Change History

Date	Version	Changes for this version
9/15/2020	1.0.0	Initial Public Release