CYBER SECURITY RISK ASSESSMENT REPORT

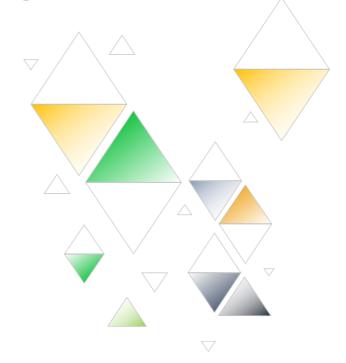
METASPLOITABLE2

QUANTICA SRL VIA FRATTINA

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VERSION 1.0.0.1

08/=%/2024



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APPROVED BY	DIRECTOR OF COMPANY	DATE	09/05/2024

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PROJECT OWNERSHIP

PROJECT NAME	VULNERA	BLITIES ANALISYS METASPLOITABLE2			
PROJECT OVERVIEW	Analysis	Analysis of Vulnerabilities in Metasploitable2 on Ports and System Criticalities"			
PROJECT MANAG	ER NAME	VULNERABILITES			
	PHONE	S.S.			
	EMAIL	S.S.			
CONTACT INFO	MAILING ADDRESS	S.S.			

PLAN VERSION

VERSION	DATE	AUTHOR			
02AA10101	08/05/20204	RED TEAM			
REASON					

CONTRACT NUMBER .AIHSUGSHUS2989112992

SECTIONS IMPACTED				
SECTION TITLE	AMENDMENT			
IDENTIFY	identifying and understanding these vulnerabilities, the project seeks to evaluate the potential risks and consequences they pose to the security and integrity of the system			
ANALISYS	Through thorough analysis and testing, the project aims to provide insights into the severity of these vulnerabilities and recommend appropriate mitigation strategies to enhance the overall security posture of the system			

RISK MANAGEMENT PROCESS

Define process / approach.

The risk management process for scanning Metasploitable2 using Nessus involves several key steps:

- 1. **Planning**: Define the scope and objectives of the risk management process. Determine the specific goals for scanning Metasploitable2 using Nessus, such as identifying vulnerabilities and assessing their potential impact on the system.
- 2. **Preparation**: Prepare the environment for scanning by ensuring that Metasploitable2 is properly set up and accessible. Install and configure Nessus to scan the target system effectively. Verify network connectivity and access permissions to ensure seamless scanning.
- 3. **Scanning**: Initiate the Nessus scan of Metasploitable2 according to the defined scope. Configure Nessus to scan for various types of vulnerabilities, including known exploits, misconfigurations, and weaknesses in system services and protocols. Monitor the scanning process to ensure it progresses smoothly and captures relevant information.
- 4. **Analysis**: Analyze the results of the Nessus scan to identify vulnerabilities present in Metasploitable2. Prioritize vulnerabilities based on their severity, potential impact, and exploitability. Cross-reference the findings with known vulnerabilities and security advisories to validate their significance.
- 5. **Risk Assessment**: Assess the risks associated with the identified vulnerabilities in Metasploitable2. Consider factors such as the likelihood of exploitation, potential consequences of a successful attack, and the system's criticality to determine the level of risk posed by each vulnerability.
- 6. **Mitigation**: Develop and implement mitigation strategies to address the identified vulnerabilities and reduce the associated risks. This may involve applying patches and updates, reconfiguring system settings, implementing security controls, or deploying additional security measures to mitigate the identified risks effectively.
- 7. **Monitoring and Review**: Continuously monitor the security posture of Metasploitable2 and regularly review the effectiveness of the implemented mitigation measures. Conduct periodic vulnerability scans using Nessus to detect and address any new vulnerabilities that may arise over time.

RESOURCE REQUIREMENTS

TOOLS

For conducting vulnerability scans on Metasploitable2 using Nessus, several resources are required, including tools and infrastructure:

- 1. **Nessus Vulnerability Scanner**: The primary tool for conducting vulnerability scans on Metasploitable2. Nessus should be properly installed and configured to scan the target system effectively.
- 2. **Metasploitable2 Virtual Machine**: The target system for vulnerability scanning. Metasploitable2 should be set up in a virtualized environment, such as VMware or VirtualBox, and accessible to the Nessus scanner.

- 3. **Network Infrastructure**: A stable and reliable network infrastructure is essential for communication between the Nessus scanner and the Metasploitable2 virtual machine. Ensure proper network connectivity, bandwidth, and firewall configurations to facilitate scanning.
- 4. **Computing Resources**: Sufficient computing resources are required to run both the Nessus scanner and the Metasploitable2 virtual machine simultaneously. This includes adequate CPU, memory, and storage resources to support the scanning process effectively.
- 5. **Operating System**: The operating system hosting the Nessus scanner should be compatible with the Nessus software and meet the system requirements specified by Tenable, the company behind Nessus.
- 6. **Software Updates**: Regular updates and patches should be applied to the Nessus scanner software to ensure it has the latest vulnerability signatures and scanning capabilities.
- 7. **Documentation and Guides**: Access to documentation, user guides, and tutorials for both Nessus and Metasploitable2 can help users understand how to configure, use, and interpret the results of the vulnerability scans effectively.
- 8. **Training and Expertise**: Adequate training and expertise in using Nessus and conducting vulnerability scans are essential for maximizing the effectiveness of the scanning process and interpreting the results accurately.

By ensuring the availability of these resources, organizations can effectively leverage Nessus for vulnerability scanning on Metasploitable 2 and enhance the overall security of their systems.

ROLES & RESPONSIBILITIES

For each risk management plan activity, name parties responsible and define responsibilities

Here's a breakdown of roles and responsibilities for each activity in the risk management plan:

1. Planning:

- o Responsible Party: Security Team / Project Manager
- o Responsibilities: Define the scope and objectives of the risk management process, including the specific goals for scanning Metasploitable2 using Nessus. Develop a plan for preparing the environment and conducting the vulnerability scans.

2. Preparation:

- o Responsible Party: IT Operations Team
- Responsibilities: Ensure that the Metasploitable2 virtual machine is properly set up and accessible for scanning. Install and configure Nessus on the scanning system. Verify network connectivity and access permissions for conducting the scans.

3. Scanning:

- o Responsible Party: Security Analyst / Nessus Administrator
- Responsibilities: Initiate and configure the Nessus scan of Metasploitable2 according to the defined scope. Monitor the scanning process to ensure it progresses smoothly and captures relevant information.

4. Analysis:

- o Responsible Party: Security Analyst / Vulnerability Management Team
- Responsibilities: Analyze the results of the Nessus scan to identify vulnerabilities present in Metasploitable2. Cross-reference the findings with known vulnerabilities and security advisories to validate their significance.

5. Risk Assessment:

- o Responsible Party: Risk Management Team
- Responsibilities: Assess the risks associated with the identified vulnerabilities in Metasploitable2. Consider factors such as the likelihood of exploitation, potential consequences of a successful attack, and the system's criticality to determine the level of risk posed by each vulnerability.

6. Mitigation:

- o Responsible Party: IT Security Team / System Administrators
- Responsibilities: Develop and implement mitigation strategies to address the identified vulnerabilities and reduce the associated risks. This may involve applying patches and updates, reconfiguring system settings, or deploying additional security measures.

7. Monitoring and Review:

- o Responsible Party: Security Operations Center (SOC) / IT Operations Team
- Responsibilities: Continuously monitor the security posture of Metasploitable2 and regularly review the effectiveness of the implemented mitigation measures. Conduct periodic vulnerability scans using Nessus to detect and address any new vulnerabilities that may arise over time

By assigning specific roles and responsibilities to each activity, organizations can ensure accountability and effective coordination throughout the risk management process for scanning Metasploitable2 using Nessus.

FINANCIAL IMPACT

ESTIMATED FUNDS REQUIRED & BUDGETARY IMPACT

ESI	IMATE	ADDITIONAL COMMENTS
INITIAL FEES	EURO XXXXXX	1. Scalability : It's important to consider the scalability of the Nessus deployment. As the organization's infrastructure grows or
RECURRING FEES	EURO XXXXX	changes, additional licenses may be required to accommodate the increased scanning needs. Factor in potential scalability costs
ASSUMPTIONS	EURO XXXXX	when estimating the long-term financial impact. ROI Analysis: Conduct a return on investment (ROI) analysis to evaluate the cost-effectiveness of using Nessus for vulnerability scanning. Assess the potential savings from mitigating vulnerabilities, avoiding security breaches, and reducing operational risks against the costs associated with Nessus licenses and subscriptions. Training and Education: Allocate resources for training and education to ensure that the security team is proficient in using Nessus effectively. Investing in training programs and certifications can enhance the team's capabilities in vulnerability management and maximize the value derived from the Nessus investment. Integration and Automation: Explore opportunities to integrate Nessus with other security tools and platforms within the organization's cybersecurity ecosystem. Automation of vulnerability scanning and remediation workflows can streamline processes, improve efficiency, and potentially reduce operational costs over time. Compliance Requirements: Consider any compliance requirements or industry standards that mandate regular vulnerability assessments. Budget for ongoing compliance efforts, including audit preparations, documentation, and reporting, to ensure adherence to regulatory obligations. Vendor Negotiations: Engage in negotiations with Nessus vendors to explore potential discounts, volume pricing options, or bundled offerings that may help optimize costs without compromising on functionality or service quality. Risk Management Alignment: Align the budget for Nessus deployment with the organization's broader risk management strategy and priorities. Ensure that financial resources are allocated strategically to address the most critical vulnerabilities and mitigate the highest priority risks effectively.

Describe any impact to plan schedule. List any start / end dates affected.

The impact on the plan schedule for vulnerability scanning on Metasploitable2 using Nessus may vary depending on several factors. Here's how the timeline could be affected:

1. Initial Setup:

 Start Date: The initial setup phase, including installing and configuring Nessus and preparing the environment for scanning, may take some time. Delays in acquiring licenses, setting up the scanning infrastructure, or resolving compatibility issues could extend the start date for vulnerability scanning activities.

2. Scanning Duration:

Ouration: The actual scanning process using Nessus may require several hours or days, depending on factors such as the size of the target system, the complexity of the network, and the depth of the scan configuration. The scanning duration should be factored into the overall project timeline to ensure adequate time for completion.

3. Analysis and Remediation:

• End Date: Once the scanning is complete, the analysis of scan results and the implementation of mitigation measures may introduce additional time to the project timeline. Identifying and prioritizing vulnerabilities, developing mitigation strategies, and applying patches or configurations to address the vulnerabilities could extend the end date for completing the project.

4. Resource Availability:

Resource Constraints: The availability of resources, including personnel, tools, and
infrastructure, could impact the timeline for vulnerability scanning activities. Delays in
resource allocation or competing priorities may affect the pace of progress and prolong the
duration of the project.

5. Unexpected Issues:

 Unforeseen Challenges: Unexpected issues such as technical glitches, network disruptions, or software bugs could disrupt the scanning process and lead to delays in project milestones.
 Contingency plans should be in place to address any unforeseen challenges and mitigate their impact on the schedule.

Overall, while vulnerability scanning using Nessus on Metasploitable2 can be a valuable security measure, it's essential to account for potential schedule impacts and allocate sufficient time and resources to complete the project successfully. Regular monitoring and communication throughout the project lifecycle can help identify and address any schedule deviations promptly, minimizing their impact on overall project timelines.

RISK CATEGORIES

Define grouping methodology / organization process of potential causes.

Risk categories serve as a framework for organizing and categorizing potential causes of risk within a project or organization. Here's a methodology for defining risk categories:

- 1. **Identify Risk Domains**: Begin by identifying the major domains or areas of concern within the project or organization where risks may arise. Common risk domains include:
 - o Technical Risks: Risks related to technology, systems, and infrastructure.
 - Operational Risks: Risks related to processes, procedures, and day-to-day operations.
 - o Financial Risks: Risks related to budget, funding, and financial resources.
 - o Legal and Regulatory Risks: Risks related to compliance with laws, regulations, and industry standards.
 - o Human Resources Risks: Risks related to personnel, staffing, skills, and organizational structure.
 - External Risks: Risks arising from external factors such as market conditions, competitors, and geopolitical
 events
 - Environmental Risks: Risks related to environmental factors, sustainability, and natural disasters.
 - Reputational Risks: Risks related to public perception, brand reputation, and stakeholder trust.
- 2. **Breakdown into Subcategories**: Within each major risk domain, further breakdown the categories into specific subcategories or types of risks. For example:
 - o Technical Risks:
 - Software Risks: Risks related to software vulnerabilities, bugs, and compatibility issues.
 - Hardware Risks: Risks related to hardware failures, malfunctions, and obsolescence.
 - Network Risks: Risks related to network security, data breaches, and connectivity issues.
 - o Operational Risks:
 - Process Risks: Risks related to inefficient processes, lack of standardization, and workflow bottlenecks.
 - Supply Chain Risks: Risks related to disruptions in the supply chain, vendor dependencies, and procurement delays.
 - Performance Risks: Risks related to service levels, performance degradation, and capacity constraints.
 - Financial Risks:
 - Budget Risks: Risks related to budget overruns, cost estimation errors, and unforeseen expenses.
 - Investment Risks: Risks related to investment decisions, financial market volatility, and return on investment
 - Cash Flow Risks: Risks related to cash flow fluctuations, liquidity issues, and debt management.
 - o And so forth for each domain.
- 3. **Customization**: Tailor the risk categories to fit the specific context and characteristics of the project or organization. Consider factors such as industry sector, business objectives, project scope, and stakeholder priorities when defining the categories
- 4. **Documentation**: Document the finalized risk categories in a risk management plan or framework, along with descriptions and examples of each category. Ensure that stakeholders understand the categorization methodology and how it will be applied in identifying, assessing, and managing risks throughout the project or organizational activities.

By defining clear risk categories and organizing potential causes of risk into logical groupings, organizations can effectively identify, analyze, and respond to risks in a structured and systematic manner.

RISK ASSESSMENT MATRIX

	RISK RATING KEY	LOW O ACCEPTABLE OK TO PROCEED	MEDIUM 1 ALARP as low as reasonably practicable TAKE MITIGATION EFFORTS	HIGH 2 GENERALLY UNACCEPTABLE SEEK SUPPORT	EXTREME 3 INTOLERABLE PLACE EVENT ON HOLD
			S E V E		
		ACCEPTABLE	TOLERABLE	UNDESIRABLE	INTOLERABLE
		LITTLE TO NO EFFECT ON EVENT	EFFECTS ARE FELT, BUT NOT CRITICAL TO OUTCOME	SERIOUS IMPACT TO COURSE OF ACTION AND OUTCOME	COULD RESULT IN DISASTER
	IMPROBABLE	LOW	MEDIUM	MEDIUM	HIGH
0 D	RISK IS UNLIKELY TO OCCUR	-1-	- 4 -	-6-	- 10 -
ОН	POSSIBLE	LOW	MEDIUM	HIGH	EXTREME
KELI	RISK WILL LIKELY OCCUR	-2-	- 5 -	-8-	-11-
Ξ	PROBABLE	MEDIUM	HIGH	HIGH	EXTREME
	RISK WILL OCCUR	- 3 -	-7-	-9-	- 12 -

MITIGATION GRADING MATRIX

	RISK MATRIX						
		SECTIONS IMPACTED					
		LOW	MEDIUM	HIGH	EXTREME		
ОО	LOW	N	D	С	Α		
LIKELIHOOD	MEDIUM	D	С	В	Α		
LIKE	HIGH	С	В	Α	Α		

RISK MITIGATION BASED UPON GRADE						
GRADE	POSSIBLE ACTION					
A	As a priority, mitigation actions reducing both likelihood and seriousness are to be identified and implemented at start of project.					
В	Mitigation actions reducing both likelihood and seriousness are to be identified and implemented throughout course of project.					
С	C Mitigation actions reducing both likelihood and seriousness are to be identified and costed for possible action should funds permit execution.					
D	Risk to be noted: No action is required unless grading increases over time.					
N Risk to be noted: No action is required unless grading increases over time.						



Vulnerabilities Total: 1

SEVERITY	CVSS V3.0	VPR SCORE	PLUGIN	NAME
CRITICAL	10.0*	7.4	46882	UnrealIRCd Backdoor Detection

^{*} indicates the v3.0 score was not available; the v2.0 score is shown

0	1	0	0	0
CRITICAL	HIGH	MEDIUM	LOW	INFO

Vulnerabilities Total: 1

SEVERITY	CVSS V3.0	VPR SCORE	PLUGIN	NAME
HIGH	7.5	5.9	90509	Samba Badlock Vulnerability

^{*} indicates the v3.0 score was not available; the v2.0 score is shown





Host Information

Netbios Name: METASPLOITABLE
IP: 192.168.1.101
MAC Address: 08:00:27:24:01:F5

OS: Linux Kernel 2.6 on Ubuntu 8.04 (hardy)

Vulnerabilities

46882 - UnrealIRCd Backdoor Detection

Synopsis

The remote IRC server contains a backdoor.

Description

The remote IRC server is a version of UnrealIRCd with a backdoor that allows an attacker to execute arbitrary code on the affected host.

See Also

https://seclists.org/fulldisclosure/2010/Jun/277

https://seclists.org/fulldisclosure/2010/Jun/284

http://www.unrealircd.com/txt/unrealsecadvisory.20100612.txt

Solution

Re-download the software, verify it using the published MD5 / SHA1 checksums, and re-install it.

Risk Factor

Critical

VPR Score

7.4

CVSS v2.0 Base Score

10.0 (CVSS2#AV:N/AC:L/Au:N/C:C/I:C/A:C)

CVSS v2.0 Temporal Score

8.3 (CVSS2#E:F/RL:OF/RC:C)

References

BID 40820

CVE CVE-2010-2075

Exploitable With

CANVAS (true) Metasploit (true)

Plugin Information

Published: 2010/06/14, Modified: 2022/04/11

Plugin Output

tcp/6667/irc

The remote IRC server is running as : uid=0(root) gid=0(root)

192.168.1.101 5





Host Information

Netbios Name: METASPLOITABLE
IP: 192.168.1.101
MAC Address: 08:00:27:24:01:F5

OS: Linux Kernel 2.6 on Ubuntu 8.04 (hardy)

Vulnerabilities

90509 - Samba Badlock Vulnerability

Synopsis

An SMB server running on the remote host is affected by the Badlock vulnerability.

Description

The version of Samba, a CIFS/SMB server for Linux and Unix, running on the remote host is affected by a flaw, known as Badlock, that exists in the Security Account Manager (SAM) and Local Security Authority (Domain Policy) (LSAD) protocols due to improper authentication level negotiation over Remote Procedure Call (RPC) channels. A man-in-the-middle attacker who is able to able to intercept the traffic between a client and a server hosting a SAM database can exploit this flaw to force a downgrade of the authentication level, which allows the execution of arbitrary Samba network calls in the context of the intercepted user, such as viewing or modifying sensitive security data in the Active Directory (AD) database or disabling critical services.

See Also

http://badlock.org

https://www.samba.org/samba/security/CVE-2016-2118.html

Solution

Upgrade to Samba version 4.2.11 / 4.3.8 / 4.4.2 or later.

Risk Factor

Medium

CVSS v3.0 Base Score

7.5 (CVSS:3.0/AV:N/AC:H/PR:N/UI:R/S:U/C:H/I:H/A:H)

CVSS v3.0 Temporal Score

6.5 (CVSS:3.0/E:U/RL:O/RC:C)

VPR Score

5.9

CVSS v2.0 Base Score

6.8 (CVSS2#AV:N/AC:M/Au:N/C:P/I:P/A:P)

CVSS v2.0 Temporal Score

5.0 (CVSS2#E:U/RL:OF/RC:C)

References

BID 86002

CVE CVE-2016-2118 XREF CERT:813296

Plugin Information

Published: 2016/04/13, Modified: 2019/11/20

Plugin Output

tcp/445/cifs

Nessus detected that the Samba Badlock patch has not been applied.

