



# **Display information about audit policies applied to files and directories**

## **ONTAP 9**

NetApp  
September 12, 2022

# Table of Contents

- Display information about audit policies applied to files and directories ..... 1
  - Display information about audit policies using the Windows Security tab ..... 1
  - Display information about NTFS audit policies on FlexVol volumes using the CLI ..... 2
- Ways to display information about file security and audit policies ..... 6

# Display information about audit policies applied to files and directories

## Display information about audit policies using the Windows Security tab

You can display information about audit policies that have been applied to files and directories by using the Security tab in the Windows Properties window. This is the same method used for data residing on a Windows server, which enables customers to use the same GUI interface that they are accustomed to using.

### About this task

Displaying information about audit policies applied to files and directories enables you to verify that you have the appropriate system access control lists (SACLs) set on specified files and folders.

To display information about SACLs that have been applied to NTFS files and folders, complete the following steps on a Windows host.

### Steps

1. From the **Tools** menu in Windows Explorer, select **Map network drive**.
2. Complete the **Map Network Drive** dialog box:
  - a. Select a **Drive** letter.
  - b. In the **Folder** box, type the IP address or SMB server name of the storage virtual machine (SVM) containing the share that holds both the data you would like to audit and the name of the share.

If your SMB server name is "SMB\_SERVER" and your share is named "share1", you should enter \\SMB\_SERVER\share1.



You can specify the IP address of the data interface for the SMB server instead of the SMB server name.

- c. Click **Finish**.

The drive you selected is mounted and ready with the Windows Explorer window displaying files and folders contained within the share.

3. Select the file or directory for which you display auditing information.
4. Right-click on the file or directory, and select **Properties**.
5. Select the **Security** tab.
6. Click **Advanced**.
7. Select the **Auditing** tab.
8. Click **Continue**.

The Auditing box opens. The **Auditing entries** box displays a summary of users and groups that have SACLs applied to them.

9. In the **Auditing entries** box select the user or group whose SACL entries you want displayed.

10. Click **Edit**.

The Auditing entry for <object> box opens.

11. In the **Access** box, view the current SACLs that are applied to the selected object.

12. Click **Cancel** to close the **Auditing entry for <object>** box.

13. Click **Cancel** to close the **Auditing** box.

## Display information about NTFS audit policies on FlexVol volumes using the CLI

You can display information about NTFS audit policies on FlexVol volumes, including what the security styles and effective security styles are, what permissions are applied, and information about system access control lists. You can use the information to validate your security configuration or to troubleshoot auditing issues.

### About this task

Displaying information about audit policies applied to files and directories enables you to verify that you have the appropriate system access control lists (SACLs) set on specified files and folders.

You must provide the name of the storage virtual machine (SVM) and the path to the files or folders whose audit information you want to display. You can display the output in summary form or as a detailed list.

- NTFS security-style volumes and qtrees use only NTFS system access control lists (SACLs) for audit policies.
- Files and folders in a mixed security-style volume with NTFS effective security can have NTFS audit policies applied to them.

Mixed security-style volumes and qtrees can contain some files and directories that use UNIX file permissions, either mode bits or NFSv4 ACLs, and some files and directories that use NTFS file permissions.

- The top level of a mixed security-style volume can have either UNIX or NTFS effective security and might or might not contain NTFS SACLs.
- Because Storage-Level Access Guard security can be configured on a mixed security-style volume or qtree even if the effective security style of the volume root or qtree is UNIX, the output for a volume or qtree path where Storage-Level Access Guard is configured might display both regular file and folder NFSv4 SACLs and Storage-Level Access Guard NTFS SACLs.
- If the path that is entered in the command is to data with NTFS effective security, the output also displays information about Dynamic Access Control ACEs if Dynamic Access Control is configured for the given file or directory path.
- When displaying security information about files and folders with NTFS effective security, UNIX-related output fields contain display-only UNIX file permission information.

NTFS security-style files and folders use only NTFS file permissions and Windows users and groups when determining file access rights.

- ACL output is displayed only for files and folders with NTFS or NFSv4 security.

This field is empty for files and folders using UNIX security that have only mode bit permissions applied (no NFSv4 ACLs).

- The owner and group output fields in the ACL output apply only in the case of NTFS security descriptors.

### Step

1. Display file and directory audit policy settings with the desired level of detail:

If you want to display information...	Enter the following command...
In summary form	<code>vserver security file-directory show -vserver vserver_name -path path</code>
As a detailed list	<code>vserver security file-directory show -vserver vserver_name -path path -expand-mask true</code>

### Examples

The following example displays the audit policy information for the path `/corp` in SVM vs1. The path has NTFS effective security. The NTFS security descriptor contains both a SUCCESS and a SUCCESS/FAIL SACL entry.

```

cluster::> vserver security file-directory show -vserver vs1 -path /corp
      Vserver: vs1
      File Path: /corp
      File Inode Number: 357
      Security Style: ntfs
      Effective Style: ntfs
      DOS Attributes: 10
      DOS Attributes in Text: ----D---
      Expanded Dos Attributes: -
      Unix User Id: 0
      Unix Group Id: 0
      Unix Mode Bits: 777
      Unix Mode Bits in Text: rwxrwxrwx
      ACLs: NTFS Security Descriptor
            Control:0x8014
            Owner:DOMAIN\Administrator
            Group:BUILTIN\Administrators
            SACL - ACEs
                  ALL-DOMAIN\Administrator-0x100081-OI|CI|SA|FA
                  SUCCESSFUL-DOMAIN\user1-0x100116-OI|CI|SA
            DACL - ACEs
                  ALLOW-BUILTIN\Administrators-0x1f01ff-OI|CI
                  ALLOW-BUILTIN\Users-0x1f01ff-OI|CI
                  ALLOW-CREATOR OWNER-0x1f01ff-OI|CI
                  ALLOW-NT AUTHORITY\SYSTEM-0x1f01ff-OI|CI

```

The following example displays the audit policy information for the path /datavol1 in SVM vs1. The path contains both regular file and folder SACLs and Storage-Level Access Guard SACLs.

```
cluster::> vserver security file-directory show -vserver vs1 -path
/datavol1
```

```

    Vserver: vs1
    File Path: /datavol1
    File Inode Number: 77
    Security Style: ntfs
    Effective Style: ntfs
    DOS Attributes: 10
    DOS Attributes in Text: ----D---
    Expanded Dos Attributes: -
        Unix User Id: 0
        Unix Group Id: 0
        Unix Mode Bits: 777
    Unix Mode Bits in Text: rwxrwxrwx
        ACLs: NTFS Security Descriptor
            Control:0xaa14
            Owner: BUILTIN\Administrators
            Group: BUILTIN\Administrators
            SACL - ACEs
                AUDIT-EXAMPLE\marketing-0xf01ff-OI|CI|FA
            DACL - ACEs
                ALLOW-EXAMPLE\Domain Admins-0x1f01ff-OI|CI
                ALLOW-EXAMPLE\marketing-0x1200a9-OI|CI

    Storage-Level Access Guard security
    SACL (Applies to Directories):
        AUDIT-EXAMPLE\Domain Users-0x120089-FA
        AUDIT-EXAMPLE\engineering-0x1f01ff-SA
    DACL (Applies to Directories):
        ALLOW-EXAMPLE\Domain Users-0x120089
        ALLOW-EXAMPLE\engineering-0x1f01ff
        ALLOW-NT AUTHORITY\SYSTEM-0x1f01ff
    SACL (Applies to Files):
        AUDIT-EXAMPLE\Domain Users-0x120089-FA
        AUDIT-EXAMPLE\engineering-0x1f01ff-SA
    DACL (Applies to Files):
        ALLOW-EXAMPLE\Domain Users-0x120089
        ALLOW-EXAMPLE\engineering-0x1f01ff
        ALLOW-NT AUTHORITY\SYSTEM-0x1f01ff
```

# Ways to display information about file security and audit policies

You can use the wildcard character (\*) to display information about file security and audit policies of all files and directories under a given path or a root volume.

The wildcard character (\*) can be used as the last subcomponent of a given directory path below which you want to display information of all files and directories.

If you want to display information of a particular file or directory named as "\*", then you need to provide the complete path inside double quotes (" ").

## Example

The following command with the wildcard character displays the information about all files and directories below the path /1/ of SVM vs1:



```

cluster::> vserver security file-directory show -vserver vs1 -path /1/*

      Vserver: vs1
      File Path: /1/1
      Security Style: mixed
      Effective Style: ntfs
      DOS Attributes: 10
      DOS Attributes in Text: ----D---
      Expanded Dos Attributes: -
      Unix User Id: 0
      Unix Group Id: 0
      Unix Mode Bits: 777
      Unix Mode Bits in Text: rwxrwxrwx
      ACLs: NTFS Security Descriptor
            Control:0x8514
            Owner:BUILTIN\Administrators
            Group:BUILTIN\Administrators
            DACL - ACEs
            ALLOW-Everyone-0x1f01ff-OI|CI (Inherited)

      Vserver: vs1
      File Path: /1/1/abc
      Security Style: mixed
      Effective Style: ntfs
      DOS Attributes: 10
      DOS Attributes in Text: ----D---
      Expanded Dos Attributes: -
      Unix User Id: 0
      Unix Group Id: 0
      Unix Mode Bits: 777
      Unix Mode Bits in Text: rwxrwxrwx
      ACLs: NTFS Security Descriptor
            Control:0x8404
            Owner:BUILTIN\Administrators
            Group:BUILTIN\Administrators
            DACL - ACEs
            ALLOW-Everyone-0x1f01ff-OI|CI (Inherited)

```

The following command displays the information of a file named as "\*" under the path /vol1/a of SVM vs1. The path is enclosed within double quotes (" ").

```
cluster::> vserver security file-directory show -vserver vs1 -path  
"/vol1/a/*"
```

```
      Vserver: vs1  
      File Path: "/vol1/a/*"  
      Security Style: mixed  
      Effective Style: unix  
      DOS Attributes: 10  
      DOS Attributes in Text: ----D---  
Expanded Dos Attributes: -  
      Unix User Id: 1002  
      Unix Group Id: 65533  
      Unix Mode Bits: 755  
      Unix Mode Bits in Text: rwxr-xr-x  
      ACLs: NFSV4 Security Descriptor  
      Control:0x8014  
      SACL - ACEs  
      AUDIT-EVERYONE@-0x1f01bf-FI|DI|SA|FA  
      DACL - ACEs  
      ALLOW-EVERYONE@-0x1f00a9-FI|DI  
      ALLOW-OWNER@-0x1f01ff-FI|DI  
      ALLOW-GROUP@-0x1200a9-IG
```

## Copyright Information

Copyright © 2022 NetApp, Inc. All rights reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means-graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system- without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.277-7103 (October 1988) and FAR 52-227-19 (June 1987).

## Trademark Information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.