Configure SnapLock

ONTAP 9

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Configure SnapLock

Learn about configuring ONTAP SnapLock

Before you use SnapLock, you need to configure SnapLock by completing various tasks such as install the SnapLock license for each node that hosts an aggregate with a SnapLock volume, initialize the Compliance Clock, create a SnapLock aggregate for clusters running ONTAP releases earlier than ONTAP 9.10.1, create and mount a SnapLock volume, and more.

Initialize the ONTAP Compliance Clock

SnapLock uses the *volume Compliance Clock* to ensure against tampering that might alter the retention period for WORM files. You must first initialize the *system ComplianceClock* on each node that hosts a SnapLock aggregate.

Beginning with ONTAP 9.14.1, you can initialize or reinitialize the system Compliance Clock when there are no SnapLock volumes or no volumes with snapshot locking enabled. The ability to reinitialize enables system administrators to reset the system Compliance Clock in instances where it might have been incorrectly initialized or to correct clock drift on the system. In ONTAP 9.13.1 and earlier releases, once you initialize the Compliance Clock on a node, you cannot initialize it again.

Before you begin

To reinitialize the Compliance Clock:

- All nodes in the cluster must be in the healthy state.
- All volumes must be online.
- No volumes can be present the the recovery queue.
- No SnapLock volumes can be present.
- No volumes with snapshot locking enabled can be present.

General requirements for initializing the Compliance Clock:

- You must be a cluster administrator to perform this task.
- The SnapLock license must be installed on the node.

About this task

The time on the system Compliance Clock is inherited by the *volume Compliance Clock*, the latter of which controls the retention period for WORM files on the volume. The volume Compliance Clock is initialized automatically when you create a new SnapLock volume.

> The initial setting of the system Compliance Clock is based on the current hardware system clock. For that reason, you should verify that the system time and time zone are correct before initializing the system Compliance Clock on each node. Once you initialize the system Compliance Clock on a node, you cannot initialize it again when SnapLock volumes or volumes with locking enabled are present.

Steps

You can use the ONTAP CLI to initialize the Compliance Clock or, beginning with ONTAP 9.12.1, you can use System Manager to initialize the Compliance Clock.

System Manager

1. Navigate to **Cluster > Overview**.
2. In the **Nodes** section, click **Initialize SnapLock Compliance Clock**.
3. To display the **Compliance Clock** column and to verify that the Compliance Clock is initialized, in the **Cluster > Overview > Nodes** section, click **Show/Hide** and select **SnapLock Compliance Clock**.

CLI

1. Initialize the system Compliance Clock:

   `snaplock compliance-clock initialize -node` *`node_name`*

   The following command initializes the system Compliance Clock on `node1`:

   ```
   cluster1::> snaplock compliance-clock initialize -node node1
   ```

   Learn more about `snaplock compliance-clock initialize` in the ONTAP command reference.

2. When prompted, confirm that the system clock is correct and that you want to initialize the Compliance Clock:

   ```
   Warning: You are about to initialize the secure ComplianceClock of
   the node "node1" to the current value of the node's system clock.
   This procedure can be performed only once on a given node, so you
   should ensure that the system time is set correctly before
   proceeding.

   The current node's system clock is: Mon Apr 25 06:04:10 GMT 2016

   Do you want to continue? (y|n): y
   ```

3. Repeat this procedure for each node that hosts a SnapLock aggregate.

Enable Compliance Clock resynchronization for an NTP-configured system

You can enable the SnapLock Compliance Clock synchronization feature when an NTP server is configured.

Before you begin

- This feature is available only at the advanced privilege level.
- You must be a cluster administrator to perform this task.
- The SnapLock license must be installed on the node.

- This feature is available only for Cloud Volumes ONTAP, ONTAP Select, and VSIM platforms.

About this task

When the SnapLock secure clock daemon detects a skew beyond the threshold, ONTAP uses the system time to reset both the system and volume Compliance Clocks. A period of 24 hours is set as the skew threshold. This means that the system Compliance Clock is synchronized to the system clock only if the skew is more than a day old.

The SnapLock secure clock daemon detects a skew and changes the Compliance Clock to the system time. Any attempt at modifying the system time to force the Compliance Clock to synchronize to the system time fails, since the Compliance Clock synchronizes to the system time only if the system time is synchronized with the NTP time.

Steps

1. Enable the SnapLock Compliance Clock synchronization feature when an NTP server is configured:

   `snaplock compliance-clock ntp`

   The following command enables the system Compliance Clock synchronization feature:

   ```
   cluster1::*> snaplock compliance-clock ntp modify -is-sync-enabled true
   ```

   Learn more about `snaplock compliance-clock ntp modify` in the ONTAP command reference.

2. When prompted, confirm that the configured NTP servers are trusted and that the communications channel is secure to enable the feature:
3. Check that the feature is enabled:

   `snaplock compliance-clock ntp show`

   The following command checks that the system Compliance Clock synchronization feature is enabled:

   ```
   cluster1::*> snaplock compliance-clock ntp show

   Enable clock sync to NTP system time: true
   ```

   Learn more about `snaplock compliance-clock ntp show` in the ONTAP command reference.

Create an ONTAP SnapLock aggregate

You use the volume `-snaplock-type` option to specify a Compliance or Enterprise SnapLock volume type. For releases earlier than ONTAP 9.10.1, you must create a separate SnapLock aggregate. Beginning with ONTAP 9.10.1, SnapLock and non-SnapLock volumes can exist on the same aggregate; therefore, you are no longer required to create a separate SnapLock aggregate if you are using ONTAP 9.10.1.

Before you begin

- You must be a cluster administrator to perform this task.
- The SnapLock license must be installed on the node. This license in included in ONTAP One.
- The Compliance Clock on the node must be initialized.
- If you have partitioned the disks as “root”, “data1”, and “data2”, you must ensure that spare disks are available.

Upgrade considerations

When upgrading to ONTAP 9.10.1, existing SnapLock and non-SnapLock aggregates are upgraded to support the existence of both SnapLock and non-SnapLock volumes; however, the existing SnapLock volume attributes are not automatically updated. For example, data-compaction, cross-volume-dedupe, and cross-volume-background-dedupe fields remain unchanged. New SnapLock volumes created on existing aggregates have the same default values as non-SnapLock volumes, and the default values for new volumes and aggregates are platform dependent.

Revert considerations

If you need to revert to an ONTAP version earlier than 9.10.1, you must move all SnapLock Compliance, SnapLock Enterprise, and SnapLock volumes to their own SnapLock aggregates.

About this task

- You cannot create Compliance aggregates with the SyncMirror option.
- You can create mirrored Compliance aggregates in a MetroCluster configuration only if the aggregate is used to host SnapLock audit log volumes.

> In a MetroCluster configuration, SnapLock Enterprise is supported on mirrored and unmirrored aggregates. SnapLock Compliance is supported only on unmirrored aggregates.

Steps

1. Create a SnapLock aggregate:

```
storage aggregate create -aggregate <aggregate_name> -node <node_name>
-diskcount <number_of_disks> -snaplock-type <compliance|enterprise>
```

The following command creates a SnapLock `Compliance` aggregate named `aggr1` with three disks on `node1`:

```
cluster1::> storage aggregate create -aggregate aggr1 -node node1
-diskcount 3 -snaplock-type compliance
```

Learn more about `storage aggregate create` in the ONTAP command reference.

Create and mount ONTAP SnapLock volumes

You must create a SnapLock volume for the files or snapshots that you want to commit to the WORM state. Beginning with ONTAP 9.10.1, any volume you create, regardless of the aggregate type, is created by default as a non-SnapLock volume. You must use the

`-snaplock-type` option to explicitly create a SnapLock volume by specifying either Compliance or Enterprise as the SnapLock type. By default, the SnapLock type is set to `non-snaplock`.

Before you begin

- The SnapLock aggregate must be online.
- You should verify that a SnapLock license is installed. If a SnapLock license is not installed on the node, you must install it. This license is included with ONTAP One. Prior to ONTAP One, the SnapLock license was included in the Security and Compliance bundle. The Security and Compliance bundle is no longer offered but is still valid. Although not currently required, existing customers can choose to upgrade to ONTAP One.
- The Compliance Clock on the node must be initialized.

About this task

With the proper SnapLock permissions, you can destroy or rename an Enterprise volume at any time. You cannot destroy a Compliance volume until the retention period has elapsed. You can never rename a Compliance volume.

You can clone SnapLock volumes, but you cannot clone files on a SnapLock volume. The clone volume will be of the same SnapLock type as the parent volume.

> LUNs are not supported in SnapLock volumes. LUNs are supported in SnapLock volumes only in scenarios where snapshots created on a non-SnapLock volume are transferred to a SnapLock volume for protection as part of SnapLock vault relationship. LUNs are not supported in read/write SnapLock volumes. Tamperproof snapshots however are supported on both SnapMirror source volumes and destination volumes that contain LUNs.

Perform this task using ONTAP System Manager or the ONTAP CLI.

System Manager

Beginning with ONTAP 9.12.1, you can use System Manager to create a SnapLock volume.

Steps

1. Navigate to **Storage > Volumes** and click **Add**.
2. In the **Add Volume** window, click **More Options**.
3. Enter the new volume information, including the name and size of the volume.
4. Select **Enable SnapLock** and choose the SnapLock type, either Compliance or Enterprise.
5. In the **Auto-Commit Files** section, select **Modified** and enter the amount of time a file should remain unchanged before it is automatically committed. The minimum value is 5 minutes and the maximum value is 10 years.
6. In the **Data Retention** section, select the minimum and maximum retention period.
7. Select the default retention period.
8. Click **Save**.
9. Select the new volume in the **Volumes** page to verify the SnapLock settings.

CLI

1. Create a SnapLock volume:

```
volume create -vserver <SVM_name> -volume <volume_name> -aggregate
<aggregate_name> -snaplock-type <compliance|enterprise>
```

Learn more about `volume create` in the ONTAP command reference. The following options are not available for SnapLock volumes: `-nvfail`, `-atime-update`, `-is-autobalance-eligible`, `-space-mgmt-try-first`, and `vmalign`.

The following command creates a SnapLock `Compliance` volume named `vol1` on `aggr1` on `vs1`:

```
cluster1::> volume create -vserver vs1 -volume vol1 -aggregate aggr1
-snaplock-type compliance
```

Mount a SnapLock volume

You can mount a SnapLock volume to a junction path in the SVM namespace for NAS client access.

Before you begin

The SnapLock volume must be online.

About this task

- You can mount a SnapLock volume only under the root of the SVM.
- You cannot mount a regular volume under a SnapLock volume.

Steps

1. Mount a SnapLock volume:

   `volume mount -vserver SVM_name -volume volume_name -junction-path path`

   Learn more about `volume mount` in the ONTAP command reference.

   The following command mounts a SnapLock volume named `vol1` to the junction path `/sales` in the `vs1` namespace:

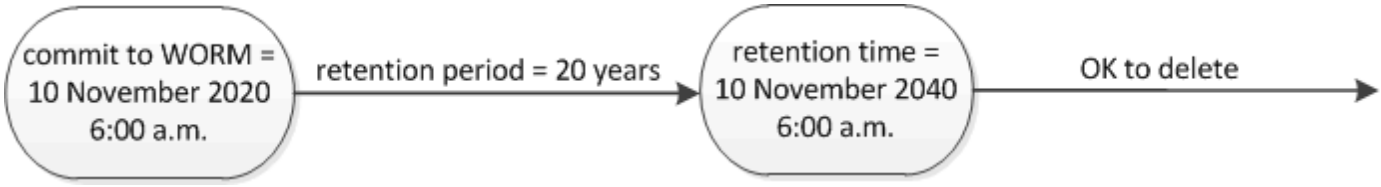
   ```
   cluster1::> volume mount -vserver vs1 -volume vol1 -junction-path /sales
   ```

Set the ONTAP SnapLock retention time

You can set the retention time for a file explicitly, or you can use the default retention period for the volume to derive the retention time. Unless you set the retention time explicitly, SnapLock uses the default retention period to calculate the retention time. You can also set file retention after an event.

About retention period and retention time

The *retention period* for a WORM file specifies the length of time the file must be retained after it is committed to the WORM state. The *retention time* for a WORM file is the time after which the file no longer needs to be retained. A retention period of 20 years for a file committed to the WORM state on 10 November 2020 6:00 a.m., for example, would yield a retention time of 10 November 2040 6:00 a.m.



Beginning with ONTAP 9.10.1, you can set a retention time up to October 26, 3058 and a retention period up to 100 years. When you extend retention dates, older policies are converted automatically. In ONTAP 9.9.1 and earlier releases, unless you set the default retention period to infinite, the maximum supported retention time is January 19 2071 (GMT).

Important replication considerations

When establishing a SnapMirror relationship with a SnapLock source volume using a retention date later than January 19th 2071 (GMT), the destination cluster must be running ONTAP 9.10.1 or later or the SnapMirror transfer will fail.

Important revert considerations

ONTAP prevents you from reverting a cluster from ONTAP 9.10.1 to an earlier ONTAP version when there are any files with a retention period later than "January 19, 2071 8:44:07 AM".

Understanding the retention periods

A SnapLock Compliance or Enterprise volume has four retention periods:

- Minimum retention period (`min`), with a default of 0

- Maximum retention period (`max`), with a default of 30 years
- Default retention period, with a default equal to `min` for both Compliance mode and Enterprise mode beginning with ONTAP 9.10.1. In ONTAP releases earlier than ONTAP 9.10.1, the default retention period depends on the mode:
  - For Compliance mode, the default is equal to `max`.
  - For Enterprise mode, the default is equal to `min`.
- Unspecified retention period.

> In releases prior to ONTAP 9.10.1, if you do not set the retention time explicitly before committing a Compliance-mode file to the WORM state, and you do not modify the defaults, the file will be retained for 30-years. This change *cannot* be undone. Similarly, in ONTAP 9.10.1 and later, if you do not set the retention time explicitly before committing an Enterprise-mode file to the WORM state, and you do not modify the defaults, the file will be retained for 0 years, or, effectively, not at all.

Beginning with ONTAP 9.8, you can set the retention period on files in a volume to `unspecified`, to enable the file to be retained until you set an absolute retention time. You can set a file with absolute retention time to unspecified retention and back to absolute retention as long as the new absolute retention time is later than the absolute time you previously set.

Beginning with ONTAP 9.12.1, WORM files with the retention period set to `unspecified` are guaranteed to have a retention period set to the minimum retention period configured for the SnapLock volume. When you change the file retention period from `unspecified` to an absolute retention time, the new retention time specified must be greater than the minimum retention time already set on the file.

Set the default retention period

You can use the `volume snaplock modify` command to set the default retention period for files on a SnapLock volume.

Before you begin

The SnapLock volume must be online.

About this task

The following table shows the possible values for the default retention period option:

> The default retention period must be greater than or equal to (>=) the minimum retention period and less than or equal to (<=) the maximum retention period.

Value	Unit	Notes
0 - 65535	seconds	
0 - 24	hours	
0 - 365	days	

Value	Unit	Notes
0 - 12	months	
0 - 100	years	Beginning with ONTAP 9.10.1. For earlier ONTAP releases, the value is 0 - 70.
max	-	Use the maximum retention period.
min	-	Use the minimum retention period.
infinite	-	Retain the files forever.
unspecified	-	Retain the files until an absolute retention period is set.

The values and ranges for the maximum and minimum retention periods are identical, except for `max` and `min`, which are not applicable. For more information about this task, see Set the retention time overview.

You can use the `volume snaplock show` command to view the retention period settings for the volume. Learn more about `volume snaplock show` in the ONTAP command reference.

After a file has been committed to the WORM state, you can extend but not shorten the retention period.

Steps

1. Set the default retention period for files on a SnapLock volume:

   `volume snaplock modify -vserver` *`SVM_name`* `-volume` *`volume_name`* `-default -retention-period` *`default_retention_period`* `-minimum-retention-period` *`min_retention_period`* `-maximum-retention-period` *`max_retention_period`*

   Learn more about `volume snaplock modify` in the ONTAP command reference.

   The following examples assume that the minimum and maximum retention periods have not been modified previously.

   The following command sets the default retention period for a Compliance or Enterprise volume to 20 days:

   ```
   cluster1::> volume snaplock modify -vserver vs1 -volume vol1 -default
   -retention-period 20days
   ```

   The following command sets the default retention period for a Compliance volume to 70 years:

```
cluster1::> volume snaplock modify -vserver vs1 -volume vol1 -maximum
-retention-period 70years
```

The following command sets the default retention period for an Enterprise volume to 10 years:

```
cluster1::> volume snaplock modify -vserver vs1 -volume vol1 -default
-retention-period max -maximum-retention-period 10years
```

The following commands set the default retention period for an Enterprise volume to 10 days:

```
cluster1::> volume snaplock modify -vserver vs1 -volume vol1 -minimum
-retention-period 10days
cluster1::> volume snaplock modify -vserver vs1 -volume vol1 -default
-retention-period min
```

The following command sets the default retention period for a Compliance volume to infinite:

```
cluster1::> volume snaplock modify -vserver vs1 -volume vol1 -default
-retention-period infinite -maximum-retention-period infinite
```

Set the retention time for a file explicitly

You can set the retention time for a file explicitly by modifying its last access time. You can use any suitable command or program over NFS or CIFS to modify the last access time.

About this task

After a file has been committed to WORM, you can extend but not shorten the retention time. The retention time is stored in the `atime` field for the file.

> You cannot explicitly set the retention time of a file to `infinite`. That value is only available when you use the default retention period to calculate the retention time.

Steps

1. Use a suitable command or program to modify the last access time for the file whose retention time you want to set.

   In a UNIX shell, use the following command to set a retention time of 21 November 2020 6:00 a.m. on a file named `document.txt`:

   ```
   touch -a -t 202011210600 document.txt
   ```

   > You can use any suitable command or program to modify the last access time in Windows.

Set the file retention period after an event

Beginning with ONTAP 9.3, you can define how long a file is retained after an event occurs by using the SnapLock *Event Based Retention (EBR)* feature.

Before you begin

- You must be a SnapLock administrator to perform this task.

  Create a SnapLock administrator account

- You must have logged in on a secure connection (SSH, console, or ZAPI).

About this task

The *event retention policy* defines the retention period for the file after the event occurs. The policy can be applied to a single file or all the files in a directory.

- If a file is not a WORM file, it will be committed to the WORM state for the retention period defined in the policy.
- If a file is a WORM file or a WORM appendable file, its retention period will be extended by the retention period defined in the policy.

You can use a Compliance-mode or Enterprise-mode volume.

EBR policies cannot be applied to files under a Legal Hold.

For advanced usage, see Compliant WORM Storage Using NetApp SnapLock.

Using EBR to extend the retention period of already existing WORM files
EBR is convenient when you want to extend the retention period of already existing WORM files. For example, it might be your firm's policy to retain employee W-4 records in unmodified form for three years after the employee changes a withholding election. Another company policy might require that W-4 records be retained for five years after the employee is terminated. In this situation, you could create an EBR policy with a five-year retention period. After the employee is terminated (the "event"), you would apply the EBR policy to the employee's W-4 record, causing its retention period to be extended. That will usually be easier than extending the retention period manually, particularly when a large number of files is involved.

Steps

1. Create an EBR policy:

   `snaplock event-retention policy create -vserver` *`SVM_name`* `-name` *`policy_name`* `-retention-period` *`retention_period`*

   The following command creates the EBR policy `employee_exit` on `vs1` with a retention period of ten years:

   ```
   cluster1::>snaplock event-retention policy create -vserver vs1 -name
   employee_exit -retention-period 10years
   ```

2. Apply an EBR policy:

   `snaplock event-retention apply -vserver` *`SVM_name`* `-name` *`policy_name`* `-volume` *`volume_name`* `-path` *`path_name`*

   The following command applies the EBR policy `employee_exit` on `vs1` to all the files in the directory `d1`:

   ```
   cluster1::>snaplock event-retention apply -vserver vs1 -name
   employee_exit -volume vol1 -path /d1
   ```

Related information

- snaplock event-retention policy create
- snaplock event-retention apply

Create an ONTAP SnapLock-protected audit log

If you are using ONTAP 9.9.1 or earlier, you must first create a SnapLock aggregate and then you must create a SnapLock-protected audit log before performing a privileged delete or SnapLock volume move. The audit log records the creation and deletion of SnapLock administrator accounts, modifications to the log volume, whether privileged delete is enabled, privileged delete operations, and SnapLock volume move operations.

Beginning with ONTAP 9.10.1, you no longer create a SnapLock aggregate. You must use the -snaplock-type option to explicitly create a SnapLock volume by specifying either Compliance or Enterprise as the SnapLock type.

Before you begin

If you are using ONTAP 9.9.1 or earlier, you must be a cluster administrator to create a SnapLock aggregate.

About this task

You cannot delete an audit log until the log file retention period has elapsed. You cannot modify an audit log even after the retention period has elapsed. This is true for both SnapLock Compliance and Enterprise modes.

> In ONTAP 9.4 and earlier, you cannot use a SnapLock Enterprise volume for audit logging. You must use a SnapLock Compliance volume. In ONTAP 9.5 and later, you can use either a SnapLock Enterprise volume or a SnapLock Compliance volume for audit logging. In all cases, the audit log volume must be mounted at the junction path `/snaplock_audit_log`. No other volume can use this junction path.

You can find the SnapLock audit logs in the `/snaplock_log` directory under the root of the audit log volume, in subdirectories named `privdel_log` (privileged delete operations) and `system_log` (everything else). Audit log file names contain the timestamp of the first logged operation, making it easy to search for records by the approximate time that operations were executed.

- You can use the `snaplock log file show` command to view the log files on the audit log volume.
- You can use the `snaplock log file archive` command to archive the current log file and create a new one, which is useful in cases where you need to record audit log information in a separate file.

Learn more about `snaplock log file show` and `snaplock log file archive` in the ONTAP command reference.

> A data protection volume cannot be used as a SnapLock audit log volume.

Steps

1. Create a SnapLock aggregate.

   Create a SnapLock aggregate

2. On the SVM that you want to configure for audit logging, create a SnapLock volume.

   Create a SnapLock volume

3. Configure the SVM for audit logging:

   `snaplock log create -vserver` *`SVM_name`* `-volume` *`snaplock_volume_name`* `-max-log -size` *`size`* `-retention-period` *`default_retention_period`*

   > The minimum default retention period for audit log files is six months. If the retention period of an affected file is longer than the retention period of the audit log, the retention period of the log inherits the retention period of the file. So, if the retention period for a file deleted using privileged delete is 10 months, and the retention period of the audit log is 8 months, the retention period of the log is extended to 10 months. For more information about retention time and default retention period, see Set the retention time.

   The following command configures `SVM1` for audit logging using the SnapLock volume `logVol`. The audit log has a maximum size of 20 GB and is retained for eight months.

   ```
   SVM1::> snaplock log create -vserver SVM1 -volume logVol -max-log-size
   20GB -retention-period 8months
   ```

   Learn more about `snaplock log create` in the ONTAP command reference.

4. On the SVM that you configured for audit logging, mount the SnapLock volume at the junction path `/snaplock_audit_log`.

   Mount a SnapLock volume

Verify ONTAP SnapLock settings

You can use the `volume file fingerprint start` and `volume file fingerprint dump` commands to view key information about files and volumes, including the file type (regular, WORM, or WORM appendable), the volume expiration date, and so forth.

Steps

1. Generate a file fingerprint:

```
volume file fingerprint start -vserver <SVM_name> -file <file_path>
```

```
svm1::> volume file fingerprint start -vserver svm1 -file
/vol/sle/vol/f1
File fingerprint operation is queued. Run "volume file fingerprint show
-session-id 16842791" to view the fingerprint session status.
```

The command generates a session ID that you can use as input to the `volume file fingerprint dump` command.

> You can use the `volume file fingerprint show` command with the session ID to monitor the progress of the fingerprint operation. Make sure that the operation has completed before attempting to display the fingerprint.

2. Display the fingerprint for the file:

```
volume file fingerprint dump -session-id <session_ID>
```

```
svm1::> volume file fingerprint dump -session-id 33619976
        Vserver:svm1
        Session-ID:33619976
        Volume:slc_vol
        Path:/vol/slc_vol/f1
        Data
Fingerprint:MOFJVevxNSJm3C/4Bn5oEEYH51CrudOzZYK4r5Cfy1g=Metadata

Fingerprint:8iMjqJXiNcqgXT5XuRhLiEwIrJEihDmwS0hrexnjgmc=Fingerprint
Algorithm:SHA256
        Fingerprint Scope:data-and-metadata
        Fingerprint Start Time:1460612586
        Formatted Fingerprint Start Time:Thu Apr 14 05:43:06 GMT 2016
        Fingerprint Version:3
        **SnapLock License:available**
        Vserver UUID:acf7ae64-00d6-11e6-a027-0050569c55ae
        Volume MSID:2152884007
        Volume DSID:1028
        Hostname:my_host
        Filer ID:5f18eda2-00b0-11e6-914e-6fb45e537b8d
        Volume Containing Aggregate:slc_aggr1
        Aggregate ID:c84634aa-c757-4b98-8f07-eefe32565f67
        **SnapLock System ComplianceClock:1460610635
        Formatted SnapLock System ComplianceClock:Thu Apr 14 05:10:35
GMT 2016
        Volume SnapLock Type:compliance
        Volume ComplianceClock:1460610635
        Formatted Volume ComplianceClock:Thu Apr 14 05:10:35 GMT 2016
```

```
Volume Expiry Date:1465880998**
 Is Volume Expiry Date Wraparound:false
Formatted Volume Expiry Date:Tue Jun 14 05:09:58 GMT 2016
Filesystem ID:1028
File ID:96
File Type:worm
File Size:1048576
Creation Time:1460612515
Formatted Creation Time:Thu Apr 14 05:41:55 GMT 2016
Modification Time:1460612515
Formatted Modification Time:Thu Apr 14 05:41:55 GMT 2016
Changed Time:1460610598
Is Changed Time Wraparound:false
Formatted Changed Time:Thu Apr 14 05:09:58 GMT 2016
Retention Time:1465880998
Is Retention Time Wraparound:false
Formatted Retention Time:Tue Jun 14 05:09:58 GMT 2016
Access Time:-
Formatted Access Time:-
Owner ID:0
Group ID:0
Owner SID:-
Fingerprint End Time:1460612586
Formatted Fingerprint End Time:Thu Apr 14 05:43:06 GMT 2016
```

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