



## **save ...**

### SANtricity commands

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# save ...

## Save drive log

The `save allDrives logFile` command saves the drive logs to a file.

### Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

### Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

### Context

Drive log data is maintained by the storage array for each drive.




Do not run this command unless you are instructed to do so by technical support.

### Syntax

```
save allDrives logFile="filename"
```

### Parameter

Parameter	Description
logFile	<p>The file path and the file name to which you want to save the drive logs. Enclose the file name in double quotation marks (" "). For example:</p> <pre>file="C:\Program Files\CLI\logs\drive01.zip"</pre> <div><p>This command does not automatically append a file extension to the saved file. You must specify the .zip file extension when entering the file name.</p></div>

### Minimum firmware level

6.10

# Save tray log

The `save allTrays logFile` command saves the log sense data to a file.

## Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

## Context

Log sense data is maintained by the environmental cards for each tray. Not all of the environmental cards contain log sense data.

## Syntax

```
save allTrays logFile="filename"
```

## Parameter

Parameter	Description
<b>logFile</b>	<p>The file path and the file name to which you want to save the log sense data. Enclose the file name in double quotation marks (" "). For example:</p> <pre>file="C:\Program Files\CLI\logs\traylogdat.txt"</pre> <p>This command does not automatically append a file extension to the saved file. You must specify a file extension when entering the file name.</p>

## Minimum firmware level

6.50

# Save audit log records

The `save auditLog` command retrieves the audit log records.

## Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.



## Roles


To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

## Syntax

```
save auditLog (all | (beginDate=date | endDate=date)
| (beginRecord=timestamp | endRecord=timestamp)) file="filename"
```

## Parameters

Parameter	Description
all	Allows you to retrieve all audit log records.
beginDate	<p>Allows you to specify the beginning date to retrieve. The format for entering the date is MM:DD:YY in the client time zone. The first audit log record retrieved will be the first record that was posted on or after the specified date.</p> <div> The midnight-to-midnight range is based on the client's time zone.</div>
endDate	<p>Allows you to specify the ending date to retrieve. If not specified, then the last record in the log will be retrieved. The format for entering the date is MM:DD:YY in the client time zone. The last audit log record retrieved will be the last record that was posted on or before the specified date.</p> <div> The midnight-to-midnight range is based on the client's time zone.</div>
beginRecord	Allows you to specify the beginning record to retrieve. The value is the integral value that represents the time stamp of the first audit log record, inclusive. If not specified, the first record in the log will be retrieved.

Parameter	Description
endRecord	Allows you to specify the ending record to retrieve. The value is the integral value that represents the time stamp of the last audit log record, inclusive. If not specified, then the last record in the log will be retrieved.
file	<div> <div>  </div> <div> The audit log records are saved in the file in descending order, from newest to oldest. </div> </div>

## Examples

```
SMcli -n Array1 -c "save auditLog all file="myAuditLog.txt";"

SMcli -n Array1 -c "save auditLog endRecord=1493070393313
file="myAuditLog.txt";"

SMcli -n Array1 -c "save auditLog beginDate=12:12:16 endDate=04:01:17
file="myAuditLog.txt";"

SMcli completed successfully.
```

## Minimum firmware level

8.40

## Generate web server Certificate Signing Request (CSR)

The `save controller arrayManagementCSR` command generates a Certificate Signing Request (CSR) for the controller.

## Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

## Context

The CSR must be signed by a Certificate Authority (CA). The resulting signed certificate is installed on the controller's web server so that browsers can automatically trust the controller's web server when trying to manage the array. Perform this action for each controller.

## Syntax

```
save controller [(a|b)] arrayManagementCSR
  commonName="ipOrDnsName"
  [alternateIPAddresses=(ipvX1...ipvXN)]
  [alternateDnsNames=("dnsName1"... "dnsNameN")]
  organization="organizationName"
  [organizationalUnit="organizationalUnitName"]
  locality="cityOrLocality"
  [stateProvince="stateOrRegion"]
  country="string"
  file="filename"
```

## Parameters

Parameter	Description
controller	Allows you to specify the controller on which you want to create the CSR for. Valid controller identifiers are a or b, where a is the controller in slot A, and b is the controller in slot B. Enclose the controller identifier in square brackets ([ ]).
commonName	Allows you to specify the IP address or DNS name of the controller. This must match exactly what will be typed in the browser to access System Manager (do not include http:// nor https://) or there will be a name mismatch error.
alternateIPAddresses	Allows you to specify additional IP addresses or aliases for the controller. Enclose all the IP addresses in parentheses. If you enter more than one IP address, separate them with a space.
alternateDnsNames	Allows you to specify additional DNS names for the controller. Enclose all the DNS names in parentheses. If you enter more than one name, separate them with a space.

Parameter	Description
organization	Allows you to specify the organization's full legal name that the storage array belongs to. Do not abbreviate it and include any suffixes such as Inc, Corp, or LLC.
organizationalUnit	Allows the user to specify the organization's division that handles the certificate.
locality	Allows you to specify the city or locality where the storage array is located.
stateProvince	Allows you to specify the state or region where the storage array is located. This should not be abbreviated.
country	Allows you to specify your country's two-digit ISO (International Organization for Standardization) code, such as US.
file	Allows you to specify the file for which to save the controller's CSR file.

## Examples

```
SMcli -n Array1 -c "save controller [a] arrayManagementCSR
  commonName="ictd0702s05c01-a.ict.englab.xyz.com"
  alternateIPAddresses=(10.113.174.190 10.113.174.191)
  alternateDnsNames=("ictd0702s05c01-b.ict.englab.xyz.com")
  organization="Company"
  locality="Wichita"
  stateProvince="Kansas"
  country="US"
  file="C:\storage_array_csr.csr";"

SMcli completed successfully.
```

## Minimum firmware level

8.40

## Retrieve installed server certificate

The `save controller arrayManagementSignedCertificate` command retrieves the installed server certificate for the controller so you can view certificate details.



## Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

## Syntax

```
save controller [(a|b)] arrayManagementSignedCertificate
    file="filename"
```

## Parameters

Parameter	Description
controller	Allows you to specify the controller on which you want to download the signed certificate from. Valid controller identifiers are a or b, where a is the controller in slot A, and b is the controller in slot B. Enclose the controller identifier in square brackets ([ ]).
file	Allows you to specify the file for which to save the controller's signed certificate file.

## Examples

```
SMcli -n Array1 -c "save controller [a] arrayManagementSignedCertificate
    file="C:\controllerAcertificate.cer";"
```

```
SMcli -n Array1 -c "save controller [b] arrayManagementSignedCertificate
    file="C:\controllerBcertificate.cer";"
```

```
SMcli completed successfully.
```

## Minimum firmware level

8.40

## Retrieve installed CA certificates

The `save controller caCertificate` command retrieves the installed CA

certificates from the specified controller. Included in the retrieved certificates are any requested CA certificates from the controller's web server.

## Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

## Syntax

```
save controller[(a|b)] caCertificate [all | aliases=("alias1" ... "
aliasN")]
path="fileLocation"
```

## Parameters

Parameter	Description
controller	Allows you to specify the controller on which you want to retrieve the root/intermediate certificates. Valid controller identifiers are a or b, where a is the controller in slot A, and b is the controller in slot B. Enclose the controller identifier in square brackets ([ ]).
all	Allows you to specify the retrieval of all certificates that were imported to resolve the signed certificate chain. User-installed certificates include key management certificates.
aliases	Allows you to specify which user installed root/intermediate certificate to retrieve by alias. Enclose all the aliases in parentheses. If you enter more than one alias, separate them with a space.
path	Allows you to specify the local location to save the controllers' root/intermediate certificates.

## Examples

```
SMcli -n Array1 -c "save controller[a] caCertificate all path="C:\";"

SMcli -n Array1 -c "save controller[b] caCertificate aliases=("myAlias"
"anotherAlias") path="C:\";"

SMcli completed successfully.
```

## Minimum firmware level

8.40

## Save controller NVSRAM

The `save controller NVSRAM file` command saves a selected set of controller NVSRAM regions to a file.

### Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

### Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

### Syntax

```
save controller [(a|b)] NVSRAM file="filename"
```

### Parameters

Parameter	Description
controller	The controller with the NVSRAM values that you want to save. Valid controller identifiers are <code>a</code> or <code>b</code> , where <code>a</code> is the controller in slot A, and <code>b</code> is the controller in slot B. Enclose the controller identifier in square brackets <code>[ ]</code> .

Parameter	Description
file	<p>The file path and the file name to which you want to save the NVSRAM values. Enclose the NVSRAM file name in double quotation marks (" "). For example:</p> <pre>file="C:\Program Files\CLI\logs\nvsramb.txt"</pre> <p>The default name of the file that contains the NVSRAM values is <code>nvsram-data.txt</code>. This command does not automatically append a file extension to the saved file. You must specify a file extension when entering the file name.</p>

## Minimum firmware level

6.10

## Save drive channel fault isolation diagnostic status

The `save driveChannel faultDiagnostics file` command saves the drive channel fault isolation diagnostic data that is returned from the `start driveChannel faultDiagnostics` command.

## Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

## Context



With firmware version 8.10, the `save driveChannel faultDiagnostics` command is deprecated.

You can save the diagnostic data to a file as standard text or as XML.

## Syntax

```
save driveChannel faultDiagnostics file="filename"
```

## Parameter

Parameter	Description
file	<p>The file path and the file name to which you want to save the results of the fault isolation diagnostics test on the drive channel. Enclose the file name in double quotation marks (" "). For example:</p> <pre>file="C:\Program Files\CLI\sup\fltdiag.txt"</pre> <p>This command does not automatically append a file extension to the saved file. You must specify a file extension when entering the file name.</p>

## Notes

A file extension is not automatically appended to the saved file. You must specify the applicable format file extension for the file. If you specify a file extension of `.txt`, the output will be in a text file format. If you specify a file extension of `.xml`, the output will be in an XML file format.

## Minimum firmware level

7.15 introduces this new capability for legacy controller trays.

## Save input output controller (IOC) dump

The `save IOCLog` command saves the IOC dumps from the controllers in a storage array to a file on a host.

## Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

## Syntax

```
save IOCLog [file="filename"]
```

## Parameter

Parameter	Description
file	<p>The file path and the file name to which you save the IOC dump. Enclose the file name in double quotation marks (" "). For example:</p> <pre>file="C:\Array Backups\IOCCoredump1.7z"</pre> <p>This command saves the data to a compressed file and adds the file extension .7z to the saved file. The default name of the file that contains the IOC-related data for controllers in the storage array uses the WWN of the storage array.</p>

## Notes

This command retrieves from both controllers the IOC dump log data and the IOC dump metadata. Using a 7zip file format, the retrieved data is archived and compressed into a single file with a file name of your choice. The 7zip archive file contains the following:

- filename+"IOLog"+[A|B].gz — the IOC logs retrieved from controller A or controller B if available
- filename+"IOLogInfo"+[A|B].txt — the IOC logs metadata info retrieved from controller A or controller B . If the IOC log data cannot be retrieved from a controller, the metadata .txt file will contain the error condition and reason.

The following are error conditions:

- The controller platform and HIC do not support IOC dump.
- The controllers have not collected IOC dump data.

The compressed logs are not in a human-readable format. You must return the logs to technical support to be evaluated.

## Minimum firmware level

8.20

## Save storage array diagnostic data

The `save storageArray diagnosticData` command saves the storage array diagnostic data from either the controllers or the environmental services modules (ESMs) to a file.

## Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

## Context

You can review the file contents at a later time. You can also send the file to technical support for further review.

After you have saved the diagnostic data, you can reset the NVSRAM registers that contain the diagnostic data so that the old data can be overwritten. Use the `reset storageArray diagnosticData` command to reset the diagnostic data registers.



Run this command only with the assistance of technical support.

## Syntax

```
save storageArray diagnosticData [(controller | tray)]
file="filename"
```

## Parameters

Parameter	Description
diagnosticData	This parameter allows you to download the diagnostic data from either the controllers or the ESMs.
file	<p>The file path and the file name to which you want to save the storage array diagnostic data. Enclose the file name in double quotation marks (" "). For example:</p> <pre>file="C:\Program Files\CLI\logs\sadiag.zip"</pre> <p>This command automatically saves the data to a compressed file; however, this command does not automatically append a file extension to the saved file. You must specify the <code>.zip</code> extension when entering the file name.</p>

## Notes

In versions of this command before 7.77, the user option was `esm` instead of `tray`. Starting in 7.77, `tray` replaces `esm`. The use of `esm` is still supported, but for best compatibility with future releases, replace `esm` with `tray`.

## Minimum firmware level

6.16

7.77 `tray` replaces `esm`.

## Save asynchronous mirror group statistics

The `save storageArray arvmStats asyncMirrorGroup` command saves the synchronization statistics to a file for one or more member volumes in an asynchronous mirror group.

### Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, and E5700 arrays, as long as all SMcli packages are installed.

### Roles

To execute this command on an E2800, or E5700 storage array, you must have the Storage Admin role.

### Context

The statistics collected are available only for asynchronous mirror group member volumes in a primary role on the local storage array.

A set of data is collected during the synchronization process that can be used to evaluate how well the mirror configuration is functioning. The data is collected as a set of *samples*. A sample is created at the beginning of a synchronization process and updated regularly while the synchronization process proceeds.

A sample collects data until the synchronization process completes or until a disruption to the synchronization process occurs, such as a volume ownership transfer or a `read-write` error. When a synchronization process disruption is resolved (for example, the volume is transferred to the alternate controller), a new sample is created and updated as the synchronization process continues.

### Syntax

```
save storageArray arvmStats asyncMirrorGroup [asyncMirrorGroupName]
arvmStats file="filename"
"
[volume="volumeName"]
[sampleType=(all | mostRecent | longestSyncTime | errors)]
[recordLimit=(1-90)]
```

### Parameters



Parameter	Description
asyncMirrorGroup	<p>The name of the asynchronous mirror group for which you are saving synchronization statistics. Enclose the asynchronous mirror group name in square brackets ([ ]). If the asynchronous mirror group name has special characters or numbers, you must enclose the asynchronous mirror group name in double quotation marks (" ") inside square brackets.</p>
file	<p>The file path and the file name to which you want to save the synchronization statistics. Enclose the file name in double quotation marks (" "). For example:</p> <pre>file="C:\Program Files\CLI\logs\asynchdata.csv"</pre> <p>This command does not automatically append a file extension to the saved file. You can use any file name, but you must use the .csv extension.</p>
volume	<p>This parameter is optional. The name of the specific member volume in the asynchronous mirror group for which you are retrieving synchronization statistics. If no volume is specified, the statistics for every member volume in the asynchronous mirror group are saved.</p> <p>If statistics are collected for more than one volume in an asynchronous mirror group, all the data will be written to the same file.</p> <p>Enclose the volume name in double quotation marks (" ").</p>
sampleType	<p>This parameter is optional. The default value for sampleType is all.</p> <ul style="list-style-type: none"> <li>• all — Data for all three sample types are collected and written to the same file.</li> <li>• mostRecent — Statistics are recorded for the most recent 50 resynchronization samples.</li> <li>• longestSyncTime — Statistics are collected for the most recent 20 longest resynchronization samples.</li> <li>• errors — Statistics are recorded for the most recent 20 failed resynchronization samples. These samples include a failure code.</li> </ul>

Parameter	Description
<code>recordLimit</code>	This parameter is optional. The default value for record limit is <code>no limit</code> . The <code>recordLimit</code> must be greater than 0 and less than or equal to 90.

## Notes

Statistics are captured for mirrored volumes in the Primary role. The statistics collected include the following data:

- Synchronization start time
- Synchronization type (manual or periodic)
- Synchronization duration
- Number of bytes sent
- Maximum write time (for a single write)
- Minimum write time (for a single write)
- Minimum synchronization data rate
- Maximum synchronization data rate
- Total write time
- Repository utilization (%)
- Recovery point age

During initial synchronization, statistics samples are captured approximately every 15 minutes.

The synchronization statistics are included in the support bundle.

## Minimum firmware level

7.84

## Save auto-load balancing statistics

The `save storageArray autoLoadBalanceStatistics file` command provides automated I/O workload balancing and ensures that incoming I/O traffic from the hosts is dynamically managed and balanced across both controllers.

## Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

## Context

This command saves the automatic load balancing statistics of the storage array to a file. These statistics show the ownership change history on each volume in the array.



Send this file to technical support for interpretation.

## Syntax

```
save storageArray autoLoadBalanceStatistics file="filename"  
(numberOfDays=numberOfDays);
```

## Parameters

Parameter	Description
storageArray	Specifies that this command works on a storage array.
file	The file path and the file name to which you want to save the auto-load balancing statistics. Enclose the file name in double quotation marks (" ").
numberOfDays	The number of days worth of statistics to save. This parameter is optional and the default value is 0, which indicates all available data.

## Example

```
SMcli -n Array1 -c "save storageArray autoLoadBalanceStatistics  
file="filename" numberOfDays=30;"
```



An active "Drive Lost Primary Path" condition will result in the Automatic Load Balancing incapable of balancing workloads. This condition must be inactive to ensure workloads are balanced through the Automatic Load Balancing feature.

## Minimum firmware level

8.30

## Retrieve an AutoSupport log

The `save storageArray autoSupport log` command allows you to view an AutoSupport log file. This file provides information about status, history of transmission activity, and any errors encountered during delivery of the AutoSupport messages. The log is available for all AutoSupport-capable and AutoSupport-enabled storage arrays.

## Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

## Context



This command allows you to view two types of logs:

- Current log — View the log captured at this point in time.
- Archive log — View the log from an archived file.

## Syntax

```
save storageArray autoSupport log [inputArchive=n]  
file="filename"
```

## Parameters

Parameter	Description
inputArchive	<p>Allows you to specify the archived AutoSupport log, where the archive file is <i>n</i>, an integer starting at 0.</p> <div> Omitting this parameter means you select the current AutoSupport log (captured at this point in time).</div>
file	<p>Allows you to specify the output ASUP transmission log filename.</p> <div> This parameter is required.</div>

## Examples

```
SMcli -n Array1 -c "save storageArray autoSupport log inputArchive=0  
file=\"ASUPTransmissionLog\";"  
  
SMcli completed successfully.
```

## Minimum Firmware Level

8.40

## Save storage array configuration

The `save storageArray configuration` command creates a script file that you can use to re-create the current storage array volume configuration.

### Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

### Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role. However, the use of this command with the LDAP parameter is restricted to those with the Security Admin role.

### Context



This command does not save remote mirroring or volume copy configuration data on the current storage array to a file.

### Syntax

```
save storageArray configuration file="filename"
(allconfig|[globalSettings=(TRUE | FALSE)]
[volumeConfigAndSettings=(TRUE | FALSE)]
[hostTopology=(TRUE | FALSE)]
[lunMappings=(TRUE | FALSE)])
```

### Parameters

Parameter	Description
file	<p>The file path and the file name to which you want to save the configuration settings. Enclose the file name in double quotation marks (" "). For example:</p> <pre>file="C:\Program Files\CLI\logs\sacnf.cfg"</pre> <p>The default name of the file that contains the configuration settings is <code>storage-array-configuration.cfg</code>. This command does not automatically append a file extension to the saved file. You must specify a file extension when entering the file name.</p>
allConfig	The setting to save all of the configuration values to the file. (If you choose this parameter, all of the configuration parameters are set to <code>TRUE</code> .)
globalSettings	The setting to save the global settings to the file. To save the global settings, set this parameter to <code>TRUE</code> . To prevent saving the global settings, set this parameter to <code>FALSE</code> . The default value is <code>TRUE</code> .
volumeConfigAndSettings	The setting to save the volume configuration settings and all of the global settings to the file. To save the volume configuration settings and global settings, set this parameter to <code>TRUE</code> . To prevent saving the volume configuration settings and global settings, set this parameter to <code>FALSE</code> . The default value is <code>TRUE</code> .
hostTopology	The setting to save the host topology to the file. To save the host topology, set this parameter to <code>TRUE</code> . To prevent saving the host topology, set this parameter to <code>FALSE</code> . The default value is <code>FALSE</code> .
lunMappings	The setting to save the LUN or NSID mapping to the file. To save the LUN or NSID mapping, set this parameter to <code>TRUE</code> . To prevent saving the LUN or NSID mapping, set this parameter to <code>FALSE</code> . The default value is <code>FALSE</code> .

## Notes

When you use this command, you can specify any combination of the parameters for the global setting, the volume configuration setting, the host topology, or the LUN mapping. If you want to enter all settings, use the `allConfig` parameter. You must either use the `allConfig` parameter, or one or more of the other four parameters.

## Minimum firmware level

6.10

# Save storage array controller health image

The `save storageArray controllerHealthImage` command saves a controller health image to a specified file on a host, for storage arrays that support the controller health image feature.

## Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

## Context



With firmware version 8.20 the `coreDump` parameter is replaced by the `controllerHealthImage` parameter.

If the storage array does not support the controller health image feature, the command returns an error.

## Syntax

```
save storageArray controllerHealthImage file="filename"
```

## Parameter

Parameter	Description
file	The file path and the file name to which you save the controller health image. Enclose the file name in double quotation marks (" "). For example: <div>file="C:\Array Backups\DBMbackup_03302010.core"</div>

## Notes

A controller health image file might be one to two gigabytes in size, and take several minutes to save. In addition to saving the controller health image itself, this command generates an XML descriptor file based on

the controller health image metadata. This descriptor file is saved in ZIP file format to the same path as the controller health image. The following example show the XML format for the descriptor file.

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
- <DPLcontrollerHealthImageInfo>
<dplcontrollerHealthImageTag>sometag#</dplcontrollerHealthImageTag>
<captureTime>12/22/10 3:58:53 PM IST</captureTime>
- <StorageArrayData>
<ArraySAID>600a0b80006e006a000000004c65efc1</ArraySAID>
<ManagementApiVersion>devmgr.v1083api01.Manager</ManagementApiVersion>
<fwVersion>07.83.01.00</fwVersion>
<platformType>7091</platformType>
</StorageArrayData>
<fullcontrollerHealthImageCtrl>controllerserialNumber1
    </fullcontrollerHealthImageCtrl>
<fullcontrollerHealthImageSize>fullCaptureSize</fullcontrollerHealthImageSize>
<altcontrollerHealthImageCtrl>controllerserialNumber2</altcontrollerHealthImageCtrl>
<altcontrollerHealthImageSize>altCaptureSize</altcontrollerHealthImageSize>
<triggerReason>Exception</triggerReason>-<DPLcontrollerHealthImageDetail>
<dplcontrollerHealthImageReason>DPLcontrollerHealthImageReason
    </dplcontrollerHealthImageReason>
- <fwLocation >
<filename>filename</filename>
<lineNumber>line#</lineNumber>
</fwLocation >
<panicReason>panicString</panicReason>
</DPLcontrollerHealthImageDetail>
</DPLcontrollerHealthImageInfo>
```

When you retrieve a controller health image from the controller cache to a host, a flag is set on the controller to indicate that the controller health image does not need to be retrieved. This setting persists for 48 hours. If a new controller health image occurs during that period, the new controller health image is saved to the controller cache and overwrites any previous controller health image data in cache.

## Minimum firmware level

7.83

8.20 replaces the `coreDump` parameter with the `controllerHealthImage` parameter.



# Save storage array DBM database

The `save storageArray dbmDatabase` command backs up RAID configuration data or all data to a file on the host. You can specify multiple data locations and controllers.

## Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

## Syntax

```
save storageArray dbmDatabase
[sourceLocation=(disk | onboard)]
[controller [(a|b)]]
[contentType= all]
file="fileName"
```

## Parameters

Parameter	Description
file	<p>The file path and the file name to which you want to save the database. Enclose the file name in double quotation marks ( " "). For example:</p> <pre>file="C:\Program Files\CLI\logs\dbmdata.zip"</pre> <p>This parameter must appear last, after any of the optional parameters.</p> <p>This command creates a .zip file and you do not need to specify a file extension.</p>

Parameter	Description
<code>sourceLocation</code>	<p>This parameter specifies the location from which to obtain backup database information.</p> <ul style="list-style-type: none"> <li>• <code>disk</code> indicates that data comes directly from the database on the drive</li> <li>• <code>onboard</code> indicates that data comes from the RPA memory location</li> </ul> <p>The default location is <code>onboard</code>.</p>
<code>controller</code>	<p>This parameter specifies the controller from which data will be exclusively retrieved, if <code>sourceLocation</code> is set to <code>onboard</code>. If the <code>controller</code> parameter is not specified, data might be retrieved from either controller.</p> <p>Valid controller identifiers are <code>a</code> or <code>b</code>, where <code>a</code> is the controller in slot A, and <code>b</code> is the controller in slot B.</p>
<code>contentType</code>	<p>This parameter specifies the content type of the data that will be retrieved.</p> <p>This parameter is set to <code>all</code> by default, so that all of the data including disk pool configuration data is retrieved.</p>

## Notes

The data that you save to the host using this command can, if needed, be restored to the controller. A validator, however, is required to restore data from the file on the host.

## Minimum firmware level

7.75

7.83 adds these parameters:

- `sourceLocation`
- `controller`
- `contentType`

## Save storage array DBM validator information file

The `save storageArray dbmValidatorInfo` command saves the database management (DBM) validation information for a storage array in an XML file.

## Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

## Context

Technical support can use this XML file to generate a validator string (a security code). The validator string must be included in the `load storageArray dbmDatabase` command when restoring a storage array back to a pre-existing configuration.

## Syntax

```
save storageArray dbmValidatorInfo file="filename" dbmDatabase="filename"
```

## Parameters

Parameter	Description
file	<p>The file path and the file name of the DBM validator required for technical support. Enclose the file name in double quotation marks (" "). For example:</p> <pre>file="C:\Array Backups \DBMvalidator.xml"</pre> <p>This command does not automatically append a file extension to the saved file. You must specify the .xml file extension when you enter the file name.</p>
dbmDatabase	<p>The file path and the file name of the DBM database from which you want to generate the XML information file. Enclose the file name in double quotation marks (" "). For example:</p> <pre>dbmDatabase="C:\Array Backups \DBMbackup_03302010.dbm"</pre> <p>This command does not automatically append a file extension to the saved file. You must specify the .dbm file extension when you enter the file name.</p>

## Notes

If you are generating the XML information file to obtain a validator string, you must run this command while you are connected to the controller where you intend to restore the database. The following example show the format of the XML file:

```
<?xml version="1.0" encoding="utf-8"?>
<DbmImageMetadata>
<Controllers>
<A>1IT0nnnnnnnnnnABCD</A>
<B>1T0nnnnnnnnnnABCD</B>
</Controllers>
<Header>
<ImageVersion>1</ImageVersion>
<TimeStamp>1269388283</TimeStamp>
</Header>
<Trailer>
<CRC>nnnnnnnnnn</CRC><
/Trailer>
</DbmImageMetadata>
```

## Minimum firmware level

7.75

## Save storage array firmware inventory

The `save storageArray firmwareInventory` command saves a report to a file of all of the firmware currently running on the storage array.

### Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

### Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

### Context

The report lists the firmware for these components:

- Controllers
- Drives
- Drawers (if applicable)
- Environmental services modules (ESMs)
- Power supplies

You can use the information to help identify out-of-date firmware or firmware that does not match the other firmware in your storage array. You can also send the report to technical support for further review.

## Syntax

```
save storageArray firmwareInventory file="filename"
```

## Parameter

Parameter	Description
file	<p>The file path and the file name to which you want to save the firmware inventory. Enclose the file name in double quotation marks (" "). For example:</p> <pre>file="C:\Program Files\CLI\logs\fwinvent.txt"</pre> <p>The default name of the file that contains the firmware inventory is <code>firmware-inventory.txt</code>. This command does not automatically append a file extension to the saved file. You must specify a file extension when entering the file name.</p>

## Minimum firmware level

7.70

# Save storage array host port statistics

The `save storageArray hostPortStatistics` command saves the storage array host port statistics.

## Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Security Admin role.

## Context



This command replaces the deprecated [Save storage array iSCSI statistics](#), [Save storage array iSER statistics](#), and [Save storage array InfiniBand statistics](#) commands.

## Syntax

```
save storageArray hostPortStatistics [(raw | baseline)] type=(ISCSI| ISER
| SRP | NVMEOF) file="filename"
```

## Parameters

Parameter	Description
raw	Allows you to retrieve the collected statistics since start-of-day. Enclose the parameter in square brackets ([ ]).
baseline	Allows you to retrieve the collected statistics from the time the controllers' baselines were reset to zero. Enclose the parameter in square brackets ([ ]).
type	Allows you to indicate which statistics type to collect. Valid choices are: ISCSI, ISER, SRP, and NVMEOF.
file	Allows you to specify the file path and filename to save the statistics. Enclose the file name in double quotation marks (" "). Use any file name with the .csv extension.

Type	Ethernet MAC, Ethernet TCP/IP, Local Initiator (Protocol), DCBX Operational State, LLDP TLV, DCBX TLV	Target (Protocol)	InfiniBand Interface	NVMe Subsystem	ASUP Filename
iscsi	X	X			
iser		X	X		
srp			X		
nvmeof			X	X	

## Minimum firmware level

8.41

# Save storage array InfiniBand statistics

The `save storageArray ibStats` command saves the InfiniBand performance statistics of the storage array to a file.

## Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.



This command is deprecated and is replaced by the [Save storage array host port statistics](#) command.

## Syntax

```
save storageArray ibStats [raw | baseline]
file="filename"
```

## Parameters

Parameter	Description
raw	The statistics that are collected are all statistics from the controller start-of-day. Enclose the parameter in square brackets ([ ]).
baseline	The statistics that are collected are all statistics from the time the controllers were reset to zero using the <code>reset storageArray ibStatsBaseline</code> command. Enclose the parameter in square brackets ([ ]).
file	<p>The file path and the file name to which you want to save the performance statistics. Enclose the file name in double quotation marks (" "). For example:</p> <pre>file="C:\Program Files\CLI\sup\ibstat.csv"</pre> <p>The default name of the file that contains the InfiniBand performance statistics is <code>ib-statistics.csv</code>. You can use any file name, but you must use the <code>.csv</code> extension.</p>

## Notes

If you have not reset the InfiniBand baseline statistics since the controller start-of-day, the time at the start-of-day is the default baseline time.

## Minimum firmware level

7.32

8.41 This command is deprecated.

## Save storage array iSCSI statistics

The `save storageArray iscsiStatistics` command saves the iSCSI performance statistics of the storage array to a file.

## Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.



This command is deprecated and is replaced by the [Save storage array host port statistics](#) command.

## Syntax

```
save storageArray iscsiStatistics [(raw | baseline)] file="filename"
```

## Parameters

Parameter	Description
raw	The statistics collected are all statistics from the controller start-of-day. Enclose the parameter in square brackets ([ ]).
baseline	The statistics that are collected are all statistics from the time the controllers were reset to zero using the <code>reset storageArray ibStatsBaseline</code> command. Enclose the parameter in square brackets ([ ]).



Parameter	Description
file	<p>The file path and the file name to which you want to save the performance statistics. Enclose the file name in double quotation marks (" "). For example:</p> <pre>file="C:\Program Files\CLI\logs\iscsistat.csv"</pre> <p>The default name of the file that contains the iSCSI performance statistics is <code>iscsi-statistics.csv</code>. You can use any file name, but you must use the <code>.csv</code> extension.</p>

## Notes

If you have not reset the iSCSI baseline statistics since the controller start-of-day, the time at the start-of-day is the default baseline time.

## Minimum firmware level

7.10

8.41 This command is deprecated.

# Save storage array iSER statistics

The `save storageArray iSER statistics` command saves the iSER performance statistics of the storage array to a file.

## Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.



This command is deprecated and is replaced by the [Save storage array host port statistics](#) command.

## Syntax

```
save storageArray iSER statistics [(raw | baseline)] file="filename"
```

## Parameters

Parameter	Description
raw	The statistics collected are all statistics from the controller start-of-day. Enclose the parameter in square brackets ([ ]).
baseline	The statistics that are collected are all statistics from the time the controllers were reset to zero using the <code>reset storageArray iserStatsBaseline</code> command. Enclose the parameter in square brackets ([ ]).
file	<p>The file path and the file name to which you want to save the performance statistics. Enclose the file name in double quotation marks (" "). For example:</p> <pre>file="C:\Program Files\CLI\logs\iserstat.csv"</pre> <p>The default name of the file that contains the iSCSI performance statistics is <code>iser-statistics.csv</code>. You can use any file name, but you must use the <code>.csv</code> extension.</p>

## Notes

If you have not reset the iSER baseline statistics since the controller start-of-day, the time at the start-of-day is the default baseline time.

## Minimum firmware level

8.20

8.41 This command is deprecated.

## Retrieve installed external key management certificate

The `save storageArray keyManagementCertificate` command retrieves the installed certificate.

## Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security

Admin role.

### Context



This command applies only to external key management.

### Syntax

```
save storageArray keyManagementCertificate
certificateType="certificateType"
file="filename"
```

### Parameters

Parameter	Description
certificateType	Allows you to specify the certificate type to install. Valid choices are: client or server.
file	Allows you to specify the filename for the signed certificate or server CA certificate.

### Minimum firmware level

8.40

## Generate Key Management Certificate Signing Request (CSR)

The `save storageArray keyManagementClientCSR` command requests a generated CSR for the storage array that you can save to a file.

### Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

### Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

### Context



This command applies only to external key management.

## Syntax

```
save storageArray keyManagementClientCSR commonName="common_name"
organization="organization"
locality="locality"
country="country"
file="file"
[organizationalUnit="organizational unit"]
[stateProvince="state_province"]
```

## Parameters

Parameter	Description
commonName	The value entered for this parameter must match one of the user names defined on the KMIP server.
organization	Allows you to specify the organization's full legal name that the storage array belongs to. Do not abbreviate it and include any suffixes such as Inc, Corp, or LLC.
locality	Allows you to specify the city or locality where the storage array is located,
country	Allows you to specify your country's two-digit ISO (International Organization for Standardization) 3166-1 alpha-2 code, such as US.
file	Allows you to specify the file and file location where you will save the controller's signed certificate file.
organizationalUnit	Allows you to specify the organization's division that handles the certificate.
stateProvince	Allows you to specify the state or region where the storage array is located. This should not be abbreviated.

## Example

```
SMcli -n Array1 -c "save storageArray keyManagementClientCSR
commonName="192.0.2.1"
organization="Widgets Are Us, Inc."
locality="sedgwick"
country="US"
file="latestCertificate"
organizationalUnit="Products Unit"
stateProvince="Kansas";"

SMcli completed successfully.
```

## Minimum firmware level

8.40

## Save storage array login banner

The `save storageArray loginBanner` command allows you to save a login banner to your local machine. The banner text can include an advisory notice and consent message, which is presented to users before they establish sessions.

## Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

## Roles

A user with any role can execute this command.

## Syntax

```
save storageArray loginBanner file="file_name"
```

## Parameters

Parameter	Description
file	The name for the login banner file.

## Minimum firmware level

8.41

# Save storage array performance statistics

The `save storageArray performanceStats` command saves the performance statistics to a file.

## Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

## Context

Before you use this command, run the `set session performanceMonitorInterval` command and the `set session performanceMonitorIterations` command to specify how often statistics are collected.

## Syntax

```
save storageArray performanceStats file="filename"
```

## Parameter

Parameter	Description
file	<p>The file path and the file name to which you want to save the performance statistics. Enclose the file name in double quotation marks (" "). For example:</p> <pre>file="C:\Program Files\CLI\logs\sastat.csv"</pre> <p>The default name of the file that contains the performance statistics is <code>performanceStatistics.csv</code>. You can use any file name, but you must use the <code>.csv</code> extension.</p>

## Minimum firmware level

6.10

# Save storage array RLS counts

The `save storageArray RLSCounts` command saves the read link status (RLS) counters to a file.

## Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

## Syntax

```
save storageArray RLSCounts file="filename"
```

## Parameter

Parameter	Description
file	<p>The file path and the file name to which you want to save the RLS counters. Enclose the file name in double quotation marks (" "). For example:</p> <pre>file="C:\Program Files\CLI\logs\rlscnt.csv"</pre> <p>The default name of the file that contains the RLS counts is <code>read-link-status.csv</code>. You can use any file name, but you must use the <code>.csv</code> extension.</p>

## Notes

To more effectively save RLS counters to a file, perform these steps:

1. Run the `reset storageArray RLSBaseline` command to set all of the RLS counters to 0.
2. Run the storage array for a predetermined amount of time (for instance, two hours).
3. Run the `save storageArray RLSCounts file="filename"` command.

## Minimum firmware level

6.10

## Save storage array SAS PHY counts

The `save storageArray SASPHYCounts` command saves the SAS physical layer (SAS PHY) counters to a file.

## Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

## Context

To reset the SAS PHY counters, run the `reset storageArray SASPHYBaseline` command.

## Syntax

```
save storageArray SASPHYCounts file="filename"
```

## Parameter

Parameter	Description
file	<p>The file path and the file name to which you want to save the SAS PHY counters. Enclose the file path and the file name in double quotation marks (" "). For example:</p> <pre>file="C:\Program Files\CLI\logs\sasphy.csv"</pre> <p>The default name of the file that contains the SAS PHY error statistics is <code>sas-phy-error-log.csv</code>. You can use any file name, but you must use the <code>.csv</code> extension.</p>

## Minimum firmware level

6.10

## Save storage array SOC counts

The `save storageArray SOCCounts` command saves the SOC error statistics to a file.

## Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.



## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

## Context

This command is valid only for Fibre Channel devices in an arbitrated loop topology.

## Syntax

```
save storageArray SOCCounts file="filename"
```

## Parameter

Parameter	Description
file	<p>The file path and the file name to which you want to save the SOC error statistics. Enclose the file name in double quotation marks (" "). For example:</p> <pre>file="C:\Program Files\CLI\logs\socstat.csv"</pre> <p>The default name of the file that contains the SOC error statistics is <code>soc-statistics.csv</code>. You can use any file name, but you must use the <code>.csv</code> extension.</p>

## Notes

To more effectively save SOC error statistics to a file, perform these steps:

1. Run the `reset storageArray SOCBaseline` command to set all of the SOC counters to 0.
2. Run the storage array for a predetermined amount of time (for example, two hours).
3. Run the `save storageArray SOCCounts file="filename"` command.

## Minimum firmware level

6.16

## Save storage array state capture

The `save storageArray stateCapture` command saves the state capture of a storage array to a file.

## Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

## Syntax

```
save storageArray stateCapture file="filename"
```

## Parameter

Parameter	Description
file	<p>The file path and the file name to which you want to save the state capture. Enclose the file name in double quotation marks (" "). For example:</p> <pre>file="C:\Program Files\CLI\logs\state.txt"</pre> <p>You can use any file name, but you must use the .txt extension.</p> <p>The default name of the file that contains the state capture is <code>state-capture-data.txt</code>. This command does not automatically append a file extension to the saved file. You must specify a file extension when entering the file name.</p>

## Save storage array support data

The `save storageArray supportData` command saves the support-related information of the storage array to a file.

## Supported Arrays



This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.


## Roles



To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

## Context

The following table lists the type of support data that you can collect.

Type of data	File name and description
Automatic Load Balancing statistics	<p>alb-statistics-A.txt</p> <p>alb-statistics-B.txt</p> <p>This file, one per controller, specify various statistics related to the Automatic Load Balancing feature that allow further analysis via offline analysis tool.</p>
Core dump metadata	<p>all-coredump.xml</p> <p>This file contains core dump metadata for the array.</p> <div><p>Starting with the 8.25 release, core-dump-info.xml has been renamed to all-coredump.xml.</p></div>
AutoSupport status	<p>autosupport.xml</p> <p>This file specifies the current status of ASUP for the given array.</p>
The AutoSupport history file	<p>autosupport-history.xml</p> <p>This file specifies all ASUP messages, both standard and AutoSupport OnDemand messages, for the given array. Each entry in the table corresponds to an ASUP message currently sitting in one of the repositories for a given array.</p>
AutoSupport logs	<p>asup-transmission-logs.txt</p> <p>This file contains all the transmitted AutoSupport messages.</p>
Web Server Client Info	<p>client-info.txt</p> <p>This file specifies various Web Services client information.</p> <div><p>This parameter is not applicable for E2700 and E5600 arrays.</p></div>

Type of data	File name and description
Drive cabling topology	<p><code>connection.txt</code> This file contains information about the connections between the drive tray environmental services module (ESM) and the controller pair.</p>
Cumulative statistics bundles	<p><code>cumulative-drive-vol-stats.xml</code></p> <p>This file contains cumulative statistics for the controllers.</p>
Misbehaving drive log	<p><code>controller-drive-error-event-log.txt</code></p> <p>This file contains the storage array controller drive-side error and event log messages.</p>
Controller health image metadata	<p><code>all-coredump.xml</code></p> <p>This file contains DPL controller health image information.</p> <div>  <p>Starting with the 8.25 release, <code>core-dump-info.xml</code> has been renamed to <code>all-coredump.xml</code>.</p> </div>
DOM 0 journal files for controller A (E2800 or E5700 only)	<p><code>dom0-complete-journal-A.7z</code></p> <p>This file, one per controller, contains detailed Linux system logs. This includes logs for Linux packages and standard Linux utilities and services.</p>
DOM 0 journal files for controller B (E2800 or E5700 only)	<p><code>dom0-complete-journal-B.7z</code></p> <p>This file, one per controller, contains detailed Linux system logs. This includes logs for Linux packages and standard Linux utilities and services.</p>
Miscellaneous DOM 0 log files for controller A (E2800 or E5700 only)	<p><code>dom0-misc-logs-A.7z</code></p> <p>This file, one per controller, contains system logs that cannot be contained with the Journal. This includes the serial log for the RAID Application and debug logs for the Hypervisor.</p>

Type of data	File name and description
Miscellaneous DOM 0 log files for controller B (E2800 or E5700 only)	<p>dom0-misc-logs-B.7z</p> <p>This file, one per controller, contains system logs that cannot be contained with the Journal. This includes the serial log for the RAID Application and debug logs for the Hypervisor.</p>
Drive command aging timeout values	<p>drive-command-aging-timeout.txt This file contains the default values and current values for the command aging timeout field for every drive.</p>
Drive health logs	<p>drive-health-data.bin This file contains various drive information related to the drive's health.</p> <div>  <p>This file is a binary file and will require an offline parser to convert to human readable format.</p> </div>
Drive performance analyzer data	<p>drive-performance-log.txt</p> <p>This file contains drive performance data that helps you identify any drives that are performing below expectations.</p>
Enterprise Management Window configuration	<p>emwdata_v04.bin</p> <p>This file contains the EMW configuration data store file.</p> <div>  <p>In support bundles for the E2800 and E5700, this file isn't present.</p> </div>
Tray event logs	<p>expansion-tray-log.txt</p> <p>ESM event logs.</p>
Failed repository analysis	<p>failed-repository-analysis.txt</p> <p>This file contains the failed repository analysis information.</p>
Features of the storage array	<p>feature-bundle.txt This file contains a list of the number of volumes, drives, and drive trays allowed in the storage array and a list of the features available and their limits.</p>

Type of data	File name and description
Firmware inventory	<code>firmware-inventory.txt</code> This file contains a list of all of the firmware versions for all of the components in the storage array.
InfiniBand interface statistics (InfiniBand only)	<code>ib-statistics.csv</code>  This file contains the InfiniBand interface statistics.
I/O path statistics	<code>io-path-statistics.7z</code> This file contains raw performance data for each controller that can be used to analyze application performance issues.
IOC dump info for the host interface chip	<code>ioc-dump-info.txt</code> This file contains IOC dump information for the host interface chip.
IOC dump logs for the host interface chip	<code>ioc-dump.gz</code> This file contains the log dump from the host interface chip on the controller. The file is compressed in gz format. The zip file is saved as a file inside of the Customer Support Bundle.
iSCSI connections (iSCSI only)	<code>iscsi-session-connections.txt</code> This file contains a list of all of the current iSCSI sessions.
iSCSI statistics (iSCSI only)	<code>iscsi-statistics.csv</code> This file contains statistics for the Ethernet media access control (MAC), Ethernet Transmission Control Protocol (TCP)/Internet Protocol (IP), and iSCSI target.
iSER interface statistics (iSER over InfiniBand only)	<code>iser-statistics.csv</code> This file contains the statistics for the host interface card that runs iSER over InfiniBand.
Major event log	<code>major-event-log.txt</code> This file contains a detailed list of events that occur on the storage array. The list is stored in reserved areas on the disks in the storage array. The list records configuration events and component failures in the storage array.
Manifest file	<code>manifest.xml</code>  This file contains a table that describes the files included in the archive file and the collected status of each of those files.

Type of data	File name and description
Storage management software runtime information	<p><code>msw-runtime-info.txt</code></p> <p>This file contains the storage management software application runtime information. Contains the JRE version currently used by the storage management software.</p>
NVMe-oF statistics	<p><code>nvmeof-statistics.csv</code></p> <p>This file contains a list of statistics, including NVMe controller statistics, NVMe queue statistics, and interface statistics for the transport protocol (for example, InfiniBand).</p>
NVSRAM data	<p><code>nvsram-data.txt</code> This controller file specifies the default settings for the controllers.</p>
Object bundle	<p><code>object-bundle.bin</code> <code>object-bundle.json</code></p> <p>This bundle contains a detailed description of the status of your storage array and its components, which was valid at the time that the file was generated.</p>
Summary performance statistics	<p><code>perf-stat-daily-summary-a.csv</code> <code>perf-stat-daily-summary-b.csv</code></p> <p>This file contains various controller performance statistics, one file per controller.</p>
Persistent reservations and registrations	<p><code>persistent-reservations.txt</code> This file contains a detailed list of volumes on the storage array with persistent reservations and registrations.</p>
Storage management software user preferences	<p><code>pref-01.bin</code></p> <p>This file contains the user preference persistent data store.</p> <div>  <p>In support bundles for the E2800 or E5700, this file is not present.</p> </div>

Type of data	File name and description
Recovery Guru procedures	<code>recovery-guru-procedures.html</code> This file contains a detailed list of all of the recovery guru topics that are issued in response to problems detected on the storage array. For the E2800 and E5700 arrays, this file contains only the recovery guru details, not the HTML files.
Recovery profile	<code>recovery-profile.csv</code> This file contains a detailed description of the latest recovery profile record and historical data.
SAS PHY error logs	<code>sas-phy-error-logs.csv</code>  This file contains the error information for SAS PHY.
State capture data	<code>state-capture-data.txt</code> This file contains a detailed description of the current state of your storage array.
Storage array configuration	<code>storage-array-configuration.cfg</code> This file contains a detailed description of the logical configuration on your storage array.
Storage array profile	<code>storage-array-profile.txt</code> This file contains a description of all of the components and properties of a storage array.
Trace buffer contents	<code>trace-buffers.7z</code> This file contains the contents of the controllers' trace buffers that are used to record debug information.
Tray capture data	<code>tray-component-state-capture.7z</code> If your tray contains drawers, the diagnostic data is archived in this zipped file. The Zip file contains a separate text file for each tray that contains drawers. The Zip file is saved as a file inside of the Customer Support Bundle.
Unreadable sectors	<code>unreadable-sectors.txt</code> This file contains a detailed list of all of the unreadable sectors that have been logged to the storage array.



Type of data	File name and description
Web Services Trace Log (E2800 or E5700 only)	<p>web-server-trace-log-A.7z</p> <p>web-server-trace-log-B.7z</p> <p>This file, one per controller, contains Web Services trace buffers that are used to record debug information.</p>
Workload capture analytics log file	<p>wlc-analytics-a.lz4 wlc-analytics-b.lz4</p> <p>This file, one per controller, contains computed key workload characteristics such as LBA histogram, read/write ratio and I/O throughput across all active volumes.</p>
X-header data file	<p>x-header-data.txt</p> <p>This AutoSupport message header consists of plain text key-value pairs; which include information about the array and message type.</p>

## Syntax

```
save storageArray supportData file="filename" [force=(TRUE | FALSE)]
```

```
save storageArray supportData file="filename"
[force=(TRUE | FALSE) |
csbSubsetid=(basic | weekly | event | daily | complete) |
csbTimeStamp=hh:mm]
```

## Parameters

Parameter	Description
file	<p>The file path and the file name to which you want to save the support-related data for the storage array. Enclose the file path and the file name in double quotation marks (" "). For example:</p> <p>file="C:\Program Files\CLI\logs\supdat.7z"</p>

Parameter	Description
<code>force</code>	This parameter forces the collection of support data if there are any failures in securing a lock on controller operations. To force the collection of support data, set this parameter to <code>TRUE</code> . The default value is <code>FALSE</code> .

## Notes

Starting with firmware level 7.86, the file name extension must be `.7z` on systems running Windows. If you are running a firmware version earlier than 7.86 on a Windows system, the files extension must be `.zip`. On systems that are not running Windows, you can use any file extension that works for your system.

## Minimum firmware level

7.80 adds the `force` parameter.

8.30 adds information for the E2800 storage array.

## Retrieve installed trusted CA certificates

The `save storageArray trustedCertificate` command retrieves the installed trusted CA certificates for the array. Included in the retrieved files are any requested CA certificates from the array's web servers.

## Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

## Syntax

```
save storageArray trustedCertificate [allUserInstalled |
aliases=("alias1" ... "aliasN")] path="fileLocation"
```

## Parameters

Parameter	Description
<code>allUserInstalled</code>	Allows you to specify the retrieval of user installed certificates. The default option is <code>allUserInstalled</code> if you didn't specify any aliases.

Parameter	Description
aliases	Allows you to specify which user installed trusted certificate to retrieve by alias. Enclose all the aliases in parentheses. If you enter more than one alias, separate them with a space.
path	Allows you to specify the local location for which to save the controller's trusted certificates.

## Examples

```
SMcli -n Array1 -c "save storageArray trustedCertificate allUserInstalled
path="C:\";"
```

```
SMcli -n Array1 -c "save storageArray trustedCertificate
aliases=("myAlias" "anotherAlias") path="C:\";"
```

```
SMcli completed successfully.
```

## Minimum firmware level

8.40

## Save storage array events

The `save storageArray warningEvents` command saves events from the Major Event Log to a file.

## Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

## Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

## Context

This command saves events from the Major Event Log to a file. You can save these events:

- **Critical events** — An error occurred on the storage array that needs to be addressed immediately. Loss of data access might occur if you do not immediately correct the error.
- **Warning events** — An error occurred on the storage array that results in degraded performance or reduced ability to recover from another error. Access to data has not been lost, but you must correct the

error to prevent possible loss of data access if another error would occur.

- **Informational events** — An event occurred on the storage array that does not impact normal operations. The event is reporting a change in configuration or other information that might be useful in evaluating how well the storage array is performing.
- **Debug events** — An event occurred on the storage array that provides information that you can use to help determine the steps or states that led to an error. You can send a file with this information to technical support to help determine the cause of an error.




Some storage arrays might not be able to support all four types of events.

## Syntax

```
save storageArray (allEvents | criticalEvents |  
warningEvents | infoEvents | debugEvents)  
file="filename"  
[count=numberOfEvents]  
[forceSave=(TRUE | FALSE)]
```

## Parameters

Parameter	Description
allEvents	The parameter to save all of the events to a file.
criticalEvents	The parameter to save only the critical events to a file.
warningEvents	The parameter to save only the warning events to a file.
infoEvents	The parameter to save only the informational events to a file.
debugEvents	The parameter to save only the debug events to a file.
file	<p>The file path and the file name to which you want to save the events. Enclose the file name in double quotation marks (" "). For example:</p> <pre>file="C:\Program Files\CLI\logs\events.txt"</pre> <p>The default name of the file that contains the contents of the Major Event Log is <code>major-event-log.txt</code>. This command does not automatically append a file extension to the saved file. You must specify a file extension when entering the file name.</p>

Parameter	Description
count	The number of events that you want to save to a file. If you do not enter a value for the count, all events matching the type of event you specify are saved to the file. If you enter a value for the count, only that number of events (starting with the last event entered) are saved to the file. Use integer values.
forceSave	<p>The parameter to force saving the debug events you may have filtered from view to a file. To force saving the events, set this parameter to <code>TRUE</code>. The default value is <code>FALSE</code>.</p> <div>  <p>Using this parameter saves debug events that have been filtered out of the SANtricity Event Viewer.</p> </div>

## Minimum firmware level

7.77 add these parameters:

- warningEvents
- infoEvents
- debugEvents
- forceSave

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