❚ NetApp

Troubleshoot SMI-S Provider

NetApp SMI-S Provider

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Overview

If you encounter a problem with NetApp SMI-S Provider, you should use any error messages that you receive to help with troubleshooting.

Access is denied error

- **Message**

  ```
  Access is denied.
  ```

- **Description**

  This message occurs in two possible situations:

  - If you are not logged in as Administrator when accessing SMI-S Provider from the Start menu shortcut

  - If the SMI-S Provider directory is not pointing to `C:\Program Files (x86)\NetApp\smis\pegasus\bin`

- **Corrective action**

  Complete the action that corresponds to the situation:

  - Log in with Administrator-level privileges and reopen SMI-S Provider from the Start menu, or right-click and select **Run as administrator**.

  - Log in with Administrator-level privileges and manually change the directory to `C:\Program Files (x86)\NetApp\smis\pegasus\bin`.

Possible errors while loading shared libraries

- **Messages**

  ```
  Error while loading shared libraries: libssl.so 1.0.0: cannot open shared
  object file: No such file or directory.
  ```

  The `smis cimserver` status shows the cimserver is running properly, but all other `/usr/netapp/smis/pegasus/bin/cim` commands show various failure messages.

  For example, you might receive the message `cimserver not running` when executing the cimserver, or you might receive the message `/usr/netapp/smis/pegasus/bin/ cimcli: symbol lookup error: /usr/netapp/smis/pegasus/bin/cimcli: undefined symbol: _ZN7Pegasus16StringConversion21decimalStringToUint64EPKcRy` when executing cimcli. These examples are not all-inclusive.

- **Description**

  This message (and similar messages) occur when the `LD_LIBRARY_PATH` environment is not set to the installation directory.

- **Corrective action**

  Enter one of the following commands to set the `LD_LIBRARY_PATH` environment variable to the installation directory:

```
export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/usr/netapp/smis/pegasus/lib
```

```
setenv LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/usr/netapp/smis/pegasus/lib
```

Connection refused

- **Message**

```
Connection refused
```

- **Cause**

  The CIM server has not been started.

- **Corrective action**

  Navigate to the `bin` directory in the directory in which you installed NetApp SMI-S Provider, and enter the following command to verify that the CIM server is started:

```
smis cimserver status
```

  If the CIM server is not running, enter the following command:

```
smis cimserver start
```

Filer return: No ontap element in response

- **Message**

```
Filer return: No ontap element in response.
```

- **Description**

  This message occurs when the ONTAP API call times out. The default ONTAP API call timeout is 60 seconds, which might be too short in some scenarios.

- **Corrective action**

  Change the ONTAP API call timeout to a value greater than 60 seconds by setting the environment variable `ONTAPI_TIMEOUT_SEC`, and then restart SMI-S Provider.

Clone/Snapshot operations are not allowed

- **Message**

```
Clone/Snapshot operations are not allowed while LUN clone split operations are
```

going on in the volume. Please wait for some time and try again.

- **Description**

  This error occurs if you attempt to execute Snapshot operations during a LUN clone split. You cannot perform Snapshot operations in a volume where a LUN is being split, if that LUN clone split is running in the background.

- **Corrective action**

  Try your Snapshot operations after the LUN is split.

Warning 26130

Message

```
Warning (26130) Storage pool has been allocated to host group where none of hosts
in host group has access to storage array.
```

Description

This error occurs when you allocate storage capacity and grant an array access to hosts that are in a host group. With this warning, it is impossible to put virtual machines on the storage systems.

Corrective action

1. On each host machine, add the IP address of each storage system to the iSCSI Initiator application.
2. If required, on each storage system, for each host machine, create one unique igroup linked with the proper iSCSI node name from the corresponding host machine.
3. For each host machine connected to ONTAP, open the MPIO application and add the following hardware ID:

   - For ONTAP, enter **NETAPP LUN C-Mode**.
4. Reboot the host machines.
5. Remove the provider.
6. Set the storage pool again.

HostAgentAccessDenied (ID: 26263)

Message

```
Registration of storage provider smis_provider_machine for user name failed from
SCVMM_ (machine) with error code HostAgentAccessDenied. Specify valid provider,
port and user credentials for storage discovery. ID: 26263
```

Description

This message occurs when a user is specified in SCVMM to connect to SMI-S Provider but is not part of the SMIS trust store.

To enable communication between SCVMM and SMI-S Provider, a valid CIM user (Local Administrator user or Domain user of the Local Administrators group) must be added to the SMIS trust store using the `cimuser` command.

Corrective action

Add the Local Administrator user (on the SMI-S Provider machine) to the CIM server database using the `cimuser` command: `cimuser -a -u admin user -w password`. You must then use that administrative user when adding NetApp SMI-S Provider to SCVMM.

If the domain controller takes too long to authenticate the Domain user, you must use the Local Administrator user on the SMI-S Provider machine.

If the error persists, you can disable authentication in SMI-S Provider.

Cannot connect to localhost:5988

- **Message**

  ```
  Cannot connect to localhost:5988. Connection failed. Trying to connect to
  localhost:5988
  ```

- **Description**

  This message occurs when HTTPS connections are disabled or the HTTPS port is not set to 5988, or if the provider has stopped working and remains in a hanging state.

- **Corrective action**

  Verify that the values of `enableHttpsConnection` and `httpsPort` are correct:

  ```
  cimconfig -g enableHttpConnection
  ```

  ```
  cimconfig -g enableHttpsConnection
  ```

  ```
  cimconfig -g httpPort
  ```

  ```
  cimconfig -g httpsPort
  ```

  If `enableHttpConnection` or `enableHttpsConnection` is not set to `true`, enter the following commands:

  ```
  cimconfig -s enableHttpConnection -p
  ```

  ```
  smis cimserver restart
  ```

  If `httpPort` is not set to 5988, enter the following commands:

  ```
  cimconfig -s httpPort=5988 -p
  ```

  ```
  smis cimserver restart
  ```

  If the provider has stopped working and remains in a hanging state, open Task Manager and end the

process, and then restart the provider.

Cannot connect to localhost:5989

- **Message**

```
Cannot connect to localhost:5989. Connection failed. Trying to connect to
localhost:5989
```

- **Description**

This message occurs when HTTPS connections are disabled or the HTTPS port is not set to 5989, or if the provider has stopped working and remains in a hanging state.

- **Corrective action**

Verify that the values of `enableHttpsConnection` and `httpsPort` are correct:

```
cimconfig -g enableHttpsConnection
```

```
cimconfig -g httpsPort
```

If `enableHttpsConnection` is not set to "true", enter the following commands:

```
cimconfig -s enableHttpsConnection -p
```

```
smis cimserver restart
```

If `httpsPort` is not set to 5989, enter the following commands:

```
cimconfig -s httpsPort=5989 -p
```

```
smis cimserver restart
```

If the provider has stopped working and remains in a hanging state, open Task Manager and end the process, and then restart the provider.

SMI-S Provider crashes in Windows

- **Issue**

SMI-S Provider crashes in Windows.

- **Cause**

This issue occurs for a variety of reasons, documented in files generated at the time of the crash.

- **Corrective action**

Restart the provider and send the following information to technical support for further analysis:

  ◦ Dump file from the `C:\Program Files (x86)\NetApp\smis\pegasus\pegasus\logs` directory

- Log files from the `C:\Program Files (x86)\NetApp\smis\pegasus\pegasus\logs` directory

- Trace files from the `C:\Program Files (x86)\NetApp\smis\pegasus\pegasus\traces` directory

  Messages similar to the following also appear in the trace file:

  ```
  23-May-2013 20:46:36.874 INFO cimserver: createMiniDump: SMI-S Agent has
  crashed, attempting to generate a dump file

  23-May-2013 20:46:37.14 INFO cimserver: createMiniDump: Process dumped to
  C:\Program Files (x86)\netapp\smis\pegasus\logs\SMI-S Agent-8be55da-
  2011_05_23-20_46_36.dmp
  ```

- The files `version.txt` and `cimserver_current.conf` from the `C:\Program Files (x86)\NetApp\smis\pegasus\pegasus` directory

Issue entering passwords containing special characters

- **Issue**

  In English-language operating systems, using a password that contains special characters with the `smis` command does not work in a Windows environment. This issue has not been tested with non-English operating systems.

- **Cause**

  In Windows, the following characters, plus any spaces, are considered special characters and cause password input to fail if the password is not enclosed in quotation marks:

  , & ' < > ; | = ^ "

- **Corrective action**

  If a password contains spaces or special characters, enclose it in double quotes (" ") when you use it in the `smis` command. Note that the quote character (") is a special character and should never be used in your password.

Issuing passwords with special characters

```
smis add 1.2.3.4 Administrator "pass word"

smis add 1.2.3.4 Administrator "pass&word"
```

Clone technology used in SMI-S Provider

You must have a FlexClone license for SMI-S Provider to create LUN clones.

SMI-S Provider creates LUN clones on that storage system using only FlexClone technology. If you do not have a FlexClone license, SMI-S Provider does not generate clones using LUN clone technology, and it generates the following error message:

```
FlexClone license is not enabled on the storage system.
```

If you have LUN clones that were created using LUN clone technology, and the ONTAP version is then upgraded to 7.3.1 or later, you cannot use SMI-S Provider to split those clones. They must be managed by the storage system administrator.

Confirm visibility of important objects

After adding a managed storage system, you should confirm that you can see all the important logical and physical objects in NetApp SMI-S Provider.

You can use the `smis` command to see the objects that are in the NetApp SMI-S Provider CIMOM repository. For example, use `smis list` to display added storage systems, and use `smis luns` to display LUN information.

Requirement for using fileshares on Windows

When using fileshares (CIFS shares) on Windows, the volume on which the fileshare is created must be an NTFS-only volume.

If you want to create a fileshare and use it on Windows, the volume where the fileshare is created must be an NTFS-only volume. This is to avoid problems with the credentials that access the fileshare.

From System Center 2016 Virtual Machine Manager (SCVMM), you can create virtual machines (VMs) only on fileshares that were created on NTFS-only volumes. Mixed and UNIX-style volumes are not supported.

Creating a volume to be used for CIFS shares and SCVMM

When creating a volume to be used for CIFS shares and System Center Virtual Machine Manager (SCVMM), the volume has to be of NTFS type. To create the volume with NTFS, enter the following: `vol create -vserver <vserver_name> -volume <volume_name> -aggregate <aggr_name> -size<volume_size> -security-style ntfs`

Nondefault firewalls must have ports manually added as exceptions

- **Issue**

  If you are using a firewall other than the default Windows firewall, you might experience the following issues:

  - SMI-S Provider is unable to communicate with a removed SMI-S client.
  - The SMI-S client is unable to receive indications from SMI-S Provider.

- **Cause**

  This issue occurs when you use a firewall other than the default Windows firewall without first manually adding the necessary ports as exceptions.

- **Corrective action**

Add ports 427, 5988, and 5989 as exceptions to your firewall.

Cannot add a storage system using a nondefault HTTP or HTTPS port

- **Issue**

  You cannot add a storage system running HTTP or HTTPS on a nondefault port.

- **Cause**

  By default, NetApp SMI-S Provider uses port 80 for communicating with storage systems over HTTP and port 443 for communicating over HTTPS.

- **Corrective action**

  Use the following command to add a storage system that uses a port other than 80 for HTTP traffic or port 443 for HTTPS traffic:

  ```
  cimcli ci -n root/ontap ONTAP_FilerData hostName=storage_sys_ip_address
  port=non_default_port userName=storage_sys_user password=storage_sys_pwd
  comMechanism=HTTP -u agent_user -p agent_pwd-llocalhost:5989 -s
  ```

  -u, -p, -l, and -s are optional parameters.

Adding a storage system that uses port 8000 for HTTP traffic

```
cimcli ci -n root/ontap ONTAP_FilerData hostName=10.60.167.12 port=8000
userName=root password=netapp1! comMechanism=HTTP -u root -p netapp1! -l
localhost:5989 -s --timeout 180
```

No response from the server

- **Issue**

  The server does not respond when queried.

- **Cause**

  This issue occurs when there is no storage system added to the CIMOM repository.

- **Corrective action**

  Enter the following command to verify that a storage system is added:

  ```
  smis list
  ```

  If there is no storage system listed, add a storage system by entering the following command:

  ```
  smis add storage_sys storage_sys_user storage_sys_pwd
  ```

Runtime library issues

- **Issue**

  You encounter runtime library issues.

- **Corrective action**

  Install the Microsoft Visual C++ 2010 Redistributable Package (x86) from www.microsoft.com.

NetApp SMI-S Provider takes a long time to start

- **Description**

  On Windows systems, with storage systems that are already under management, when you start NetApp SMI-S Provider using the `smis cimserver` command, the command does not return until the provider local cache is populated. It waits a maximum of 15 minutes while the cache is populated, and you cannot use NetApp SMI-S Provider until it returns.

  Using the `smis cimserver` command is the recommended method of starting NetApp SMI-S Provider.

Total managed space for a storage pool (volume) discrepancy

- **Issue**

  If you are using another storage management tool, such as FilerView, you might notice a different size reported for the total managed space for a storage pool (volume) than the size returned by SMI-S Provider.

- **Cause**

  This discrepancy occurs because the size returned by SMI-S Provider includes the WAFL and Snapshot reserve, while FilerView and other tools show only the usable space, excluding WAFL and Snapshot reserve.

- **Corrective action**

  This is an expected behavior; no corrective action.

Network path not found

- **Message**

  ```
  Network path not found
  ```

- **Description**

  This message reflects a DNS issue and occurs during VM deployment on an SMB share when the host does not have a record on the DNS server.

  Typically, the domain DNS server should automatically update the host record within 24 to 48 hours when a

new host is configured in the domain. However, this update does not always automatically happen.

- **Corrective action**

    ◦ If you are a domain administrator, manually update the DNS host record.

    ◦ If you are not a domain administrator, update the host file
      (`C:\Windows\System32\drivers\etc\hosts`).

    The host file does not have a file extension (`.txt`).

Insufficient system resources exist to complete the requested service

- **Message**

```
Insufficient system resources exist to complete the requested service
```

- **Description**

    This message occurs when the maximum limit on user sessions from the same user per connection has been reached when provisioning a large number of VMs on a single file share in SCVMM.

    SCVMM creates one TCP connection per Hyper-V host, and each connection creates many sessions with two users: the computer name (COMPUTER$) of the Hyper-V host and the SCVMM "Run As account". The number of sessions with COMPUTER$ is exactly one more than number of virtual hard disks deployed in that Hyper-V host.

    The default value of `Max Same User Session Per Connection` is 50. This limit blocks a large-scale VM deployment with SCVMM. If you deploy more than 50 VMs per Hyper-V host, then you encounter this issue.

- **Corrective action**

    Increase the counter that controls the maximum number of sessions on the same connection for CIFS protocol. For example, the following command changes the maximum user sessions on the same connection from the default 50 to 100:

    ```
    SVM::*> cifs op modify -max-same-user-sessions-per-connection 100
    ```

SMB share size dropping to 0 in SCVMM

- **Issue**

    New or existing SMB 3.0 share size can drop to 0 in System Center Virtual Machine Manager (SCVMM).

- **Cause**

    If quota reinitialization takes a long time in ONTAP due to heavy I/O, new or existing SMB 3.0 share size can drop to 0 in SCVMM. When this issue occurs, new VMs cannot be provisioned on new or existing SMB 3.0 shares.

- **Corrective action**

a. Turn off the quotas.

b. Add one default quota rule of type "tree" on each volume hosting SMB shares.

c. Turn on the quotas for those volumes to which you added a default quota rule and restart SMI-S Provider.

SCVMM rescan operation failed to locate or communicate with SMI-S Provider

- **Issue**

  In rare instances, SCVMM is not able to locate SMI-S Provider.

- **Cause**

  This issue can occur if the security infrastructure is updated with new GPOs. When they take effect after the reboot of SMI-S Provider host, SCVMM host might not trust the SMI-S Provider or the host.

- **Corrective action**

  a. Uninstall SMI-S Provider and install it again.

  b. Run the rescan operation in SCVMM for the SMI-S Provider.