NetApp SMI-S Provider overview

NetApp SMI-S Provider

NetApp
October 05, 2026

This PDF was generated from https://docs.netapp.com/us-en/smis-provider/concept-overview.html on October 05, 2026. Always check docs.netapp.com for the latest.

Table of Contents

NetApp SMI-S Provider overview . . . 1
- Overview . . . 1
- What's new in 5.2.7 . . . 1
- Uses of NetApp SMI-S Provider . . . 1
- NetApp SMI-S Provider sizing and performance . . . 2
- NetApp SMI-S Provider components . . . 2
- NetApp SMI-S Provider protocols . . . 3
- How NetApp SMI-S Provider interacts with a host . . . 3
- SMI-S profiles . . . 3

NetApp SMI-S Provider overview

Overview

NetApp SMI-S Provider 5.2.7 enables you to manage and monitor storage systems and to manage LUNs and volumes of storage systems, CIMOM configuration settings, and CIM server users.

NetApp SMI-S Provider is a command-based interface that detects and manages platforms that run ONTAP software. SMI-S Provider uses Web-Based Enterprise Management (WBEM) protocols, which enable you to manage, monitor, and report on storage elements.

NetApp SMI-S Provider follows schemas standardized by two organizations:

- Distributed Management Task Force (DMTF)
- Storage Networking Industry Association (SNIA)

SMI-S Provider replaces the use of multiple managed-object models, protocols, and transports with a single object-oriented model for all components in a storage network.

What's new in 5.2.7

NetApp SMI-S Provider 5.2.7 introduces new requirements and limitations, including supported Windows and System Center Virtual Machine Manager (SCVMM) versions. Review these changes before you deploy or upgrade to this release.

- There is no upgrade path available for SMI-S Provider 5.2.7.
- You must deploy SMI-S Provider 5.2.7 as a new installation.
- SnapMirror management with Azure Site Recovery is not supported in this version of SMI-S provider.

For Windows users

- This release is not compatible with Windows Server 2012 or System Center Virtual Machine Manager (SCVMM) 2012.
- SMI-S Provider 5.2.7 supports Windows Server 2025, Windows Server 2022, Windows Server 2019, Windows Server 2016, SCVMM 2025, SCVMM 2022, SCVMM 2019 and SCVMM 2016.

Uses of NetApp SMI-S Provider

NetApp SMI-S Provider makes it easier for you to manage and monitor storage systems and to manage LUNs and volumes of storage systems.

You can use NetApp SMI-S Provider to manage storage controllers using System Center 2016, 2019, 2022 and 2025.

NetApp SMI-S Provider sizing and performance

Knowing the maximum number of systems managed by NetApp SMI-S Provider helps you understand its performance capabilities.

Sizing

NetApp SMI-S Provider can manage up to the following numbers of objects in ONTAP:

- 30 storage virtual machines (SVMs)
- 100 SVMs (without indications)
- 10 SVMs (with indications)
- 1,500 LUNs (per FlexVol volume)
- 200 CIFS file shares (per FlexVol volume)

If the FlexVol contains both qtrees and volumes, the qtrees appear as directories. You should be careful to not delete the qtrees accidentally when deleting volumes.

Performance notice

For configurations with 5,000 FlexVol volumes or 300,000 Snapshot copies, you might experience performance issues with the following `cimcli` commands:

- `cimcli ei ONTAP_Snapshot -n root/ontap`
- `cimcli ei ONTAP_SnapshotBasedOnFlexVol -n root/ontap`
- `cimcli ei ONTAP_StorageVolumeStats -n root/ontap`

The Interoperability Matrix Tool (IMT) contains the latest information about sizing and performance.

NetApp SMI-S Provider components

NetApp SMI-S Provider consists of three components that enable you to manage and monitor storage systems: CIMOM, provider objects, and a repository.

- **CIMOM**

  This is the foundation for NetApp SMI-S Provider. CIMOM collects, validates, and authenticates each application request and then responds to the application. It becomes a conduit for each request by invoking the appropriate provider to handle each request.

- **Provider objects**

  When a host issues a command or query to SMI-S Provider, CIMOM loads a shared library object, invokes it to handle a request, and returns the resulting information to the host.

  Windows hosts use DLL objects.

- **Repository**

CIMOM uses a flat-file database for its repository. It stores persistent data required at the CIM level.

NetApp SMI-S Provider protocols

NetApp SMI-S Provider uses CIM-XML encoding over HTTPS and Service Location Protocol (SLP).

- **CIM-XML encoding over HTTPS**

  Protocol that exchanges information between a Web-Based Enterprise Management (WBEM)-enabled management client and the CIMOM server. CIM-XML encoding over HTTPS uses the CIM protocol as the payload and HTTPS as the transport. HTTP is also supported.

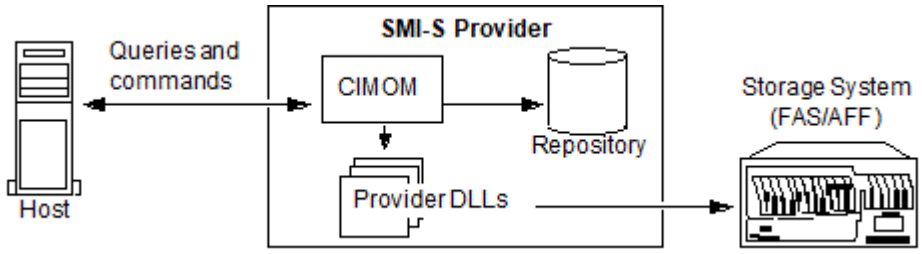
- **SLP**

  Discovery protocol that detects WBEM services within a LAN.

How NetApp SMI-S Provider interacts with a host

When a client application on a host discovers the CIMOM server by using SLP (CIM-XML encoding over HTTP), the client then queries the CIMOM for shared objects (objects modeled in the CIM language). The CIMOM loads shared objects and queries the storage system by using device-specific APIs for the requested information.

The following illustration shows how NetApp SMI-S Provider interacts with a WBEM management client when SMI-S Provider receives a query or command.



SMI-S profiles

SMI-S Provider uses profiles and subprofiles that comply with SMI-S v1.7. For information about SMI-S v1.7, see the SNIA: Technology Standards and Software page.

Copyright information

Copyright © 2026 NetApp, Inc. All Rights Reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system—without prior written permission of the copyright owner.

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

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

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

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

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

Trademark information

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