



# **SnapManager for SAP deployment considerations**

## SnapManager for SAP

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# SnapManager for SAP deployment considerations

Before deploying SnapManager in your environment, you should know the other applications and technologies required for different operations.

The following table lists the different applications and technologies:

Applications and technologies	Details
Data ONTAP	SnapManager leverages NetApp tools and technologies, including Snapshot copies.
SnapDrive for Windows	SnapManager uses the SnapDrive features. You must install SnapDrive before running the SnapManager services. SnapManager handles all the interactions with SnapDrive. SnapDrive for Windows must be configured correctly for your storage system and protocol choices.
SnapRestore	SnapManager reduces the mean time to recover a database by using SnapRestore. Each storage system should have a SnapRestore license.
FlexClone	FlexClone is a licensed feature in Data ONTAP.
FC and iSCSI protocols	You need to have the licensed versions of the appropriate protocols.

To use BR\*Tools commands, the appropriate version of SAP BR\*Tools must be installed for your version of Oracle.

## Related information

[SnapManager for SAP Best Practices: media.netapp.com/documents/tr-3823.pdf](http://media.netapp.com/documents/tr-3823.pdf)

## Requirements for running SnapManager

Before deploying SnapManager in your environment, you should know the different requirements.

Before using SnapManager, you must review the compatibility matrices for all the required products. You must also review the following:

- SnapManager and SnapDrive compatibility matrix in the interoperability section for the latest version and patch information for all hosts, storage systems, and other components listed in this section.
- The Configuration Guide for NetApp FCP and iSCSI products.



SnapManager requires specific Oracle versions on some platforms.

See the documentation kit for more information about the recommended configurations for the host and storage systems.



Contact your sales representative if you need a SnapManager configuration that is not mentioned in the documentation kit.

### Related information

[Interoperability Matrix: support.netapp.com/NOW/products/interoperability](http://support.netapp.com/NOW/products/interoperability)

## Supported host hardware

Consider the memory, disk space, and CPU requirements.

SnapManager requires the following configuration:

Hardware function	Hardware requirements
Memory	<p>The SnapManager server requires 128 MB of memory.</p> <p>The graphical user interfaces requires a minimum 512 MB RAM to run.</p> <p>Each operation run by the SnapManager server requires 48 MB of additional memory while it is running.</p>
Disk space	128 MB available disk space for the graphical user application (minimum).
CPU speed	1.0 GHz processor speed (minimum).

## Supported general configurations

Before installing SnapManager, you must know the general configuration requirements.

SnapManager supports the following general configurations:

- A non-clustered configuration where a single host is connected to a single storage system
- One SnapManager server instance per host

For information about all storage types and versions supported by SnapManager, see the SnapManager and SnapDrive Compatibility Matrix.

## Clustered configurations

SnapManager operates in cluster configurations.

SnapManager supports the same host cluster and configurations that the SnapDrive product and Host Utilities Kit support.

SnapManager also supports non-clustered configurations where a single host is connected to a single storage system, supported host clusters, and storage systems running Data ONTAP controller failover.

## Database version support and configuration overview

You must know the different database versions and configurations supported with SnapManager. You must perform basic database layout and configuration setup to ensure successful operations.

SnapManager for SAP integrates with Oracle versions 10gR2 (10.2.0.5), 11gR2 (11.2.0.1 and 11.2.0.2), and 12c; with native Oracle technology such as Recovery Manager (RMAN); and across fibre channel (FC) and Internet Small Computer System Interface (iSCSI) protocols.



The Oracle Database 9i is not supported from SnapManager 3.2 and 10g R2 (earlier than 10.2.0.5) is not supported from SnapManager 3.3.1.

### General layout and configuration

You can find information about the recommended general database layouts and storage configurations to avoid issues related to disk groups, file types, and tablespaces.

- Do not include files from more than one type of SAN file system in your database.

All files making up a database must reside on the same type of file system.

- SnapManager requires a multiple of 4K block size.

The following are some guidelines for volume separation:

- Data files for only one database must be in the volume.
- You must use separate volumes for each of the following file classifications: database binaries, data files, online redo log files, archived redo log files, and control files.
- You do not need to create a separate volume for temporary database files, because SnapManager does not back up temporary database files.

SAP uses a standard layout for Oracle database installations. In this layout, SAP places copies of the Oracle control file in E:\oracle\SID\origlogA, E:\oracle\SID\origlogB, and E:\oracle\SID\sapdata1 file systems.



Because BR\*Tools backups include the Oracle and SAP profiles located in the database subdirectory of the Oracle installation, the Oracle installation must be located on storage.

In the case of a new installation, you can modify the location of the control files by using SAPINST and move the control file normally placed in the sapdata1 file system to a file system that does not reside in the same volume as the data files. (SAPINST is the tool that SAP provides for installing SAP systems.)

For more information, see the *SnapManager for SAP Best Practices*.

## Related information

SnapManager for SAP Best Practices: [media.netapp.com/documents/tr-3823.pdf](http://media.netapp.com/documents/tr-3823.pdf)

## Sample database volume layouts

You can refer to sample database volume layouts for help in configuring your database.

### Single-instance databases

File types	Volume names	Dedicated volume for file types	Automatic Snapshot copies
Oracle binaries	<i>orabin_ host name</i>	Yes	On
Data files	<i>oradata_ sid</i>	Yes	Off
Temporary data files	<i>oratemp_ sid</i>	Yes	Off
Control files	<i>oracntrl01_ sid</i> (Multiplexed)  <i>oracntrl02_ sid</i> (Multiplexed)	Yes	Off
Redo logs	<i>oralog01_ sid</i> (Multiplexed)  <i>oralog02_ sid</i> (Multiplexed)	Yes	Off
Archive logs	<i>oraarch_ sid</i>	Yes	Off

## Limitations when working with SnapManager

You must be aware of the scenarios and limitations that might affect your environment.

### Limitations related to database layouts and platforms

- SnapManager supports control files on a file system and does not support control files on raw devices.
- SnapManager operates in a Microsoft clustering (MSCS) environment but does not recognize the state of the MSCS configuration (active or passive) and does not transfer active management of a repository to a standby server in an MSCS cluster.
- The repository database might exist on a host that can be accessed by using more than one IP address.

If the repository is accessed by using more than one IP address, then the schedule file is created for each of the IP addresses. If the schedule backup is created for a profile (for example, profile A) under one of the IP addresses (for example, IP1), then the schedule file for only that IP address gets updated. If profile A is accessed from another IP address (for example, IP2), the scheduled backup is not listed because the

schedule file of IP2 does not have an entry for the schedule that was created under IP1.

You can wait for the schedule to be triggered from that IP address and the schedule file to be updated, or you can restart the server.

### Limitations related to SnapManager configuration

- SnapManager supports databases on MultiStore storage systems with the following requirements:
  - You must configure SnapDrive to set passwords for MultiStore storage systems.
  - SnapDrive cannot create a Snapshot copy of a LUN or file residing in a qtree in a MultiStore storage system if the underlying volume is not in the same MultiStore storage system.
- SnapManager does not support accessing two SnapManager servers running on different ports from a single client (both from the CLI or GUI).

The port numbers should be the same on the target and remote hosts.

- SnapManager operations fail and you cannot access the GUI when the repository database is down.

You must verify that the repository database is running when you perform any SnapManager operations.

- SnapManager does not support Live Partition Mobility (LPM) and Live Application Mobility (LAM).
- SnapManager does not support Oracle Wallet Manager and Transparent Data Encryption (TDE).
- SnapManager does not support MetroCluster configurations in raw device mapping (RDM) environments because MetroCluster configurations are yet to be supported by Virtual Storage Console (VSC).

### Limitations related to profile management

- If you update the profile to separate the archive log backups, then you cannot perform a rollback operation on the host.
- If you enable a profile from the GUI to create archive log backups, and later try to update the profile by using the Multi Profile Update window or Profile Update window, then you cannot modify that profile to create a full backup.
- If you update multiple profiles in the Multi Profile Update window and some profiles have the **Backup Archivelogs separately** option enabled and other profiles have the option disabled, then the **Backup Archivelogs separately** option is disabled.
- If you update multiple profiles and some profiles have the **Backup Archivelogs separately** option enabled and other profiles have the option disabled, then the **Backup Archivelogs separately** option in the Multi Profile Update window is disabled.
- If you rename the profile, then you cannot roll back the host.

### Limitations related to rolling upgrade or rollback operations

- If you try to install an earlier version of SnapManager for a host without performing the rollback operation on the host in the repository, you might not be able to do the following:
  - View the profiles that were created in earlier or later versions of SnapManager for the host.
  - Access backups or clones that were created in earlier or later versions of SnapManager.
  - Perform rolling upgrade or rollback operations on the host.
- After you separate the profiles to create archive log backups, you cannot perform a rollback operation on the related host repository.

## Limitations related to backup operations

- During recovery, if the backup is already mounted, SnapManager does not mount the backup again and uses the already mounted backup.

If the backup is mounted by a different user and you do not have access to the previously mounted backup, then the other user must provide you the permission.

All archive log files have read permission for users assigned to a group; you might not have the access permission to the archive log file, if the backup is mounted by a different user group. Users can give permission to the mounted archive log files manually, and then retry the restore or recovery operation.

- SnapManager sets the backup state as “PROTECTED”, even when one of the Snapshot copies of the database backup is transferred to the secondary storage system.
- You can use the task specification file for scheduled backup only from SnapManager 3.2 or later.
- If the repository database is pointing to more than one IP address and each IP address has a different host name, then the backup scheduling operation is successful for one IP address but fails for the other IP address.
- In ONTAP environments, SnapManager does not support multiple secondary destinations for a source volume.

## Limitations related to restore operations

- SnapManager does not support restoring database backups by using fast restore or volume-based restore operations in Windows.

SnapManager 3.3 displays an error message when you try to perform a fast restore operation from the SnapManager CLI.

## Limitations related to clone operations

- SnapManager 3.3 or later does not support using the clone specification XML file created in the releases before SnapManager 3.2.
- If temporary tablespaces are located in a different location from the datafiles location, a clone operation creates the tablespaces in the datafiles location.

However, if temporary tablespaces are Oracle Managed Files (OMFs) that are located in a different location from the datafiles location, the clone operation does not create the tablespaces in the datafiles location. The OMFs are not managed by SnapManager.

- SnapManager fails to clone a RAC database if you select the `-resetlogs` option.

## Limitations related to archive log files and backups

- SnapManager does not support pruning of archive log files from the flash recovery area destination.
- SnapManager does not support pruning of archive log files from the standby destination.
- The archive log backups are retained based on the retention duration and default hourly retention class.

When the archive log backup retention class is modified by using the SnapManager CLI or GUI, the modified retention class is not considered for backup because archive log backups are retained based on retention duration.



- If you delete the archive log files from the archive log destinations, the archive log backup does not include archive log files older than the missing archive log file.

If the latest archive log file is missing, then the archive log backup operation fails.

- If you delete the archive log files from the archive log destinations, the pruning of archive log files fail.
- SnapManager consolidates the archive log backups even when you delete the archive log files from the archive log destinations or when the archive log files are corrupted.

### **Limitations related to changing of target database host name**

The following SnapManager operations are not supported when you change the target database host name:

- Changing the target database host name from the SnapManager GUI.
- Rolling back of the repository database after updating the target database host name of the profile.
- Simultaneously updating multiple profiles for a new target database host name.
- Changing the target database host name when any SnapManager operation is running.

### **Limitations related to the SnapManager CLI or GUI**

- The SnapManager CLI commands for the `profile create` operation that are generated from the SnapManager GUI do not have history configuration options.

You cannot use the `profile create` command to configure history retention settings from the SnapManager CLI.

- SnapManager does not display the GUI in Mozilla Firefox when there is no Java Runtime Environment (JRE) available on the Windows client.
- SnapManager 3.3 does not display the SnapManager GUI in Microsoft Internet Explorer 6 on Windows Server 2008 and Windows 7.
- While updating the target database host name using the SnapManager CLI, if there are one or more open SnapManager GUI sessions, then all of the open SnapManager GUI sessions fail to respond.
- When you install SnapManager on Windows and start the CLI in UNIX, the features that are not supported on Windows are displayed.

### **Limitations related to SnapMirror and SnapVault**

- In some scenarios, you cannot delete the last backup associated with the first Snapshot copy when the volume has a SnapVault relationship established.

You can delete the backup only when you break the relationship. This issue is because of an ONTAP restriction with base Snapshot copies. In a SnapMirror relationship the base Snapshot copy is created by the SnapMirror engine, and in a SnapVault relationship the base Snapshot copy is the backup created by using SnapManager. For each update, the base Snapshot copy points to the latest backup created by using SnapManager.

### **Limitations related to Data Guard Standby databases**

- SnapManager does not support Logical Data Guard Standby databases.
- SnapManager does not support Active Data Guard Standby databases.

- SnapManager does not allow online backups of Data Guard Standby databases.
- SnapManager does not allow partial backups of Data Guard Standby databases.
- SnapManager does not allow restoring of Data Guard Standby databases.
- SnapManager does not allow pruning of archive log files for Data Guard Standby databases.
- SnapManager does not support Data Guard Broker.

### Related information

[Documentation on the NetApp Support Site](#)

## SnapManager features and Oracle technologies not supported on Windows

SnapManager does not support some SnapManager features, platforms, and Oracle technologies on Windows.

SnapManager does not support the following features, platforms, and Oracle technologies:

- Policy-based data protection available with the integration of Protection Manager
- Role-based access control (RBAC) available with Operations Manager
- Fast restore or volume-based SnapRestore (VBSR)
- Clone split operation
- Oracle Real Application Clusters (RAC) using any protocol
- Oracle Automatic Storage Management (ASM) using any protocol
- Oracle Direct NFS (dNFS)
- Itanium-64 platforms



The supported hardware platforms for the Windows Operating System are 32-bit and 64-bit (Windows x86 and Windows x86\_64).

## SnapManager limitations for clustered Data ONTAP

You must know the limitations for some functionalities and SnapManager operations if you are using clustered Data ONTAP.

The following functionalities are not supported if you are using SnapManager on clustered Data ONTAP:

- Raw device mapping (RDM) logical unit number (LUN) for storage virtual machines (SVM)
- A database in which one LUN belongs to a system running Data ONTAP operating in 7-Mode and the other LUN belongs to a system running clustered Data ONTAP
- SnapManager for SAP does not support migration of a Vserver, which is not supported by clustered Data ONTAP
- SnapManager for SAP does not support the clustered Data ONTAP 8.2.1 functionality to specify different export policies for volumes and qtrees

# Limitations related to Oracle Database

Before you start working with SnapManager, you must know the limitations related to Oracle Database.

The limitations are as follows:

- SnapManager supports Oracle version 10gR2 and does not support Oracle 10gR1 as the repository or target database.
- SnapManager does not support Oracle Cluster File System (OCFS).
- Support for Oracle Database 9i is deprecated from SnapManager 3.2.
- Support for Oracle Database 10gR2 (earlier than 10.2.0.5) is deprecated from SnapManager 3.3.1.



Identify the different versions of Oracle databases supported by referring to the Interoperability Matrix.

## Related information

[Interoperability Matrix](#)

## Deprecated versions of Oracle database

Oracle database 9i is not supported by SnapManager 3.2 or later, and Oracle database 10gR2 (earlier than 10.2.0.4) is not supported by SnapManager 3.3.1 or later.

If you are using Oracle 9i or 10gR2 (earlier than 10.2.0.4) databases and want to upgrade to SnapManager 3.2 or later, you cannot create new profiles; a warning message is displayed.

If you are using Oracle 9i or 10gR2 (earlier than 10.2.0.4) databases and want to upgrade to SnapManager 3.2 or later, you must perform one of the following:

- Upgrade Oracle 9i or 10gR2 (earlier than 10.2.0.4) databases to either Oracle 10gR2 (10.2.0.5), 11gR1, or 11gR2 databases, and then upgrade to SnapManager 3.2 or 3.3.

If you are upgrading to Oracle 12c, then you must upgrade to SnapManager 3.3.1 or later.



Oracle database 12c is supported only from SnapManager 3.3.1.

- Manage the Oracle 9i databases using a patch version of SnapManager 3.1.

You can use SnapManager 3.2 or 3.3 if you want to manage Oracle 10gR2, 11gR1, or 11gR2 databases and use SnapManager 3.3.1 or later if you want to manage Oracle 12c databases along with the other supported databases.

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