



SAP R/3 SAPDB/Windows®/MSCS: Integrating with a NetApp® Filer

by Marco Schoen,
SAP Competence Center, Network Appliance, Inc.
August, 2003 | TR 3175

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TECHNICAL
REPORT

Network Appliance, a pioneer and industry leader in data storage technology, helps organizations understand and meet complex technical challenges with advanced storage solutions and global data management strategies.

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1. Purpose and Scope

This document describes the requirements and the configuration for installing a SAP R/3 4.6C SR2 with SAPDB database on a Windows server or on a Windows Cluster (MSCS) using SnapDrive™ software. Please also read the *SnapDrive Installation and Administration Guide*, the SAP installation guide *R/3 Installation on Windows NT: SAPDB*, and SAP Note 319835. The described configuration was validated with SAP R/3 4.6C SR2, SAP WAS 6.20 and SnapDrive 2.x/3.0 (iSCSI&FCP).

2. Requirements

For the most up-to-date SnapDrive system requirements, see the NOW™ (NetApp on the Web) site at <http://now.netapp.com/NOW/cgi-bin/software/>.

2.1. Filers

You have to use a filer with Gigabit Ethernet card (iSCSI) or with HBAs (LUN). The following licenses are necessary:

- SnapRestore®
- SnapDrive (iSCSI or FCP)

Also the option `waf1_map_nt_admin_to_root` must be enabled. Integrate the filer into the same domain as the servers.

2.2. Servers

2.2.1. Standard Installation

If iSCSI is used, one Gigabit Ethernet card (storage network) and at least one additional Ethernet card (server LAN/user LAN) are necessary. Please use the latest Gigabit Ethernet driver software. For FCP, one HBA is used instead of the gigabit card. Install the Windows servers as a domain member as also suggested by SAP.

2.2.2. Cluster Installation

Each server in a Microsoft Cluster must have at least one Gigabit Ethernet (iSCSI) card or one HBA (FCP) (storage network) and two additional Ethernet cards at least. Please use the latest Gigabit Ethernet driver software. Install the Windows servers as domain members.

2.3. Network

We recommend using a dedicated network to connect the servers to the filer. Gigabit Ethernet cards have to be used to connect the systems over iSCSI. Don't use these connections for other services, for example, as a cluster resource.

If FCP is used, a filer cluster and FCP switches are needed to connect the servers.

In a cluster environment the other two network cards are needed for the private cluster network (heartbeat) and the public cluster network.

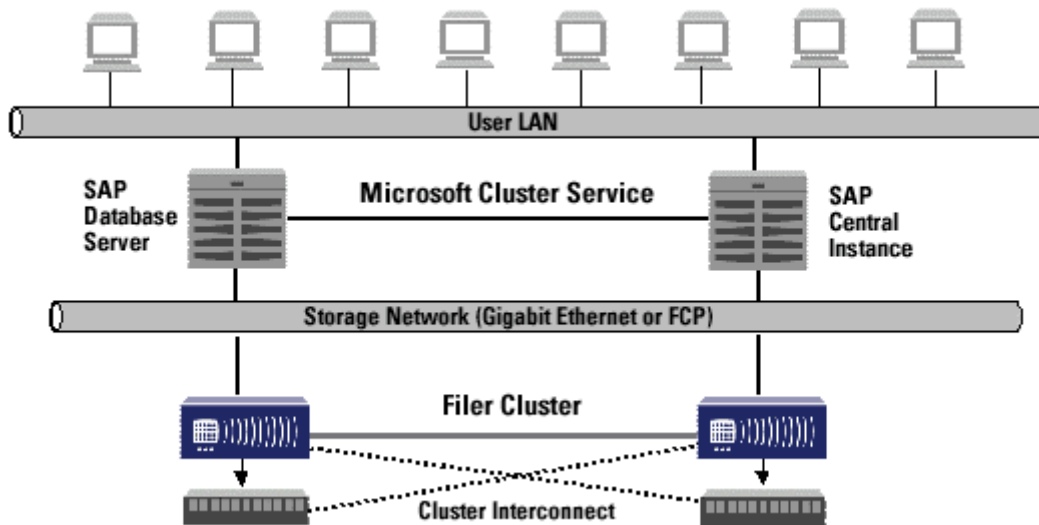


Figure 1. SAP Cluster Solution

3. Installation and Configuration

3.1. Standard Installation

For a SAP R/3 SAPDB/Windows installation, at least three dedicated LUNs are needed:

- One LUN for the SAP devspaces/volumes
- One LUN for log devspaces/volumes, the system devspace/volumes, the SAPDB executables, and the SAPDB configuration
- One LUN for the SAP executables

For security reasons, the data devspaces and the log devspaces must be separated physically. Therefore, two new volumes have to be created, configured, and shared on the filer before the

SnapDrive software can be installed and configured on the server. After the installation and configuration of SnapDrive, the SAP installation can be started.

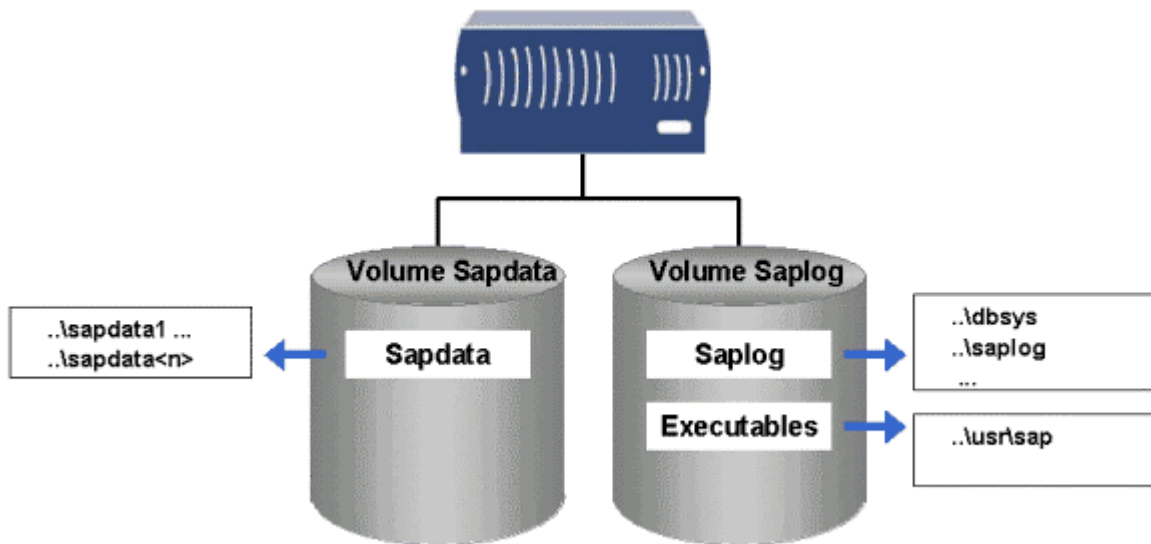


Figure 2. Standard Disk Configuration

3.1.1. Volume Configuration

Two new volumes have to be created on the filer. Please ensure that enough disks are used, depending on your performance needs.

After the volume creation, set the following option on each volume for use with SnapDrive:

- no_atime_update on

Now create a CIFS share to the root of these volumes. Ensure that the qtree styles of these volumes are set to UNIX@.

3.1.2. Installation and Configuration of SnapDrive

Install and configure SnapDrive on the server as described in the *SnapDrive Installation and Administration Guide*. Also create the three dedicated LUNs as described in the same document. Please create and connect the LUNs using the IP address of the filer's Gigabit Ethernet interface (iSCSI). Please read "Preparing to Install SnapDrive" in the *SnapDrive Installation and Administration Guide* before you start.

3.1.3. SAP Installation

Please install your SAP system as described in the SAP installation guide *R/3 Installation on Windows NT: SAPDB*. Please turn off SAPDBs load balancing of the data devspaces/volumes by setting the parameter `_FBM_LOW_IO_RATE` to 0. This parameter has existed since SAPDB version 7.3.0 Build 034. If this parameter isn't set to 0 or an older SAPDB version is used, much more disk space is needed for using Snapshot™ copies.

3.2. Cluster Installation

A SAP R/3 SAPDB/Windows MSCS installation needs at least four shared disks, which are provided by SnapDrive (shared LUNs):

- One shared LUN for the SAP executables
- One shared LUN for the SAP data devspaces/volumes
- One shared LUN for the SAP log devspaces/volumes, the system devspace/volumes, the SAPDB executables, and the SAPDB configuration
- One shared LUN for the cluster quorum disk

For security reasons, the data devspaces and the log devspaces must be separated physically. Therefore, two new volumes must be created, configured, and shared on the filer before the SnapDrive software can be installed and configured on the cluster nodes. After the installation and configuration of SnapDrive, the Microsoft Cluster Service can be configured and the SAP installation can be started.

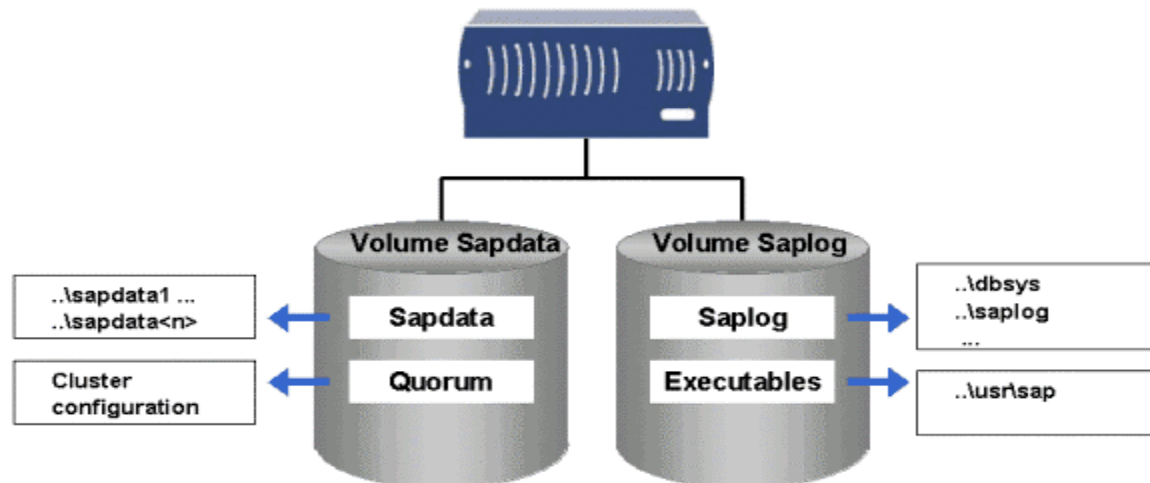


Figure 3. Cluster Disk Configuration

3.2.1. Volume Configuration

Two new volumes have to be created on the filer. Please ensure that enough disks are used, depending on your performance needs.

After the volume creation, set the following option on each volume for use with SnapDrive:

- no_atime_update on

Now create a CIFS share to the root of these volumes. Ensure that the qtree styles of these volumes are set to UNIX.

3.2.2. Installation and Configuration of SnapDrive

Install and configure SnapDrive on both cluster nodes as described in the *SnapDrive Installation and Administration Guide*. Also create the four shared LUNs as described in the same document. Please

create and connect the LUNs using the IP address of the filer's Gigabit Ethernet interface (iSCSI).

Please read "Preparing to Install SnapDrive" in the *SnapDrive Installation and Administration Guide* before you start.

3.2.3. Cluster Configuration

Configure the cluster using the previously created LUNs as shared disks.

3.2.4. SAP Installation

Please install your SAP system as described in the SAP installation guide *R/3 Installation on Windows NT: SAPDB* and SAP Note 319835. Please turn off SAPDBs loadbalancing of the data devspaces/volumes by setting the parameter `_FBM_LOW_IO_RATE` to 0. This parameter exists since SAPDB version 7.3.0 Build 034. If this parameter isn't set to 0 or an older SAPDB version is used, much more disk space is needed for using Snapshot copies.

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