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SAP R/3 DB2 UDB/Windows®/MSCS: Integrating with a NetApp® Filer

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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 with DB2 UDB Database on a Windows server or on a Windows Cluster (MSCS) using SnapDrive™ software. Please also read the *SnapDrive Installation and Administration Guide* and the SAP installation guides *R/3 Installation on Windows: DB2 UDB for UNIX & Windows* and *MSCS SAP Installation: DB2 for UNIX & Windows*. 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 must use a filer with Gigabit Ethernet card (iSCSI) or with HBAs (FCP). 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.

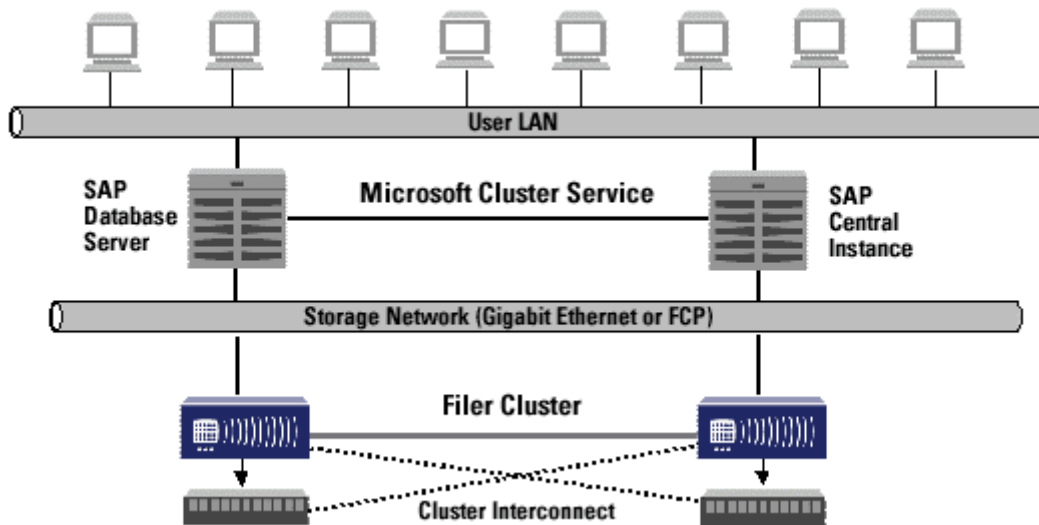


Figure 1. SAP Cluster Solution

3. Installation and Configuration

3.1. Standard Installation

For a SAP R/3 DB2 UDB/Windows installation at least three dedicated LUNs are needed:

- One LUN for the database files (SAPDATAs) and the DB2 temp tablespaces
- One LUN for the online and offline log files
- One LUN for the SAP and DB2 executables (including the database instance directory)

For security reasons, the data files and the log files 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.

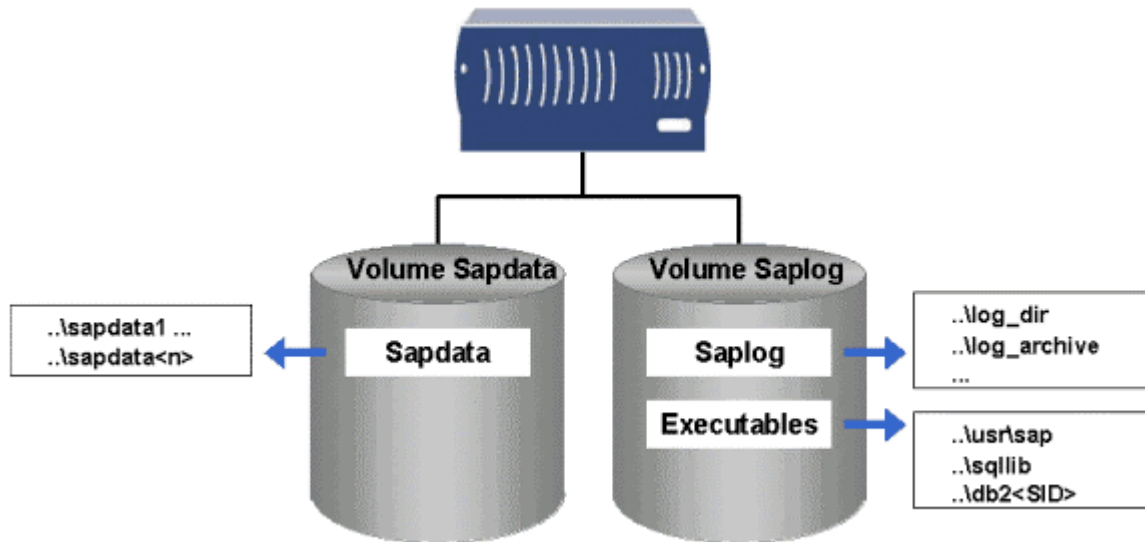


Figure 2. Standard Disk Configuration

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: DB2 UDB for UNIX & Windows*.

3.2. Cluster Installation

A SAP R/3 DB2 UDB/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 database files (SAPDATAs), the DB2 temp tablespaces, and the database instance directory
- One shared LUN for the online and offline log files
- One shared LUN for the cluster quorum disk

For security reasons, the data files and the log files 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.

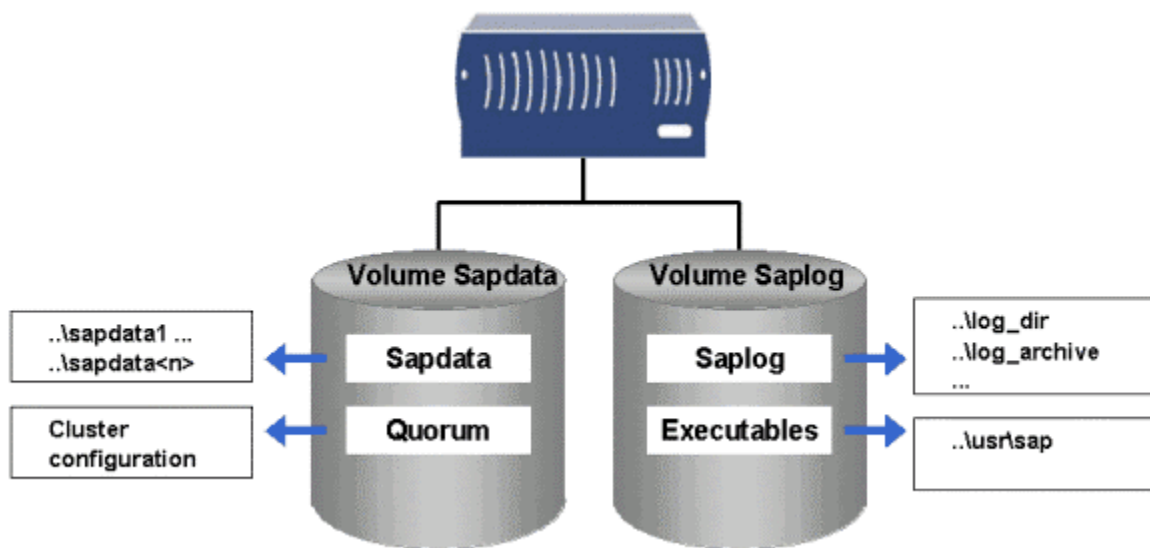


Figure 3. Cluster Disk Configuration

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 guides *R/3 Installation on Windows: DB2 UDB for UNIX & Windows* and *MSCS SAP Installation: DB2 for UNIX & Windows*.

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