

New Configuration of Multiple SAP Systems with Windows Server 2008 (R2) Failover Clustering



Applies to:

SAP systems based on SAP NetWeaver 7.0 SR3, SAP NetWeaver 7.0 EHP1, and SAP NetWeaver 7.1, or higher that are released for Windows Server 2008 (R2).

Summary

The Windows Server 2008 (R2) operating system with its Windows Server Failover Clustering feature lets you use multiple sapmnt file shares. This makes the installation of multiple clustered SAP systems in one failover cluster much easier than on Windows Server 2003. This article provides a short overview of this feature with multiple sapmnt file shares.

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Updated on: 16 December 2011

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Until SAP NetWeaver '04, SAP supported only **one** clustered SAP system in **one** MSCS cluster with two MSCS nodes. This restriction was due to the fact that the cluster resource file share `sapmnt` could only be assigned to one cluster group at a time and could only point to one shared drive. However, every additional clustered SAP system has to be configured in a separate cluster group with a shared disk, a unique IP and network name, as well as a `sapmnt` file share. Since a `sapmnt` file share already exists pointing to the shared disk of the first clustered SAP system, you cannot add additional `sapmnt` file shares to the other MSCS groups.

For SAP systems based on SAP NetWeaver 7.0 or higher, SAP introduced a new cluster configuration, called "multi-SID", which uses the "junction" mechanism available as of Windows Server 2003. This is similar to UNIX symbolic links. With Windows Server 2003 there is no difference between a file share pointing to a local disk and a file share pointing to a shared disk. There is also no difference in accessing the file shares with the physical host name or the virtual network name, as long as the network name cluster resource is online on this physical host.

This new cluster configuration solves the `sapmnt` problem by using additional `usr\sap` folders on a local disk on all MSCS nodes with `saploc` and `sapmnt` file shares pointing to the local disk. The underlying directory structure is created with junctions that are pointing from the local disk to the specific directories on the shared disks on all nodes (see Figure 1).

To use local directories with junctions, which you have to manually keep synchronized on both cluster nodes, is much more complex than a single cluster configuration. Note that on Windows Server 2003, SAP no longer recommends new installations of multiple SAP systems with one or more MSCS cluster(s) and two or more MSCS nodes, due to the complexity of these systems.

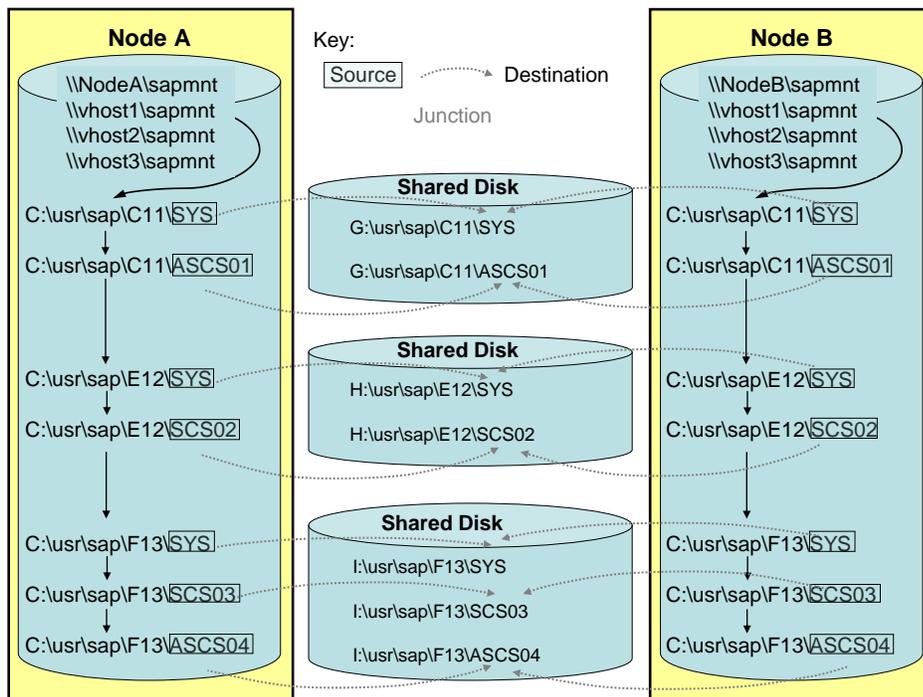


Figure 1: Cluster Configuration of Three SAP Systems on Windows Server 2003 Using Links

With the Windows Server Failover Clustering feature in the Windows Server 2008 (R2) operating system, the installation of multiple clustered SAP systems in one failover cluster is much easier than on Windows Server 2003. On Windows Server 2008 (R2), multiple SAP systems in a failover cluster have the same configuration as a single SAP system. You no longer have the complex junction-based local directory structure on every cluster node, as was required on Windows Server 2003.

On Windows Server 2008 (R2), the file shares behave completely differently from the server clusters on Windows Server 2003. With the Windows Server Failover Clustering feature on Windows Server 2008 (R2), you can only access file shares pointing to local disks with the physical computer name. To be able to define file shares pointing to shared disks, a "client access point" (one IP address associated with one network name cluster resource) must already exist in the failover cluster group to which the shared disk belongs. You can only access file shares pointing to shared disks with the network name that belongs to the same failover cluster group.

This lets you create multiple file shares with the same file share name in a failover cluster, assuming the file shares belong to different cluster groups (see Figure 2).

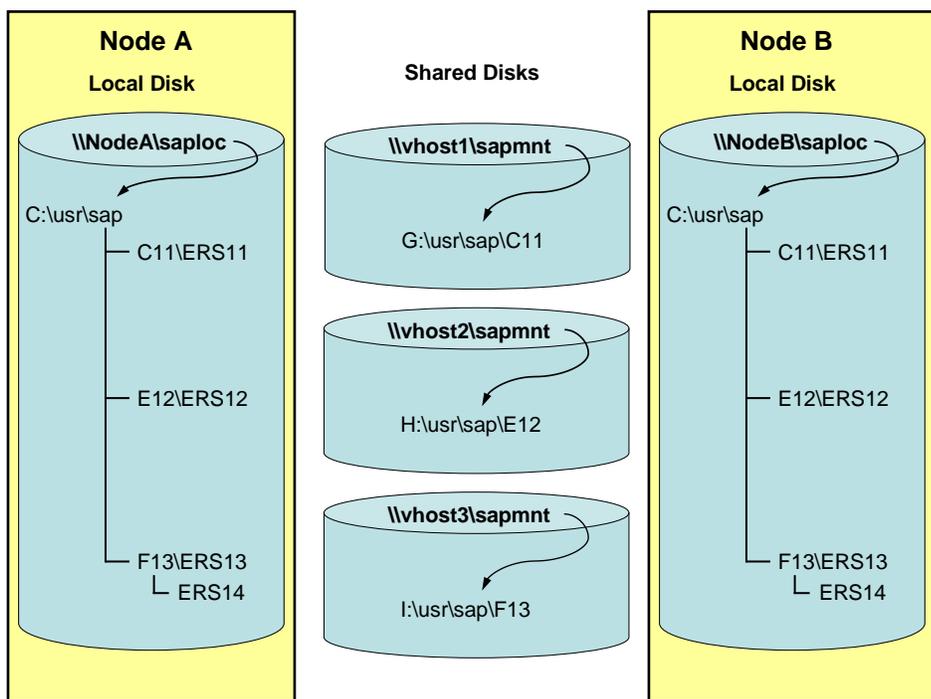


Figure 2: Cluster Configuration of Three SAP Systems on Windows Server 2008 (R2) Using Multiple `sapmnt` File Shares

Related Content

- [MSCS Configuration and Support Information for SAP NetWeaver '04 and SAP NetWeaver 7.0 Systems](#)
- SAP Note [1634991](#) *How to install an ASCS or SCS instance on more than 2 cluster nodes?* (SMP Login required)
- Multi-SID installation guides
As of SAP NetWeaver 7.0 EHP1 SR1, the procedure for installing multiple SAP systems in a high-availability environment for Oracle, SQL Server, DB6, is included in the relevant installation guides. Before, there were separate guides available.
You find the installation guides on SAP Service Marketplace (SMP Login required) at <http://service.sap.com/instguides> → *SAP NetWeaver* → *<release>* → *Installation* → *Installation - SAP NetWeaver Systems*

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