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Requirements for the SAP System Hosts

This section provides information about the hardware and software requirements for the:

- ABAP central services instance (ASCS)
- Central services instance (SCS)
- Database instance
- Primary application server instance
- Additional application server instance

> **Note**
> The additional application server instance is optional in a non-HA system, but mandatory in an HA system.

- **High Availability only:** Enqueue Replication Server instance (ERS)
- SAP Host Agent

General Requirements for a High-Availability System

- Windows Server 2012 (R2) and higher:
  1. Check that your cluster hardware is certified for Windows Server 2012 (R2), Windows 2016, or Windows Server 2019 and has the corresponding Windows Server logo.
  2. You must validate your failover cluster configuration by running the command `test-cluster` in a PowerShell.

     The **Failover Cluster Validation Report** must not show any errors.
- Windows Server 2008 (R2):
  1. Check that your cluster hardware is certified for Windows Server 2008 (R2) and has the Windows Server 2008 (R2) logo.
  2. You must validate your failover cluster configuration by running the **Validate a Configuration Wizard**, which is included in the **Failover Cluster Management** snap-in. This must not show any errors.
- The cluster nodes of the cluster must be connected by a private and public network:
  - The public network enables communication from the cluster nodes of the cluster to other resources in the local area network (LAN).
  - The private network enables internal communication between the cluster nodes. In particular, it enables the Cluster Service running on all cluster nodes to regularly exchange messages on the state of the cluster nodes so that the failure of resources is quickly detected.
- Each of the cluster nodes in the cluster must have its own local disks and have access to an external file share or shared disks that can be reached by the cluster nodes via a shared bus.

  For more information about the distribution of components to local and shared disk, see Distribution of SAP System Components to Disks for Failover Clustering.
- All disk controllers must be able to support hardware-based RAID.

> **Caution**
> You **cannot** use a host with a domain controller as a cluster node.

Hardware and Software Requirements

The following tables show the hardware and software requirements. Most of the requirements are valid for every installation host whereas some requirements are instance-specific and are marked accordingly.

> **Note**
>
> In addition to the hardware and software requirements listed here, make sure that you also consult the hardware and software requirements provided by IBM at http://www.ibm.com/support/docview.wss?uid=swg27038033 .
>
> If you are planning to install an SAP BW system with BLU Acceleration, note that the hardware and software requirements for BLU Acceleration are higher than those listed in this section. Therefore, make sure that you read the *Hardware and Software Requirements for BLU Acceleration* chapter in the SAP BW Administration Guide (see Online Information from SAP).

> **Note**
>
> - The listed values are sufficient for **development systems** or **quality assurance systems** but **not** for **production systems**.
> - If you install several SAP instances on one host, you need to add up the requirements.
> - If you install **multiple** SAP systems in one Failover Cluster, make sure that together with your hardware partner you have set up the correct sizing for your system configuration.
> - For up-to-date information on the released and supported operating system versions for your SAP product and database, see the **Product Availability Matrix (PAM)** at:
>
>   http://support.sap.com/pam.

Hardware Requirements

Hardware Requirement	Requirement	How to Check
Minimum disk space	• Central services instance (SCS) (not including paging file): 5 GB (x64) 8 GB (IA64) • ABAP central services instance (ASCS) (not including paging file): 5 GB (x64) 8 GB (IA64) ◦ In addition, you require 4 GB (x64), or 8 GB (IA64) per additional platform. ◦ If you install the ASCS instance with an integrated SAP Web Dispatcher, for the installation as such you require at least 1 GB of hard disk space in addition. For production use of the SAP Web Dispatcher, you need to reserve at least 5 GB. ◦ If you install an SAP Gateway with the ASCS instance, you require at least 1 GB of hard disk space in addition. ◦ Up to 2 GB for each usage type or software unit you want to install. • Database instance For more information about the required disk space, see SAP Note 1707362 . **Note** For safety reasons (system failure), the file systems must be distributed physically over several disks, or RAID-technology must be used. • **High Availability only:** Enqueue replication server instance (ERS) (not including paging file): 5 GB (x64) 8 GB (IA64) • Primary application server instance (not including paging file): 5 GB (x64) 8 GB (IA64) ◦ In addition you require 4 GB (x64), or 8 GB (IA64) per additional platform. ◦ Up to 2 GB for each usage type or software unit you want to install. • Additional application server instance (not including paging file): 2.5 GB (x64)	To check disk space: • Windows Server 2012 (R2) and higher: 1. Open PowerShell in elevated mode, and enter the following command: `get-volume` 2. Check the value **SizeRemaining** of the disk you want to install on. • Windows Server 2008 (R2): 1. Choose **Start > All Programs > Administrative Tools > Storage > Computer Management > Disk Management** . 2. Right-click the drive and choose **Properties**.

	5 GB (IA64) • SAP Host Agent: 256 MB • Temporary disk space for every required installation medium that you have to copy to a local hard disk: Up to 6 GB	
Minimum RAM	• All instances, except SAP Host Agent: 6 GB If you install the ASCS instance with an integrated SAP Web Dispatcher, see SAP Note 2007212 for memory consumption in productive use. • SAP Host Agent: 0.5 GB	To check RAM: • Windows Server 2012 (R2) and higher: Open PowerShell in elevated mode, and enter the following command: `Get-WmiObject Win32_ComputerSystem` • Windows Server 2008 (R2): Choose **Start > Control Panel > System** . **Note** If **System** is not visible, change **View by:** from **Category** into **Large icons**.
Paging file size	For more information, see SAP Note 1518419 .	To check paging file size: • Windows Server 2012 (R2) and higher: For more information, see Checking and Changing the Paging File Settings on Windows Server 2012 (R2) • Windows Server 2008 (R2): 1. Choose **Start > Control Panel > System** . **Note** If **System** is not visible, change **View by:** from **Category** into **Large icons**. 2. Choose **Advanced system settings**. 3. In section **Performance**, select **Settings... > Advanced** . 4. If required, in section **Virtual memory**, choose **Change**. **Note** Do **not** select **Automatically managed paging file size for all drives**. **Note** **High Availability only:** You must adjust the size of the paging file on **all** cluster nodes.
Processing units	**For application server instances and database instances**: The number of physical or virtual processing units usable by the operating system image must be equal to or greater than 2. **For an ASCS instance and SCS instance running on a separate host**: One physical or virtual processing unit usable by the operating system image might be sufficient. Examples of processing units are processor cores or hardware threads (multithreading). In a virtualized environment, ensure that adequate processor resources are available to support the workloads of the running SAP systems.	
Suitable backup system		

Software Requirements

Software Requirement	Requirement	How to Check
Windows operating system 10.2	• **64-bit version** of one of the following Windows Server Editions: ◦ Windows Server 2012 (R2) and higher: ▪ Windows Server Standard Edition	To check your Windows version: • Windows Server 2012 (R2) and higher: Open PowerShell in elevated mode, and enter the following command:

	▪ Windows Server Datacenter Edition ◦ Windows Server 2008 (R2): ▪ Windows Server Standard Edition ▪ Windows Server Enterprise Edition ▪ Windows Server Datacenter Edition **⚠ Caution** Windows Server 2008 (R2) for Itanium-based systems editions is **not** supported. For more information about Db2-specific software requirements, see the IBM Web page **Db2 for Linux UNIX, and Windows – System Requirements** at http://www.ibm.com/software/data/db2/udb/sysreqs.html . **⚠ Caution** For up-to-date information on the released and supported operating system versions for your SAP product and database, see the Product Availability Matrix (PAM) at http://support.sap.com/pam. **⚠ Caution** Make sure that you install the **English** language pack so that your support requests can be handled quickly. • For any version of Windows Server, you need the latest supported service pack	`Get-WmiObject Win32_OperatingSystem | select caption` • Windows Server 2008 (R2): 1. Choose **Start > All Programs > Accessories > Command Prompt** 2. Enter the command **winver** **ℹ Note** • You must add the operating system feature **Failover Clustering** on **all** cluster nodes.
Database software	• Database instance: ◦ IBM Db2 for Linux, UNIX, and Windows The database software is automatically installed by SAP's installer, the Software Provisioning Manager. ◦ Primary application server instance / additional application server instance: Db2 CLI Driver / Db2 JDBC Driver (automatically installed by the installer) ◦ For more information about supported Fix Packs, see SAP Note 101809 . **⚠ Caution** For up-to-date information on the released and supported database versions for your SAP product and database, see the Product Availability Matrix (PAM) at http://support.sap.com/pam. **⚠ Caution** ◦ For the installation of your SAP system, **only** the **English** version of IBM Db2 is supported. ◦ You must only use the Db2 software provided on the **SAP installation media**.	
SAP kernel releases and versions	SAP kernel 7.40 and higher: IP Multicast Configuration Make sure that you have applied the operating system patches required for IP Multicast Configuration. For more information, see SAP Note 1931675 .	For more information about release and roadmap information for the kernel versions, and how this relates to SAP NetWeaver support packages - including important notes on downward compatibility and release dates - see SAP Note 1969546 .
Windows regional settings	**English (United States)** must be set by default. For more information about localized Windows versions, see SAP Note 362379 . You can install additional languages but the default setting for new users must always be **English (United States)**.	Choose **Start > Control Panel > Clock, Language, and Region > Language** .
Minimum Web Browser	Make sure that you have at least one of the following web browsers installed on the host where you run the installer GUI: • Microsoft Internet Explorer 11 or higher • Microsoft Edge • Mozilla Firefox • Google Chrome Always use the latest version of these web browsers. You need a web browser to be able to run the SL Common GUI, and to display the Evaluation Form and send it to SAP.	Choose **Start > Control Panel > Programs and Features** .

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