

IBM PowerHA SystemMirror for AIX

Enterprise Edition

Version 7.2.5

*Release Notes*



**Note**

Before using this information and the product it supports, read the information in [“Notices” on page 13.](#)

**First edition (December 2020)**

This edition applies to PowerHA SystemMirror Version 7.2.5 for AIX and to all subsequent release and modifications until otherwise indicated in new editions.

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## About this document

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The Release Notes topics include late technical information that is not included in other topics, and they highlights new functions for the PowerHA® SystemMirror® Version 7.2.5 for AIX® licensed program.

## Highlighting

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The following highlighting conventions are used in this document:

<b>Bold</b>	Identifies commands, subroutines, keywords, files, structures, directories, and other items whose names are predefined by the system. Bold highlighting also identifies graphical objects, such as buttons, labels, and icons that the you select.
<i>Italics</i>	Identifies parameters for actual names or values that you supply.
Monospace	Identifies examples of specific data values, examples of text similar to what you might see displayed, examples of portions of program code similar to what you might write as a programmer, messages from the system, or text that you must type.

## Case sensitivity in AIX

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Everything in the AIX operating system is case sensitive, which means that it distinguishes between uppercase and lowercase letters. For example, you can use the **ls** command to list files. If you type LS, the system responds that the command is not found. Likewise, **FILEA**, **FiLea**, and **filea** are three distinct file names, even if they reside in the same directory. To avoid causing undesirable actions to be performed, always ensure that you use the correct case.

## ISO 9000

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ISO 9000 registered quality systems were used in the development and manufacturing of this product.



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# New functions and features

## EMC SRDF/Metro SmartDR configuration

PowerHA SystemMirror Version 7.2.5 SP1 added EMC SRDF/Metro SmartDR configuration, which is a two-region High Availability and Disaster Recovery (HADR) framework, that integrates SRDF/Metro and SRDF/Async replicated resources.

## GLVM Configuration Assistant enhancements

Geographic Logical Volume Manager (GLVM) Configuration Assistant is enhanced with new features that converts an existing volume group to GLVM-based volume group and updates an existing resource group to include GLVM resources. Also, the delete or rollback feature that is used for removing resources and configurations that is performed by using the GLVM Configuration Assistant is improved. For more information, see Geographic Logical Volume Manager.

## PowerHA SystemMirror GUI

The following updates are new in the PowerHA SystemMirror GUI:

- Geographic Logical Volume Manager (GLVM) asynchronous configuration is now supported in PowerHA SystemMirror GUI.
- The Operation Center Support (OCS) is used to configure the PowerHA SystemMirror GUI for long-term use, with visual and audio alerts.
- The Cross-Cluster Verification (CCV) feature in PowerHA SystemMirror compares two cluster configurations to show differences in the PowerHA SystemMirror configuration, file sets, interim fixes, and more. CCV compares attributes that are collected from one or two clusters by using the current cluster configuration or snapshots.
- All the supported application monitor configuration parameters are now available in the PowerHA SystemMirror GUI.
- The PowerHA SystemMirror GUI server's hostname is logged in the **c1mgr** log file for cluster changes that are initiated from the PowerHA SystemMirror GUI. This provides complete GUI-to-cluster and cluster-to-GUI activity auditing.
- PowerHA SystemMirror can create a backup communication method for the PowerHA SystemMirror GUI server by configuring a Secure Shell (SSH) key while adding a cluster to the PowerHA SystemMirror GUI.
- The PowerHA SystemMirror GUI has removed the use of the **hostname** command to determine how to communicate with nodes. The PowerHA SystemMirror GUI server now collects either a public boot IP or persistent IP from each cluster node and uses that IP to communicate with that node.
- Importing multiple clusters has been enhanced to provide a progress indicator.
- Improved the clarity of events that are displayed in the PowerHA SystemMirror GUI by adding a start and complete indicator for two-phase events.



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# Software requirements

Before you install PowerHA SystemMirror Version 7.2.5, you must install all available service packs for AIX and PowerHA SystemMirror from the [IBM® Fix Central](#) website.

PowerHA SystemMirror Version 7.2.5 is supported on the following versions of the AIX operating system:

- IBM AIX 7.2 with Technology Level 4 with Service Pack 2, or later
- IBM AIX 7.2 with Technology Level 5, or later
- IBM AIX 7.1 with Technology Level 5 with Service Pack 6, or later

## **PowerHA SystemMirror GUI**

PowerHA SystemMirror GUI is supported only on the following web browsers:

- Google Chrome Version 57, or later
- Firefox Version 54, or later

The PowerHA SystemMirror GUI requires that OpenSSL is installed on the PowerHA SystemMirror GUI server to generate a unique set of security files (keys and certificate). Secure Shell (SSH) must be configured on the PowerHA SystemMirror GUI server and on all nodes in the cluster. SSH is used to add clusters to the PowerHA SystemMirror GUI to restore snapshots, create new clusters from the PowerHA SystemMirror GUI, and to restore cluster snapshots. To perform these tasks from the PowerHA SystemMirror GUI as a non-root user, you must configure the **sudo** command on cluster nodes. For more information, see [Logging in as a non-root user](#). After a cluster is successfully added to the PowerHA SystemMirror GUI, the root access or **sudo** access is no longer required to manage the cluster through the PowerHA SystemMirror GUI.

PowerHA SystemMirror GUI can also manage clusters that are running earlier versions of PowerHA SystemMirror. When you manage older clusters in the PowerHA SystemMirror GUI, you can use only the capabilities that are associated with the PowerHA SystemMirror version of the cluster. For example, with PowerHA SystemMirror Version 7.2.5 GUI server, if you select a cluster in the PowerHA SystemMirror GUI and that cluster is running PowerHA SystemMirror Version 7.2.3, some of the PowerHA SystemMirror Version 7.2.5 capabilities might not be available for the selected cluster.



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# Hardware requirements

PowerHA SystemMirror graphical user interface (GUI) requires IBM POWER7® or later technology-based servers.



# Installation and migration

For more information about migration, see the [Upgrading a PowerHA SystemMirror cluster](#) topic.

For more information, see [Supported upgrade PowerHA SystemMirror versions](#).

## Support matrix for PowerHA SystemMirror Smart Assists

The following table describes the versions of middleware that can be configured and managed with PowerHA SystemMirror Smart Assists. For information about supported PowerHA SystemMirror version, see [PowerHA SystemMirror for AIX Reference Information](#).

Middleware application	AIX 7.2	AIX Version 7.3
AIX print subsystem, DHCP, and DNS	7.2	7.3
Oracle Database Server	19C	19C
SAP Netweaver	7.52	7.52
Db2 <sup>®</sup>	11.5	11.5
WebSphere <sup>®</sup> MQSeries <sup>®</sup>	9.3	9.3
IBM Tivoli <sup>®</sup> Directory Server	6.4	6.4
IBM Lotus <sup>®</sup> Domino <sup>®</sup> Server <b>Note:</b> Support is withdrawn for this product from PowerHA SystemMirror 7.2.8 or later.	NA	NA
SAP liveCache Hot Standby <b>Note:</b> Support is withdrawn for this product from PowerHA SystemMirror 7.2.8 or later.	NA	NA
MaxDB	7.9.08	7.9.08
IBM Tivoli Storage Manager <b>Note:</b> The product is now known as IBM Spectrum <sup>®</sup> Protect <sup>™</sup> .	8.1.8	8.1.8





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## Additional information

### PowerHA SystemMirror GUI

- If you cannot add a cluster to the PowerHA SystemMirror GUI, or create a new cluster from the PowerHA SystemMirror GUI, consider the following points:
  - Verify that the nodes in the cluster have a boot IP or persistent IP that can be routed to the PowerHA SystemMirror GUI server. You cannot use a service IP to manage a cluster.
  - If you have trouble adding a cluster to the PowerHA SystemMirror GUI, verify the SSH connection from the PowerHA SystemMirror GUI server to the remote system that you are trying to connect is working. For example:

```
# ssh 172.19.67.49 /bin/hostname
The authenticity of host '172.19.67.49 (172.19.67.49)' can't be established.
ECDSA key fingerprint is 41:19:ea:f6:4f:46:91:29:f5:a0:fd:89:91:f7:28:97.
Are you sure you want to continue connecting (yes/no)?
```

In the current version of PowerHA SystemMirror GUI, you must also respond to the prompt to establish the SSH connection. You must respond by entering yes to add the host to the `~/.ssh/known_hosts` file of the PowerHA SystemMirror GUI server. After adding the host name to the hosts files the prompt is not displayed again.

- Only a **root** user can create or add a cluster. After the cluster is added in the PowerHA SystemMirror GUI, a non-root user can also manage clusters through the PowerHA SystemMirror GUI. If you do not have root credentials, a **root** user must configure the **sudo** command such that it can be run on one of the nodes in the cluster. For more information, see [Logging in as a non-root user](#). If you have root credentials, Secure Shell (SSH) service must be configured on the cluster to allow root access. The value of the **PermitRootLogin** parameter must be set to yes in the `/etc/ssh/sshd_config` file. You must restart the SSH service after you modify the `sshd_config` file.
  - The SSH service can be used with a key or with a password. For a key, the key must not have a passphrase. The **configPasswordAuthentication** parameter must be set to yes in the `/etc/ssh/sshd_config` file. You must restart the SSH service after you modify the `sshd_config` file.
  - If the status of a cluster is incorrect in the PowerHA SystemMirror GUI, consider the following points:
    - The PowerHA SystemMirror GUI server does not poll the cluster nodes for status. The PowerHA SystemMirror GUI listens for status change notifications from each node as indicated in the following actions:
      - Core PowerHA SystemMirror GUI events are sent to the PowerHA SystemMirror GUI server immediately after they occur.
      - When the **clmgr** command is used to modify the configuration of a cluster, a notification is sent to the PowerHA SystemMirror GUI server.
    - Verify that the network and firewall settings are allowing traffic between the PowerHA SystemMirror GUI server and PowerHA SystemMirror GUI agents by checking the following items:
      - The default port for the PowerHA SystemMirror GUI server is 8080. You can specify a different value for the port in the `/usr/es/sbin/cluster/ui/server/configuration-server.json` file.
      - The default port for the PowerHA SystemMirror GUI agent is 8081. You can specify a different value for the port in the `/usr/es/sbin/cluster/ui/agent/configuration-agent.json` file.
- For more information about changing the values for the ports, see the [Changing ports](#).
- Synchronize the cluster by running the following command:

```
clmgr synchronize cluster
```

After you synchronize the cluster, if the **sync PASSED** event does not appear in the event viewer for that cluster or if the cluster status in the PowerHA SystemMirror GUI is not correct, the problem might require IBM Support assistance.

See [Troubleshooting the PowerHA SystemMirror GUI](#) for more assistance.

- The option to authenticate by specifying an SSH key is not available from the open terminal feature. SSH authentication is supported only through a password.
- You do not need to install the PowerHA SystemMirror GUI server in a PowerHA SystemMirror cluster, but the PowerHA SystemMirror GUI agent must be installed in a cluster. If the PowerHA SystemMirror GUI server is installed within a PowerHA SystemMirror cluster, the PowerHA SystemMirror GUI can be used to keep the PowerHA SystemMirror GUI server highly available.
- The PowerHA SystemMirror GUI can manage AIX clusters concurrently, and with full multi-tenancy support. For more information, see [Cluster zones](#).
- If you install the PowerHA SystemMirror GUI server within a cluster, you must install it on only one of the nodes in the cluster unless you are configuring the PowerHA SystemMirror GUI for high availability. For more information, see [Configuring the GUI to be highly available](#).
- By default, the PowerHA SystemMirror GUI server uses the IP address that is associated with the default host name of the system on which it is running. The PowerHA SystemMirror GUI agents use the IP address of the server's host name to communicate the cluster status to the PowerHA SystemMirror GUI server. If you want to use an alternative IP address for the PowerHA SystemMirror GUI communication, specify the IP address in the **serverAddress** property in the `/usr/es/sbin/cluster/ui/server/configuration-server.json` file. For more information, see [Configuring the PowerHA SystemMirror GUI](#).

## Documentation

To view the latest updates to the documentation, see the [What's new in PowerHA SystemMirror Version 7.2.5 for AIX](#) topic.

To view the documentation in PDF files, see the [PowerHA SystemMirror for AIX PDFs](#) topic.

## Man pages

The man pages for the PowerHA SystemMirror commands are provided in the `cluster.man.en_US.es.data` fileset. To view the man pages, from the command line, enter `man command_name` (where `command_name` is the name of the command). You can also view the man pages in the IBM Knowledge Center, [PowerHA SystemMirror commands](#).

You can use the **clmgr** command to perform most of the PowerHA SystemMirror operations. For more information about the operations that you can perform by using the **clmgr** command, see the [clmgr command: Quick reference](#) topic.

## Notices

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