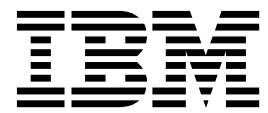


IBM PowerHA SystemMirror for AIX

Standard Edition

Version 7.2.2

*Release Notes*



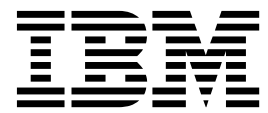


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**Note**

Before using this information and the product it supports, read the information in "Notices" on page 9.

**First edition (December 2017)**

This edition applies to PowerHA SystemMirror Version 7.2.2 for AIX and to all subsequent release and modifications until otherwise indicated in new editions.

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## About this document

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 7.2.2 for AIX® licensed program.

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## Highlighting

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.

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## Case sensitivity in AIX

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.

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## ISO 9000

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





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# New functions for PowerHA SystemMirror Version 7.2.2 for AIX

PowerHA SystemMirror Version 7.2.2 for AIX has the following new functions and updates:

## PowerHA SystemMirror graphical user interface (GUI)

The PowerHA SystemMirror GUI provides the following advantages over the PowerHA SystemMirror command line:

- Monitors the status of all clusters, sites, nodes, and resource groups in your environment in a single, unified view. If a problem occurs in any clusters, those clusters are always displayed at the top of the list for quick search.
- PowerHA SystemMirror Version 7.2.2 for AIX supports the concepts of cluster zones. Cluster zones can be used to organize clusters in a variety of ways. For more information, see Cluster zones topic.
- Management features allows authorized users to perform actions on their clusters, such as:
  - Start and stop cluster services
  - Start and stop resource groups
  - Move resource groups to new nodes
  - Create new clusters
  - Create new resource groups with resources
- Provides security controls by using user permissions that restrict users to authorized functions.
- Scans event summaries and provides a detailed description for each event. If the event occurred because of an error or issue in your environment, you can view suggested solutions to fix the problem. You can also save your own customized notes and solutions for each event.
- You can compare log files. Some commonly used log files are displayed first.
- Views properties for a cluster such as version, name of sites and nodes, and repository disk information.

For more information about the PowerHA SystemMirror GUI, see the PowerHA SystemMirror graphical user interface (GUI) topic.

## Log Analyzer

PowerHA SystemMirror Version 7.2.2 for AIX supports the Log analyzer option, which provides capabilities for scanning and extracting detailed information about different types of errors from the PowerHA SystemMirror, AIX, and other system components log files. For more information, see the Log Analyzer topic.

## NovaLink support

PowerHA SystemMirror Version 7.2.2 for AIX supports the LPAR managed by PowerVM<sup>®</sup> NovaLink<sup>®</sup>. PowerVM NovaLink<sup>®</sup> is enabled by a software package that runs within a Linux LPAR on a POWER8<sup>®</sup> host. For more information, see the Adding a PowerVM NovaLink definition topic.

## Easy Update

The **cl\_езupdate** tool is designed to help the PowerHA SystemMirror cluster administrator with software upgrade management tasks. It allows the administrator to automatically update the entire cluster or a subset of its nodes without disruption of user application services, in most cases. The **cl\_езupdate** script is started from one of the cluster nodes. The repository must be a local directory or a NIM resource that is located on NIM servers. The **cl\_езupdate** rollback option backs up the system (all details in the rootvg volume group) and rolls back the backup copy of

the rootvg volume group if an error occurs in the `cl_ezupdate` tool. The rollback occurs only if the system is changed by using the `cl_ezupdate` tool. For more information, see the `cl_ezupdate` topic.

### Shared Listener support

PowerHA SystemMirror Version 7.2.2 for AIX added support for individual monitors of each Oracle listener threads. When any listener thread failure is detected, the corresponding monitor restarts only the specific listener thread. The main monitor monitors only the database instance. Hence, high availability of Oracle database instance is possible, even though the listener thread is started during failure scenarios.

However, if the database instance fails, the main monitor ensures that it restarts the database instance along with all the associated listeners threads.

### Oracle DB Shared Memory Clean Up

Shared memory that is associated with the Oracle database instance is cleaned up before starting the database. The clean up process ensures that when an Oracle resource group is made online, the oracle database instance is started successfully. The clean up process is performed only when the shared segments exist before you start the Oracle database instance.

### CAA auto start on Disaster Recovery (DR) site

The Cluster Aware AIX (CAA) function stores the primary and backup repository disks PVIDs and uses them to identify the repository disks during disaster recovery when UUID-based identification fails. The new `CAA_DR` capability by CAA to enables or disables this function. PowerHA SystemMirror provides a `clmgr` option to update the CAA tunable when the `CAA_DR` capability is available and also enables the `dr_enabled` mode in CAA by default, if supported by current version of the AIX operating system.

**Note:** This facility is not supported by PowerHA SystemMirror linked clusters

### Monitor Restart Count

PowerHA SystemMirror Version 7.2.2 for AIX adds support for a Monitor Restart Count function for long running Custom Application Monitors. Depending on the complexity of your customer monitor, the monitor might timeout or hang during one monitoring interval, but may run successfully during the next monitoring interval. To compensate for this, you can establish a monitor restart count which defines how many times PowerHA SystemMirror will attempt to restart the failed monitor.

**Note:** Allowable value for the Monitor Restart Count function is in the range 0 - 10. The default value is 0.

### Capturing CAA tunables in PowerHA Snapshot

PowerHA SystemMirror Version 7.2.2 for AIX captures all the CAA tunables and customer security preferences as part of the snapshot database feature. These values are then restored when the snapshot is applied.

### clRGinfo updates

PowerHA SystemMirror Version 7.2.2 for AIX added the `-i` flag to show status of applications with administrative control operations. The `-i` flag is supported only for SAP applications. For more information, see the `clRGinfo` command topic.

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## Software requirements

Before you install PowerHA SystemMirror Version 7.2.2 for AIX, you must install all available service packs for AIX and PowerHA SystemMirror from the IBM® Fix Central website.

PowerHA SystemMirror Version 7.2.2 for AIX is supported on the following version of the AIX operating system:

- IBM AIX 7.1.4 with Service Pack 2, or later
- IBM AIX 7.1.5, or later
- IBM AIX 7.2.0 with Service Pack 2, or later
- IBM AIX 7.2.1 with Service Pack 1, or later
- IBM AIX 7.2.2, or later

PowerHA SystemMirror graphical user interface (GUI) is supported only on the following web browsers:

- Google Chrome Version 50, or later
- Firefox Version 52, or later

### **CAA auto start on DR site**

CAA auto start on Disaster Recovery (DR) site is supported only on the following versions of the AIX operating system:

- IBM AIX 7.1 with Technology Level 5, or later
- IBM AIX 7.2 with Technology Level 2, or later



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## Installation and migration

You cannot migrate from PowerHA SystemMirror Version 6.1 to PowerHA SystemMirror Version 7.2.2 for AIX. You must first migrate from PowerHA SystemMirror Version 6.1 to PowerHA SystemMirror Version 7.2. For more information about migrating, see the Migrating from PowerHA SystemMirror 6.1 to PowerHA SystemMirror 7.1, or later topic.

For more information about upgrading PowerHA SystemMirror Version 7.2.2 for AIX by using a snapshot, see the Upgrading PowerHA SystemMirror by using a snapshot topic.

For more information about upgrading an offline cluster, see the Upgrading an offline cluster for PowerHA SystemMirror topic.

For more information about rolling migration, see the Performing a rolling migration topic.

It is not required to install the PowerHA SystemMirror GUI server in a PowerHA SystemMirror cluster, but the agent must be installed in a cluster. While migrating PowerHA SystemMirror GUI server or agent, an attempt is made to maintain the original state of the service. For example, if the server was active when the migration operation began, an effort is made to ensure it is running again after the migration operation completes.



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## Additional information

### PowerHA SystemMirror graphical user interface (GUI)

After you install the filesets that are available on the PowerHA SystemMirror Version 7.2.2 for AIX media, you must run the `smuiinst.ksh` command to complete the installation process. The `smuiinst.ksh` command automatically downloads and installs the remaining files that are required to complete the PowerHA SystemMirror GUI installation process. These downloaded files are not shipped in the filesets because the files are licensed under the General Public License (GPL).

The PowerHA SystemMirror GUI can be installed on either AIX or Linux operating system, and can manage clusters from both platforms concurrently, within the same instance of the PowerHA SystemMirror GUI server. For AIX only, a PowerHA SystemMirror GUI Version 7.2.2 server can also work with clusters that runs PowerHA SystemMirror 7.1.3 SP 7, PowerHA SystemMirror 7.2.0 SP 3, or PowerHA SystemMirror 7.2.1. For PowerHA SystemMirror 7.1.3 and PowerHA SystemMirror 7.2.0 clusters, only the monitoring and log viewing capabilities are supported. For PowerHA SystemMirror 7.2.1 clusters, full management capability is provided via service pack 2. Prior to that service pack, only the basic, non-management capabilities are supported.

PowerHA SystemMirror GUI has the following limitations in the PowerHA SystemMirror Version 7.2.2 for AIX:

- If you cannot add or create a cluster, verify that SSH from the PowerHA SystemMirror GUI server system to the remote system you are trying to establish contact with is working, and does not require a response to the ssh prompt. 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 the PowerHA SystemMirror GUI, you have to respond to the prompt to establish the SSH connection. You have to respond by entering yes to add the host to the `~/.ssh/known_hosts` file of the PowerHA SystemMirror GUI server. You only need to do this once for each connection.

- In PowerHA SystemMirror GUI, you cannot change the hostname of any managed cluster node. If you must change the hostname of a cluster node that the PowerHA SystemMirror GUI server is managing, you might need to remove the cluster from the PowerHA SystemMirror GUI server before changing the hostname, then add the cluster again after changing the hostname.
- In PowerHA SystemMirror GUI, you cannot change the hostname of the GUI server host. If you must change the hostname of the GUI server, you must either remove all your clusters, then rediscover them after changing the hostname, or manually update the `"/usr/es/sbin/cluster/ui/agent/configuration-agent.json"` file on every cluster node and replace the old server IP address with the new address in the server URL. Restart the agent after this change is complete.
- Creating or adding a cluster currently requires a root login. After the cluster is added in the PowerHA SystemMirror GUI, a root login is no longer required to manage it through the PowerHA SystemMirror GUI.
- When creating a cluster by using the PowerHA SystemMirror GUI wizard, you cannot configure an alternate node name or a persistent IP for the first node that you added to the cluster. The first node is used to authenticate to the remote environment. It is included in the cluster with a default node label that is assigned to it.
- The option to authenticate by using an SSH key is not available from the open terminal feature. For now, SSH authentication is supported only via password.

## Documentation

To view the latest updates to the documentation, see the What's new in PowerHA SystemMirror topic.

If you want to view the documentation without an internet connection, you can install the PowerHA SystemMirror Version 7.2.2 for AIX IBM Knowledge Center on a computer that is running Windows 7, Windows 8, or Windows 10. You can download the PowerHA SystemMirror Version 7.2.2 for AIX IBM Knowledge Center installation files from the Entitled Software Service website.

To view the latest version of the release notes, see the PowerHA SystemMirror Version 7.2.2 for AIX release notes topic.

To view the documentation in PDF files, see the PowerHA SystemMirror Version 7.2.2 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. The fileset is installed in the /usr/share/man/cat1 directory. To view the man pages, from the command line, enter `man command_name` (where *command\_name* is the name of the command).

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.



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