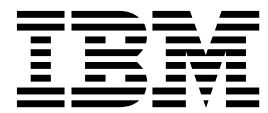IBM PowerHA SystemMirror for AIX

Standard Edition

Version 7.2

Release Notes
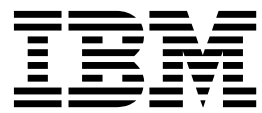
IBM

IBM PowerHA SystemMirror for AIX

Standard Edition

Version 7.2

Release Notes

IBM

Contents

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 licensed program.

Highlighting

The following highlighting conventions are used in this document:

Bold	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.
Italics	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

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

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

New functions for PowerHA SystemMirror Version 7.2

PowerHA SystemMirror Version 7.2 has the following new function:

Resource Optimized High Availability (ROHA)
> ROHA is a function in PowerHA SystemMirror Version 7.2 that enables cluster deployments that can save you costs that are associated with hardware and software. The ROHA function uses all of your systems capabilities with regard to resource management (CPU and memory), such as Enterprise Pool CoD (EPCoD) and On/Off CoD resources, so that standby cluster nodes can be deployed with reduced resources during normal operations. For more information about ROHA, see the Resource Optimized High Availability (ROHA) in PowerHA SystemMirror topic.

Advanced policies for cluster split events
> A quarantine policy isolates the previously active node that was hosting a critical resource group after a cluster split event or node failure occurs. The quarantine policy ensures that your application data is not corrupted or lost. For more information about the quarantine policy, see the Configuring a quarantine policy topic.

AIX Live Update
> AIX Live Update is a new function in the AIX Version 7.2 operating system that you can use with PowerHA SystemMirror. You can use the Live Update function to apply an interim fix for the AIX operating system without restarting the system. The workloads on a system are not stopped during the Live Update process. These workloads are unmanaged during the Live Update process. For more information about the AIX Live Update function with PowerHA SystemMirror, see the AIX Live Update for PowerHA SystemMirror nodes topic.

Automatic Repository Disk Replacement (ARR)
> PowerHA SystemMirror 7.2 uses the Automatic Repository Disk Replacement (ARR) capability of Cluster Aware AIX (CAA) in AIX Version 7.2, or later, or in IBM® AIX 7 with Technology Level 4, or later, to better handle repository disk failures. The ARR function automatically replaces the failed repository disk with a disk from the backup repository disks. The first backup repository disk in the list replaces the failed repository disk. For more information about ARR, see the Repository disk failure topic.

NFS support for split and merge policies
> You can use an NFS file for the tie-breaker option. The NFS mount must exist on each of the nodes in the cluster from the selected NFS server. The partition that first reserves the NFS file continues to function. The partition that cannot lock the NFS file is rebooted, or cluster services are restarted, as specified by the chosen action plan. For more information about NFS and the split and merge policies, see the Tie breaker option for split and merge policies topic.

Automation to adapt to LPM operations
> PowerHA SystemMirror plugs into the LPM infrastructure to listen to Live Partition Mobility (LPM) events and to adjust the cluster nodes as needed to complete the LPM operations successfully without disruption. For more information about LPM, see the Live Partition Mobility variables topic.

Non-disruptive upgrade (NDU)
> You can use the Non-Disruptive Upgrade (NDU) function to update from PowerHA SystemMirror 7.1.3 to PowerHA SystemMirror 7.2.0. For more information about NDU, see the Performing a non-disruptive upgrade topic.

Updated AIX verification checks
> PowerHA SystemMirror 7.2 adds new verification checks in relation to the health of AIX operating system. These verification checks include checking on reservation policy for shared disks across the nodes and network error statistics that warn you about sporadic network issues.

Enhanced rootvg failure detection

Previous version of PowerHA SystemMirror supported only rootvg monitoring based on the disk driver detection mechanism, which was limited to certain configurations such as AIX Multipath I/O. In AIX Version 7.2, or later, or in IBM AIX 7 with Technology Level 4, or later, Logical Volume Manager (LVM) supports new options in the **mkvg** and **chvg** commands. PowerHA SystemMirror 7.2 uses these commands to enable rootvg monitoring and to take nodes down when a failure occurs on the root volume group.

Software requirements

IBM recommends that you install all available service packs for AIX, PowerHA SystemMirror, Reliable Scalable Cluster Technology (RSCT) from the IBM Fix Central website.

PowerHA SystemMirror Version 7.2 is supported on the following version of the AIX operating system:

- IBM AIX 6 with Technology Level 9 with Service Pack 5, or later [1]
- IBM AIX 7 with Technology Level 3 with Service Pack 5, or later [1]
- IBM AIX 7 with Technology Level 4 with Service Pack 1, or later [2]
- IBM AIX Version 7.2 with Service Pack 1, or later

Note:

[1] The Automatic Repository Disk Replacement (ARR) capability, the AIX Live Update function, and the Logical Volume Manager (LVM) options that are used to enable rootvg monitoring, are not available in this version of the AIX operating system.

[2] The AIX Live Update function is not available in this version of the AIX operating system.

Installation and migration

For information about installing PowerHA SystemMirror, see the Installing PowerHA SystemMirror topic.

If you are migrating from PowerHA SystemMirror Version 6.1 to PowerHA SystemMirror Version 7.2, see the Migrating from PowerHA SystemMirror 6.1 to PowerHA SystemMirror 7.1, or later topic.

Note: If you are completing a rolling migration from PowerHA SystemMirror Version 6.1 to PowerHA SystemMirror Version 7.2, you must apply the iFix for APAR IV79386 before you start the rolling migration.

Before you start the migration process, see the prerequisite information in the Upgrading PowerHA SystemMirror prerequisites topic.

For more information about updating with a snapshot, see the Upgrading PowerHA SystemMirror using a snapshot topic.

For more information about updating 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.

PowerHA SystemMirror Smart Assists

PowerHA SystemMirror provides a set of Smart Assists that can help you to rapidly deploy different applications in a highly available cluster environment. The Smart Assists discover the attributes and configurations of the application and creates a cluster configuration for the application that is highly available.

The following applications are available as Smart Assists for PowerHA SystemMirror Version 7.2:
* DB2®
* IBM Lotus® Domino®
* IBM Tivoli® Storage Manager
* Tivoli Directory Server
* Oracle
* SAP liveCache Hot Standby
* SAP Netweaver
* SAP MaxDB
* WebSphere® MQSeries®

Before you use PowerHA SystemMirror Smart Assist, you must complete the followings tasks:
* Install the Smart Assist filesets on all nodes in the cluster.
* Create a basic cluster by using the SMIT interface or the **clgmr** command.
* Verify that the Smart Assist application can run on the primary node and the fallover nodes in the cluster.
* Configure an application for high availability by using the corresponding Smart Assist from a node where the application is running.

Additional information

Default settings

PowerHA SystemMirror 7.2 changed the following default settings after a migration or a new cluster is deployed in AIX Version 7.2, or later, or in IBM AIX 7 with Technology Level 4, or later:

Network failure detection time
> In AIX Version 7.2, or later, or in IBM AIX 7 with Technology Level 4, or later, CAA detects and handles network failures after 20 seconds (default value). To change the default value from 20 seconds, run the **clmgr modify cluster NETWORK_FAILURE_DETECTION_TIME=<xxx>** command, where xxx is the number of seconds (5 - 590).
>
> For more information about network failure detection time, see the PowerHA SystemMirror use of Cluster Aware AIX topic.

Node failure detection time
> Previously, a node was declared down (failed) if it did not participate in health communication for 30 seconds. The default value for CAA is now 40 seconds.

Third-party vendor information

If you plan to use the disk fencing function with EMC Power® Path, you must have an installation of EMC Power Path Version 6.0.1, or later. You must also enable SCSI-3 capabilities for each EMC interface.

If you plan to use the disk fencing function with Hitachi devices, you must use AIX MPIO and the graphical user interface to enable **Host Mode** options 2 and 72.

Documentation

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

To order PowerHA SystemMirror Version 7.2 Knowledge Center on physical media, you can place an order for feature 2322 on product ID 5692-A6P on the Entitled Software Service website or in the eConfig tool.

To view the latest version of the release notes, see the PowerHA SystemMirror Version 7.2 release notes topic.

To view the documentation in PDF files, see the PowerHA SystemMirror PDFs topic.

To view the latest version of the AIX Version 7.2 Release Notes, see the AIX Version 7.2 Release Notes topic.

Man pages

The man pages for the PowerHA SystemMirror 7.2 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 with the **clmgr** command, see the clmgr command: Quick reference topic.

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