

Continentalclusters
Version A.04.02
Release Notes
Second Edition



i n v e n t

Manufacturing Part Number: T2346-90005

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Printing History

Table 1 **Editions and Releases**

Printing Date	Part Number	Edition	Operating System Releases
June 2004	T2346-90004	Edition 1	HP-UX 11i v1 & HP-UX 11i v2
September 2004	T2346-90005	Edition 2	HP-UX 11i v1 & HP-UX 11i v2 (includes revisions for HP-UX 11i v2 September 2004 update)

The printing date and part number indicate the current edition. The printing date changes when a new edition is printed.

HP Printing Division:

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1 Continentalclusters Version A.04.02 Release Notes Second Edition

Announcements

The second edition is revised with content for HP-UX 11i v2 September 2004 update (also known as HP-UX 11i v2 update 2). This version provides support for mixed clusters.

Continentalclusters is a Hewlett-Packard high availability solution that provides disaster tolerant clustering over long distances. Version A.04.02 of Continentalclusters, which contains enhancements and defect fixes, is being released with the following product numbers:

- T2346BA license, media and documentation for HP-UX 11i v1 and HP-UX 11i v2 September 2004 update

Version A.04.02 of Continentalclusters requires the HP-UX 11i v1, HP-UX 11i v2 September 2004 update operating systems. Continentalclusters version A.04.00 or later will not automatically include the separately purchased products Metrocluster CA XP and Metrocluster/SRDF.

Since Continentalclusters configurations may be complex to configure and maintain, it is strongly recommended that you use Hewlett-Packard's high availability consulting services to ensure a smooth installation and rollout. Please contact your HP representative to inquire about high availability consulting. In addition, you should work with your HP representative to ensure that you have the latest firmware revisions for disk drives, disk controllers, LAN controllers, and other hardware.

Starting with *version A.04.00*, *Continentalclusters* recovery supports Oracle 9i RAC instances in the environment that uses *HP XP/CA* for data replication and *SLVM* for volume management.

Starting with *version A.04.02*, *Continentalclusters* recovery also supports Oracle 9i RAC instances in the environment that uses *EMC/SRDF* for data replication and *SLVM* for volume management.

Table 1-1 shows the Oracle RAC support requirements for Continentalclusters version A.04.02.

Table 1-1 Metrocluster Version Requirements for Continentalclusters Oracle RAC Support

Continentalcluster Version	Metrocluster CA XP Version	Metrocluster SRDF Version	HP-UX Version
A.04.02	A.04.20 or later	A.04.13 or later	11i v1
	A.04.21 or later	A.04.13 or later	11i v2

NOTE

For more detailed compatibility and feature information on Continentalclusters, refer to the *Disaster Tolerant Clusters Product Compatibility and Feature Matrix (Continentalclussters-CC)* located on <http://docs.hp.com/hpux/ha>

What's In this Version

Continentalclusters employs semi-automatic failover of Serviceguard packages from one cluster to another following a cluster event that indicates serious disruption of service on one of the clusters. The product consists of a set of configuration, management commands, and a set of daemons that monitors and sends notification of cluster events

The A.04.02 version contains the following enhancements:

- Support for Oracle RAC in an Environment Using EMC/SRDF
- Support for mixed clusters consisting of either HP 9000 servers and/or Integrity servers on HP-UX 11i v2 September 2004 update. The Serviceguard clusters participating in a Continentalclusters environment can consist of both HP 9000 servers and HP Integrity servers, or only HP 9000 servers, or only HP Integrity Servers machines.

NOTE

For mixed cluster requirements on Serviceguard, refer to the *Serviceguard version A.11.16 Second Edition release notes*.

The Continentalclusters product has the following basic features:

- Continentalclusters works with any type of data replication. A set of guidelines for integrating your data replication technology can be found in chapter 4 of the *Designing Disaster Tolerant High Availability Clusters* manual on <http://www.docs.hp.com>.

Continentalcluster provides a pre-integrated data replication solution using HP StorageWorks Continuous Access XP or the EMC/SRDF with the separately purchased products Metrocluster CA XP and Metrocluster/SRDF. Instead of using the pre-integrated data replication solution a customer-selected data replication solution can be chosen by following the integration guidelines.

- A two-data center basic configuration, consisting of one primary cluster and one recovery cluster. Failover of a specific package occurs in one direction from the primary cluster to the recovery cluster. Each data center can serve as both primary and recovery cluster for

different packages. In the cascading failover configuration, the primary cluster can be a metropolitan cluster using EMC/SRDF or CA XP.

- Logical data replication is also possible using the Oracle Standby Database. Template files and additional information are included in the Oracle Standby Database portion of the separately purchased Enterprise Cluster Master Toolkit product. Other customer-selected logical data replication solutions can be implemented as well.
- Cluster monitoring is carried out over WAN or LAN connections. You can use any WAN connection; however, some data replication methods may require high speed connections such as T1, T3, E3/ES, or ATM leased lines or switched lines.

NOTE

Continentalclusters can co-exist with the Advanced Tape Services (ATS) feature of Serviceguard. However, an ATS package must not be configured as a Continentalclusters package. With ATS, a single tape drive (or set of tape drives) is shared between two nodes within a cluster of up to four nodes. All of the tape drives are located within a single data center. If the power were to be lost, the tape drives would not be accessible even if the package were to be failed over to the other data center with a Continentalclusters package. Therefore, using ATS in a Continentalclusters package does not make any sense.

Compatibility Information and Installation Requirements

The same version of Continentalclusters must be installed on all nodes in both clusters of the configuration. All the participating Serviceguard clusters in one Continentalcluster must run the same operating system version. To use Continentalclusters, the following hardware and software must be installed and configured on all nodes.

Hardware Requirements

Host System Hardware Requirements

For HP-UX 11i v1:

- HP 9000 servers

For HP-UX 11i v2 :

- HP 9000 servers
- HP Integrity servers

* HP-UX 11i v2 September 2004 update supports both HP 9000 servers and/or Integrity servers.

If you are doing data replication with XP series disk arrays there are both hardware and software requirements. For more information on the hardware and software requirements for Metrocluster CA XP refer to the *Metrocluster with Continuous Access XP* release notes, which can be found on <http://www.docs.hp.com>.

If you are doing data replication with EMC Symmetrix disk arrays, there are both hardware and software requirements. For more information on the hardware and software requirements for Metrocluster/SRDF refer to the *Metrocluster with EMC SRDF* release notes, which can be found on <http://www.docs.hp.com>.

Software Requirements

There are both HP software and disk array management software requirements.

HP Software Requirements

For HP-UX 11i v1:

- Serviceguard version A.11.14 or later, or Serviceguard OPS Edition A.11.14, or Serviceguard Extension for RAC version A.11.15 or later.

For HP-UX 11i v2:

- Serviceguard version A.11.15 or later, or Serviceguard Extension for RAC version A.11.15 or later.

NOTE

This list is subject to change without notice. Contact your HP support representative for latest information.

Contact your HP Representative to ensure you have the most up to date and required versions of HP software and disk array management software.

Bastille Security Set up

HP-UX 11i v2 Operating Environment includes Bastille and HP-UX IPFilter products that allow customers to control their systems security environment. Continentalclusters has the same set up requirements as Serviceguard and Event Monitoring Service products.

For the Bastille security setup requirements for Serviceguard all mandatory HP-UX IP filter rules apply. In addition, the rules for remote command execution and cluster object manager (COM) must include all participating Continentalcluster nodes for <clusternodes> as designated in the specific rules for using Serviceguard and IPFilter, which are documented in the HP-UX IPFilter version A.03.05.08 Administrators Guide (B9901-90018) posted at <http://www.docs.hp.com> -> internet and security solutions.

For the Bastille security setup requirements for Event Monitoring Service, refer to the *Event Monitoring Service* release notes.

Installing Continentalclusters

Continentalclusters can be installed while the system is running in multi-user mode.

1. Run `swinstall (1m)` to install Continentalclusters from a SD depot. Select the following fileset:

- T2346BA—Continentalclusters

Continentalclusters files are placed in the following directories:

- /usr/sbin
 - /usr/sbin
 - /etc/opt/resmon
 - /etc/cmconcl
 - /opt/cmconcl
 - /opt/cmom
2. If you are using physical data replication with the XP series or the EMC Symmetrix, purchase Metrocluster CA XP or Metrocluster/SRDF and install either the HP StorageWorks Disk Array XP Raid Manager software (available as a set of cpio files with the XP system) or the EMC Symmetrix SymCLI software on all nodes.
 3. If you are using the Oracle 8i Standby Database for logical data replication, purchase the Enterprise Cluster Master toolkit product, and consult your HP representative for more information about installing the template files.

NOTE

Installation of Continentalclusters version A.04.02 does not check the existence of the dependent Serviceguard or Serviceguard OPS Edition or Serviceguard Extension for RAC. Make sure standard Serviceguard or Serviceguard OPS Edition or Serviceguard Extension for RAC is installed or selected at the time of installation of Continentalclusters.

Upgrading from Earlier Versions...

If you are upgrading a continental cluster from an earlier version, you need to do the following:

1. Delete the old Continentalclusters configuration:

```
# cmdeleteconcl
```

2. Upgrade new version of Continentalclusters.
3. Re-apply the Continentalclusters configuration using the original configuration file:

```
# cmapplyconcl -C cmcon1.config
```

Refer to Chapter 4 of the *Designing Disaster Tolerant High Availability Clusters* manual for information on editing configuration files and issuing the configuration commands.

Compatibility Issues

Configuration with a metropolitan cluster as the primary cluster is supported in the cascading failover configuration using Metrocluster with EMC SRDF and CA XP. For details on using EMC SRDF refer to Chapter 6 of the *Designing Disaster Tolerant High Availability Clusters* manual. For details on using XP CA contact your HP representative.

What Manuals are Available for this Version

For information about configuring packages, refer to the following manual, which is shipped with Continentalclusters version number A.04.02. Also, be sure to review the README file that accompanies the software you are using.

See the following manuals for more information:

- *Designing Disaster Tolerant High Availability Clusters* (B7660-90015)
- *Managing Serviceguard* (B3936-90079)

For the most current version of these documents including updates to this document, refer to <http://docs.hp.com/hpux/ha>

If you are using the XP disk array with Continuous Access XP for data replication, refer to the following:

- *HP StorageWorks Disk Array XP Business Copy User's Guide, Sixth Edition* (B7906-96005)
- *HP StorageWorks Disk Array XP Continuous Access User's Guide, Sixth Edition* (B7905-96006)
- *HP StorageWorks Disk Array XP Raid Manager User's Guide, Fourth Edition* (T1610-96001)
- *HP StorageWorks Disk Array XP Remote Control User's Guide* (B9357-96011)

If you are using EMC SRDF for data replication, contact EMC for any EMC products related documentation.

Before attempting to use VxVM storage with Continentalclusters, please refer to the following documents for your version of VERITAS software:

- *VERITAS Volume Manager Administrator's Guide*. This contains a glossary of VERITAS terminology.

- *VERITAS Volume Manager Storage Administrator Administrator's Guide*
- *VERITAS Volume Manager Reference Guide*
- *VERITAS Volume Manager Migration Guide*
- *VERITAS Volume Manager for HP-UX Release Notes*

The August 1999 HP World presentation “*Disaster-Tolerant Highly Available Cluster Architectures*” and other documentation on Continentalclusters is available from <http://docs.hp.com/hpux/ha>.

Further Information

Support information, including current information on patches and known problems, is available from Hewlett-Packard IT center:

<http://itrc.hp.com> (Americas and Asia Pacific)

<http://europe.itrc.hp.com> (Europe)

The most recent versions of user's guides and white papers are available on Hewlett-Packard's high availability documentation web page:

<http://docs.hp.com/hpux/ha>

Patches and Fixes in this Version

There are no patches required for Continentalclusters version A.04.02 at the time of publication. However, this is subject to change without notice. For the most current information contact your HP support representative or Hewlett Packard IT Resource Center.

Additional patch requirements:

- Install any required patches for Serviceguard, Cluster Object Manager and Serviceguard Extension for RAC.
- In addition, all HP-UX patches required by Serviceguard are also required in a Continentalclusters configuration.

NOTE

Patches can be superseded or withdrawn at any time. Be sure to check the status of any patch before downloading it.

An updated list of patches is available on the Hewlett Packard IT Resource Center:

<http://itrc.hp.com> (Americas and Asia Pacific)

<http://europe.itrc.hp.com> (Europe)

Fixes

There are no known fixes at the time of this publication. However, this is subject to change without notice. For the most current information contact your HP support representative.

Known Problems and Workarounds

The following describes known problems with the Continentalclusters and workarounds for them. This is subject to change without notice. For the most current information contact your HP support representative.

More recent information on known problems and workarounds may be available on the Hewlett Packard IT Resource Center:

<http://itrc.hp.com> (Americas and Asia Pacific)

<http://europe.itrc.hp.com> (Europe)

misleading recovery message

- *What is the problem?*

In Serviceguard 11.15 environment, the message, “The id of the user requesting the connection is not available in the authentication session” may occur when running `cmrecovercl`.

- *What is the workaround?*

This message is only an auditing message and can be ignored.

no space allowed in file /etc/opt/cmom/cmomhosts directive order setup

- *What is the problem?*

The directive order of `order deny,allow` or `order allow,deny` specified in `/etc/opt/cmom/cmomhosts` does not allow any space between “`deny,allow`” or “`allow,deny`”. If the file is not setup properly, nodes that are running monitor packages will not be able to obtain information from other nodes about the cluster status.

- *What is the workaround?*

After Continentalclusters configuration, before the first startup of the monitor package, make sure that the file `/etc/opt/cmom/cmomhosts` on all of the participating nodes contain the correct directive order specification.

Persistent cmomd Processes

What is the problem? If the node where the monitor process (`cmclsenryd`) is running goes down and then comes back up (as in a power failure), the `cmomd` process will remain on one or more nodes in the cluster that is being monitored. In these circumstances, the `cmomd` process will continue on the system until terminated by a user. This can become a significant problem if a monitoring node is powered off and on several times, leaving several `cmomd` processes on the monitored cluster, using system process table space as well as other system resources.

What is the workaround? After a failure of the monitoring node, kill the unused `cmomd` processes.

Provider File Renaming

What is the problem? If the provider file, which is named `/opt/cmom/providers/cmprovider.omp` by default, is copied to a backup file by adding a prefix to the name (for example, “`bk_cmprovider.omp`”), then Serviceguard will not be able to tell which file is the correct one.

What is the workaround? Do not rename the provider file to a different name by adding a prefix. As an alternative, you can store copies or alternate versions of the file in a different directory.

Applications hang when all PV links are down

What is the problem? When all PV links to a disk array used by a primary or recovery package are down, the package applications accessing that array will hang indefinitely. The applications will not detect an error and cannot be killed. Even running `cmhaltpkg` will not stop the application.

What is the workaround? The default behavior of LVM is to retry access forever following a failure. There are a number of ways to recover from this application hang problem:

- Reboot the node. The package will then move to another node in the cluster.
- Fix the problem so that one or more PV Links is restored. The application will then continue normally.

- It is also possible to change the default LVM behavior so that it will not retry forever. There is an `lvchange` option that will establish a timeout value which will cause LVM to return an error to the application if the access to the array has failed and the timeout period has expired. The command uses the following format:

```
lvchange -t <seconds> /dev/<vgname>/<lvname>
```

This command must be run from one host, on all logical volumes in the package volume groups. A starting timeout value of 60 seconds is suggested; the timeout must *not* be set to less than 60 seconds.

Once the `lvchange -t` command is run on a host, all other hosts will automatically inherit the new timeout value for the logical volumes. You can view the current timeout value by running the `lvdisplay` command and checking the value listed for “IO Timeout (Seconds)”. If the value is displayed as “default,” then LVM will use the default behavior and retry forever.

Software Availability in Native Languages

Continentalclusters is not available in native language versions.

