HP Serviceguard for Linux Certification Matrix

How to use this document

This document describes OS, Server and Storage support with the listed version of HP Serviceguard for Linux (SG/LX), and refers to HP Serviceguard for Linux support only. All other hardware and software components must be supported together independent of Serviceguard. Unless specifically stated in the notes, all configurations of any server listed are supported as long as the general Serviceguard configuration requirements are met.

This matrix includes certified configurations for HP Serviceguard for Linux versions A.11.14 through the current version, A.11.19. Notes in each section apply to the SG/LX version indicated in the table header of the page on which they reside.

Red text indicates changes since the previous update of this matrix. The section on Serviceguard for Linux A.11.19 is completely new, so it is not being indicated in red.

Contacts and Other Resources

- The most recent version of this matrix can be found at http://www.hp.com/go/sglx.
- In addition to high availability clustering software, the Serviceguard for Linux portfolio also includes Disaster Tolerant Solutions (Extended Distance Cluster and Cluster Extension for Linux) and Application Integration Toolkits for Oracle and SAP. The comprehensive HP Free Toolkit Suite can also be downloaded at no charge from the HP Software Depot at http://www.hp.com/go/softwaredepot/ha.
- For questions about this matrix, or to inquire about the certification status of an unlisted configuration, send an email to SGLXhelp@hp.com
- For SG/LX support dates, release news and software updates, refer to http://www.hp.com/softwarereleases/releases-media2

Known issues

A problem with the Round Robin load balancing function of Red Hat Linux bonding may prevent Serviceguard from detecting network failures in Red Hat kernels. A package may not fail over in this situation. The driver has been fixed in kernels RHEL4 U5 and later. For earlier kernel versions, the “Failover” bonding mode is recommended.

Linux Distributions and Errata
supported with HP Serviceguard for Linux A.11.19

Versions (1) (2) (3) (4)

RHEL5 Kernel Versions
RHEL5 ... 2.6.18-8.EL5
RHEL5 ... 2.6.18-8.1.6.EL5
RHEL5 ... 2.6.18-8.1.8.EL5
RHEL5 ... 2.6.18-8.1.14.E15
RHEL5 ... 2.6.18-8.1.15.E15
RHEL5 ... 2.6.18-49.EL5
RHEL5.1 ... 2.6.18-53.EL5
RHEL5.1 ... 2.6.18-53.1.4.EL5
RHEL5.1 ... 2.6.18-53.1.6.EL5
RHEL5.1 ... 2.6.18-53.1.13.EL5
RHEL5.1 ... 2.6.18-53.1.14.EL5
RHEL5.1 ... 2.6.18-53.1.19.EL5
RHEL5.1 ... 2.6.18-53.1.21.EL5
RHEL5.2 ... 2.6.18-92.EL5 SEE CRITCAL NOTE (5) for any RHEL5.2 kernels
RHEL5.2 ... 2.6.18-92.1.1.EL5
RHEL5.2 ... 2.6.18-92.1.10.EL5
RHEL5.2 ... 2.6.18-92.1.13.EL5
RHEL5.3 ... 2.6.18-128.EL5 SEE NOTE (7)

SLES10 Kernel Versions
SLES10 ... errata 2.6.16.21-0.8
SLES10 SP1 ... errata 2.6.16.46
SLES10 SP1 ... errata 2.6.16.46-0.12
SLES10 SP1 ... errata 2.6.16.46-0.14
SLES10 SP1 ... errata 2.6.16.53-0.8
SLES10 SP1 ... errata 2.6.16.53-0.16
SLES10 SP1 ... errata 2.6.16.54-0.2.3
SLES10 SP1 ... errata 2.6.16.54-0.2.5
SLES10 SP1 ... errata 2.6.16.54-0.2.8
SLES10 SP1 ... errata 2.6.16.54-0.2.11
SLES10 SP2 ... errata 2.6.16.60-0.21
SLES10 SP2 ... errata 2.6.16.60-0.25
SLES10 SP2 ... errata 2.6.16.60-0.27
SLES10 SP2 ... errata 2.6.16.60-0.30
SLES10 SP2 ... errata 2.6.16.60-0.34

Hypervisor Support

HP Serviceguard for Linux running in a VMware guest
Guest must be a supported version listed on this page

VMware ESX 3.0.2
VMware ESX 3.5
VMware 3i

HP Serviceguard for Linux is supported running on a XEN host. **(6)**

Notes:

(1) Not every product in a certified configuration supports all of the errata shown here. Please check that other products used in the cluster support the errata that is proposed.

(2) Information on older errata that are supported may not be shown.

(3) Certification of newer Updates, Service Packs, and Errata will be completed as soon after release as practical.

(4) Supports the IA-32, IA-64 and x86-64 versions of the distributions but not mixed in the same cluster.

(5) No support for e1000e driver. This means no support for NC364T. Other network cards should be supported with other drivers. Problem details are in the Red Hat bugzilla https://bugzilla.redhat.com/show_bug.cgi?id=451855

(6) This provides the ability to package and failover guests. Details are in the white paper "Designing High-Availability for Xen Virtual Machines with HP Serviceguard for Linux" available on the Serviceguard documentation page: http://docs.hp.com/en/ha.html

(7) For Red Hat 5.3 the RPM libnl-1.0-0.10-pre5.5.rpm (or later) must be loaded before installing or running Serviceguard for Linux.

HP ProLiant and 3rd party industry standard servers
supported with HP Serviceguard for Linux A.11.19

Server Models		Fibre Channel (Max Nodes = 16)	SCSI
HP ProLiant BladeSystem p-Class (5) (6) BL20p G2, G3, G4 BL25p G1, G2 BL40p BL45p G1, G2 **HP ProLiant BladeSystem c-Class (5) (6)** BL260c G5 BL280c G6 BL2x220c G5 BL460c, G5, G6 BL465c G1, G5 BL480c BL490c G6 BL495c G5 BL680c G5 BL685c G1, G5, G6 **HP ProLiant DL** DL160 G5, G5p, G6 DL165 G5, G5p DL180 G5, G6 DL185 G5 DL320 G5, G5p, G6 DL320s DL360 G3, G4, G4p, G5, G6 DL365 G1, G5 DL380 G3, G4, G5, G6 DL385 G1, G2, G5, G5p DL560 DL580 G2, G3, G4, G5 DL585 G1, G2, G5 DL740 DL785 G5	**HP ProLiant ML** ML310 G5 ML350 G3, G4p, G5, G6 ML370 G3, G4, G5, G6 ML570 G3, G4 **IBM System x (7)** eServer 325, xSeries 346 x3250 M2, x3350, x3450, x3650T x3455, x3550, x3650, x3655, x3755 x3800, x3850, x3850 M2, x3950, x3950 M2 **IBM BladeCenter** HS12, HS21, HS21 extended memory, LS21, LS22, LS41, LS42 **DELL PowerEdge (7)** R200, R300, R805, R900, R905 SC1435 M600, M605 1900, 1950, 2850, 2900, 2950, 2970 6950 **Sun x64 Sunfire Servers (7)** X4100, X4100 M2, X4150, X4200, X4200 M2, X4450 X4140, X4240, X4440, X4540, X4500, X4600 M2, X2100 M2, X2200 M2 **Fujitsu Siemens PRIMERGY (7)** RX200 S4, RX300 S4 RX330 S1, RX600 S4 BX600 S3, BX630 S2	**HP StorageWorks MSA (8) (9) (10) (12) (13)** MSA1000 ProLiant DL380 G4 Packaged Cluster w/MSA1000 MSA1500cs MSA2000fc (11) MSA2300fc (16) **HP StorageWorks EVA (9) (10) (12) (13) (14)** EVA 3000 / 5000 EVA 4x00 / 6x00 / 8x00 **HP StorageWorks XP (9) (10) (12) (13)** XP48 XP128 XP512 XP1024 XP10000 XP12000 XP20000 XP24000 **EMC Symmetrix (12) (15)** Symmetrix 8000-Series: 5, 5.5 Symmetrix DMX: 6, 6.5, 7.0 **EMC CLARiiON (15)** CLARiiON CX/AX	**HP StorageWorks MSA SAS: Multipath (max nodes = 2) (8) (9) (11) (12)** MSA2000sa MSA2012sa

Notes:

(5) HP ProLiant Blades using Virtual Connect (VC) Technology are supported in addition to blades without VC.

(6) HP ProLiant Blades are supported with Fibre Channel storage only with the mezzanine adapters.

(7) Non-HP servers require the addition of a software Care Pack or support contract as well as HP HBA & driver. Serviceguard Manager has been tested, but is not fully supported on non-HP servers.

(8) Both Active/Active and Active/Passive versions supported. MSA1000 and especially the MSA1500cs arrays must be configured so that no single failure would make any shared storage unavailable. Please refer to the respective documentation on ensuring high availability storage.

(9) Supported with any HP HBA supported in the listed HP ProLiant servers.

(10) For HP arrays, the multipath function built into HBA driver from HP may be used for all LUNs including Lock LUN.

(11) Today the MSA2000fc and MSA2000sa only supports DM-MPIO for multipath. Please see note 12 on restrictions associated with using DM-MPIO with Serviceguard for Linux A.11.19.

See next page for continuation of Notes...

HP ProLiant and 3rd party industry standard servers
supported with HP Serviceguard for Linux A.11.19

Notes continued:

(12) For the manuals and software for HPDM Multipath see http://www.hp.com/go/devicemapper. Serviceguard for Linux A.11.19 supports Device Mapper multipathing (DM-MPIO) with HP Fibre Channel and Serial Attached SCSI (SAS) arrays with the following restrictions:

- **a)** The HPDM Multipath tools and documentation must be used if required by array documentation. Only the distributions listed are supported.
- **b)** LockLUN is supported with DM-MPIO on Red Hat 5.1 and later with HPDMtools3.0 and later. LockLUN is supported with DM-MPIO on SLES10 SP2 and later with HPDMtools4.0 and later. If DM is used with LockLUN, it must be used for all nodes in the cluster. If used for LockLUN DM-MPIO must be used on all nodes. Device alias names are not allowed for LockLUN. The device names should be in the format of /dev/mapper/mpathXpY (X can be different on different nodes, but not Y).
- **c)** DM-MPIO can be used for other Serviceguard for Linux shared storage with any distribution supported by the HPDM Multipath tools. Also, DM-MPIO delivered with the distribution is supported if it is also supported by the array (HP and 3rd party).
- **d)** To use the disk monitor with HPDM Multipath devices see the section *Monitoring Multipath Devices* below.
- **e)** Serviceguard for Linux Extended Distance Cluster (XDC) is not yet supported with DM-MPIO.

(13) Non-HP servers are supported with any HP FC HBA supported in those servers with the listed HP storage arrays.

(14) HP StorageWorks EVA supported with firmware v3.01 or later.

(15) Supported with Red Hat 5 and SLES10. PowerPath 4.3.3 and above. PowerPath must be used for multipath and it is supported for LockLUN. If a version of PowerPath earlier than 4.5 is used, search for article "emc137801" on EMC PowerLink at http://powerlink.emc.com.

(16) Use of fibre channel switches is recommended. Direct attached is with Quorum Service is supported. LockLUN is not recommended with MSA2300FC when direct attached. If a node loses it's connection to the Primary controller on the MSA2300 and another node fails, the first node may not be able to access the LockLUN before a timeout. In that case, both nodes may fail.

Monitoring Multipath Devices (detailed information for note 12 above)

The command *cmresserviced* cannot be used directly for multipath names that will not change with changes in the storage configuration. To overcome this limitation create a conversion script in the Serviceguard bin directory called *cmresserviced_custom*. An example is provided below. The *service_cmd* line for the disk monitor would then be of the form:

SERVICE_CMD[0]="/usr/local/cmcluster/bin/cmresserviced_custom mpathX mpath..."

Where *mpathX* is the default DeviceMapper multipath name for the first monitored LUN. Additional LUNs are represented by *mpath...*

```
#!/bin/sh

. /etc/cmcluster.conf

typeset -a realdm dm
typeset -i i

(( i = 0 ))
for arg in "$@"
do
dm[$i]=${arg##/dev/mapper/}
realdm[$i]=/dev/$(multipath -ll ${dm[$i]}| grep mpath | awk '{print $3}' )
(( i = i + 1 ))
done

$SGLBIN/cmresserviced "${realdm[*]}"
```

HP Integrity servers
supported with Serviceguard for Linux A.11.19

Server Models	Fibre Channel (Max Nodes = 16)	SCSI
HP Integrity Entry-Level Servers (19) rx1600 / rx1600-2 rx1620 / rx1620-2 rx2600 rx2620 / rx2620-2 rx2660 rx3600 rx4640 rx5670 rx6600 **HP Integrity Midrange Servers (19)** rx7620 rx7640 rx8620 rx8640 **HP Integrity High-End Servers (19)** Superdome	**HP StorageWorks MSA (20) (21) (22) (23)** MSA1000 MSA1500cs MSA2300fc **HP StorageWorks EVA (21) (22) (23) (24)** EVA 3000 / 5000 EVA 4x00 / 6x00 / 8x00 **HP StorageWorks XP (21) (22) (23)** XP48 XP128 XP512 XP1024 XP10000, XP12000 XP20000, XP24000 **EMC Symmetrix (23) (25)** Symmetrix 8000-Series: 5, 5.5 Symmetrix DMX: 6, 6.5, 7.0 **EMC CLARiiON (25)** CLARiiON CX/AX	Not supported

Notes:

(19) HP Serviceguard for Linux supports servers with single and dual core Intel Itanium 2 processors. Please ensure that the Linux distribution used is supported on both SG/LX and the server.

(20) Both Active/Active and Active/Passive versions supported. MSA1000 and especially the MSA1500cs arrays must be configured so that no single failure would make any shared storage unavailable. Please refer to the respective documentation on ensuring high availability storage.

(21) Supported with any HP HBA supported in the listed HP Integrity servers.

(22) For HP arrays, use multipath function built into HBA driver from HP.

(23) For the manuals and software for HPDM Multipath see http://www.hp.com/go/devicemapper. Serviceguard for Linux A.11.18 supports Device Mapper multipathing (DM-MPIO) with HP Fibre Channel arrays with the following restrictions:

- **a)** The HPDM Multipath tools and documentation must be used if required by array documentation. Only the distributions listed are supported.
- **b)** LockLUN is supported with DM-MPIO on Red Hat 5.1 and later with HPDMtools3.0 and later. It is not yet supported with SLES10. If DM is used with LockLUN, it must be used for all nodes in the cluster.
- **c)** DM-MPIO can be used for other Serviceguard for Linux shared storage with any distribution supported by the HPDM Multipath tools. Also, DM-MPIO delivered with the distribution is supported if it is also supported by the array (HP and 3rd party).
- **d)** To use the disk monitor with HPDM Multipath devices see the section *Monitoring Multipath Devices* in the notes area of the HP ProLiant and 3rd party industry standard servers section.
- **e)** Serviceguard for Linux Extended Distance Cluster (XDC) is not yet supported with DM-MPIO.

24) HP StorageWorks EVA supported with firmware v3.01 or later.

25) Supported with Red Hat 5 and SLES10. PowerPath 4.3.3 and above. PowerPath must be used for multipath and it is supported for LockLUN. If a version of PowerPath earlier than 4.5 is used, search for article "emc137801" on EMC PowerLink at http://powerlink.emc.com.

Linux Distributions and Errata
supported with HP Serviceguard for Linux A.11.18

Versions (1) (2) (3) (4)

RHEL4 Kernel Versions
RHEL4 U3 [ES/AS] ... 2.6.9-34.EL
RHEL4 U4 [ES/AS] ... 2.6.9-42.EL
RHEL4 U4 [ES/AS] ... 2.6.9-42.0.2.EL
RHEL4 U4 [ES/AS] ... 2.6.9-42.0.3.EL
RHEL4 U4 [ES/AS] ... 2.6.9-42.0.8.EL
RHEL4 U5 [ES/AS] ... 2.6.9-55.EL
RHEL4 U5 [ES/AS] ...2.6.9-55.0.2.EL
RHEL4 U5 [ES/AS] ...2.6.9-55.0.9.EL
RHEL4 U5 [ES/AS] ...2.6.9-55.0.12.EL
RHEL4 U5 [ES/AS] ...2.6.9-55.0.14.EL
RHEL4 U6 [ES/AS] ... 2.6.9-67.EL
RHEL4 U6 [ES/AS] ... 2.6.9-67.0.1.EL
RHEL4 U6 [ES/AS] ... 2.6.9-67.0.4.EL
RHEL4 U6 [ES/AS] ... 2.6.9-67.0.7.EL
RHEL4 U7 [ES/AS] ... 2.6.9-78.EL
RHEL4 U7 [ES/AS] ... 2.6.9-78.0.1.EL

RHEL5 Kernel Versions
RHEL5 ... 2.6.18-8.EL5
RHEL5 ... 2.6.18-8.1.6.EL5
RHEL5 ... 2.6.18-8.1.8.EL5
RHEL5 ... 2.6.18-8.1.14.E15
RHEL5 ... 2.6.18-8.1.15.E15
RHEL5 ... 2.6.18-49.EL5
RHEL5.1 ... 2.6.18-53.EL5
RHEL5.1 ... 2.6.18-53.1.4.EL5
RHEL5.1 ... 2.6.18-53.1.6.EL5
RHEL5.1 ... 2.6.18-53.1.13.EL5
RHEL5.1 ... 2.6.18-53.1.14.EL5
RHEL5.1 ... 2.6.18-53.1.19.EL5
RHEL5.1 ... 2.6.18-53.1.21.EL5
RHEL5.2 ... 2.6.18-92.EL5 SEE CRITCAL NOTE (5) for any RHEL5.2 kernels
RHEL5.2 ... 2.6.18-92.1.1.EL5
RHEL5.2 ... 2.6.18-92.1.10.EL5
RHEL5.2 ... 2.6.18-92.1.13.EL5
RHEL5.3 ... 2.6.18-128.EL5 SEE NOTE (7)

SLES10 Kernel Versions
SLES10 ... errata 2.6.16.21-0.8
SLES10 SP1 ... errata 2.6.16.46
SLES10 SP1 ... errata 2.6.16.46-0.12
SLES10 SP1 ... errata 2.6.16.46-0.14
SLES10 SP1 ... errata 2.6.16.53-0.8
SLES10 SP1 ... errata 2.6.16.53-0.16
SLES10 SP1 ... errata 2.6.16.54-0.2.3
SLES10 SP1 ... errata 2.6.16.54-0.2.5
SLES10 SP1 ... errata 2.6.16.54-0.2.8
SLES10 SP1 ... errata 2.6.16.54-0.2.11
SLES10 SP2 ... errata 2.6.16.60-0.21
SLES10 SP2 ... errata 2.6.16.60-0.25
SLES10 SP2 ... errata 2.6.16.60-0.27
SLES10 SP2 ... errata 2.6.16.60-0.30
SLES10 SP2 ... errata 2.6.16.60-0.34

Hypervisor Support

HP Serviceguard for Linux running in a VMware guest
Guest must be a supported version listed on this page

VMware ESX 3.0.2
VMware ESX 3.5
VMware 3i

HP Serviceguard for Linux is supported running on a XEN host. **(6)**

Notes:

(1) Not every product in a certified configuration supports all of the errata shown here. Please check that other products used in the cluster support the errata that is proposed.

(2) Information on older errata that are supported may not be shown.

(3) Certification of newer Updates, Service Packs, and Errata will be completed as soon after release as practical.

(4) Supports the IA-32, IA-64 and x86-64 versions of the distributions but not mixed in the same cluster.

(5) No support for e1000e driver. This means no support for NC364T. Other network cards should be supported with other drivers. Problem details are in the Red Hat bugzilla https://bugzilla.redhat.com/show_bug.cgi?id=451855

(6) This provides the ability to package and failover guests. Details are in the white paper "Designing High-Availability for Xen Virtual Machines with HP Serviceguard for Linux" available on the Serviceguard documentation page: http://docs.hp.com/en/ha.html

(7) For Red Hat 5.3 the RPM libnl-1.0-0.10-pre5.5.rpm (or later) must be loaded before installing or running Serviceguard for Linux.

HP ProLiant and 3rd party industry standard servers
supported with HP Serviceguard for Linux A.11.18

Server Models

HP ProLiant BladeSystem p-Class (5) (6)
BL20p G1, G2, G3, G4
BL25p G1, G2
BL40p
BL45p G1, G2

HP ProLiant BladeSystem c-Class (5) (6)
BL260c G5
BL280c G6
BL2x220c G5
BL460c, G5, G6
BL465c G1, G5
BL480c
BL490c G6
BL495c G5
BL680c G5
BL685c G1, G5, G6

HP ProLiant DL
DL160 G5, G5p, G6
DL165 G5
DL180 G5, G6
DL185 G5
DL320 G5, G5p, G6
DL320s
DL360 G1, G2, G3, G4, G4p, G5, G6
DL365 G1, G5
DL380 G1, G2, G3, G4, G5, G6
DL385 G1, G2, G5, G5p
DL560
DL580 G1, G2, G3, G4, G5
DL585 G1, G2, G5
DL740
DL760 G1, G2
DL785 G5

HP ProLiant ML
ML310 G5
ML350 G3, G4p, G5, G6
ML370 G3, G4, G5, G6
ML570 G3, G4

IBM System x (7)
eServer 325, xSeries 346
x3250 M2, x3350, x3450, x3650T
x3455, x3550, x3650, x3655, x3755
x3800, x3850, x3850 M2, x3950,
x3950 M2

IBM BladeCenter
HS12, HS21, HS21 extended memory,
LS21, LS22, LS41, LS42

DELL PowerEdge (7)
R200, R300, R805, R900, R905
SC1435
M600, M605
1900, 1950, 2850, 2900, 2950, 2970
6950

Sun x64 Sunfire Servers (7)
X4100, X4100 M2, X4150, X4200,
X4200 M2, X4450
X4140, X4240, X4440, X4540, X4500,
X4600 M2, X2100 M2,
X2200 M2

Fujitsu Siemens PRIMERGY (7)
RX200 S4, RX300 S4
RX330 S1, RX600 S4
BX600 S3, BX630 S2

Fibre Channel (Max Nodes = 16)

HP StorageWorks MSA (8) (9) (10) (12) (13)
MSA1000
ProLiant DL380 G4 Packaged Cluster w/MSA1000
MSA1500cs
MSA2000fc (11)
MSA2300fc (18)

HP StorageWorks EVA (9) (10) (12) (13) (14)
EVA 3000 / 5000
EVA 4x00 / 6x00 / 8x00

HP StorageWorks XP (9) (10) (12) (13)
XP48
XP128
XP512
XP1024
XP10000
XP12000
XP20000
XP24000

EMC Symmetrix (12) (15)
Symmetrix 8000-Series: 5, 5.5
Symmetrix DMX: 6, 6.5, 7.0

EMC CLARiiON (15)
CLARiiON CX/AX

SCSI

HP StorageWorks MSA SAS: Multipath (max nodes = 2) (8) (9) (11) (12)
MSA2000sa
MSA2012sa

HP StorageWorks MSA500: Single-path (max nodes = 4)
MSA500 G2
DL380 G3 Packaged Cluster w/MSA500G2
DL380 G3 Packaged Cluster w/MSA500G2, Racked

HP StorageWorks MSA500: Multipath (17) (max nodes = 2)
MSA500 G2
ProLiant DL380 G4 Packaged Cluster w/MSA500G2
ProLiant DL385 G4 Packaged Cluster w/MSA500G2

Notes:

(5) HP ProLiant Blades using Virtual Connect (VC) Technology are supported in addition to blades without VC.

(6) HP ProLiant Blades are supported with Fibre Channel storage only with the mezzanine adapters.

(7) Non-HP servers require the addition of a software Care Pack or support contract as well as HP HBA & driver. Serviceguard Manager has been tested, but is not fully supported on non-HP servers.

(8) Both Active/Active and Active/Passive versions supported. MSA1000 and especially the MSA1500cs arrays must be configured so that no single failure would make any shared storage unavailable. Please refer to the respective documentation on ensuring high availability storage.

(9) Supported with any HP HBA supported in the listed HP ProLiant servers.

(10) For HP arrays, the multipath function built into HBA driver from HP may be used for all LUNs including Lock LUN.

(11) Today the MSA2000fc and MSA2000sa only supports DM-MPIO for multipath. Please see note 12 on restrictions associated with using DM-MPIO with Serviceguard for Linux A.11.18.

See next page for continuation of Notes…

HP ProLiant and 3rd party industry standard servers
supported with HP Serviceguard for Linux A.11.18

Notes continued:

(12) For the manuals and software for HPDM Multipath see http://www.hp.com/go/devicemapper. Serviceguard for Linux A.11.18 supports Device Mapper multipathing (DM-MPIO) with HP Fibre Channel and Serial Attached SCSI (SAS) arrays with the following restrictions:

- **a)** The HPDM Multipath tools and documentation must be used if required by array documentation. Only the distributions listed are supported.
- **b)** LockLUN is supported with DM-MPIO on Red Hat 5.1 and later and Red Hat 4 U5 and later with HPDMtools3.0 and later. LockLUN is supported with DM-MPIO on SLES10 SP2 and later with HPDMtools4.0 and later. If DM is used with LockLUN, it must be used for all nodes in the cluster. For LockLUN support, Serviceguard for Linux version A.11.18.02 or later MUST be used. If used for LockLUN DM-MPIO must be used on all nodes. Device alias names are not allowed for LockLUN. The device names should be in the format of /dev/mapper/mpathXpY (X can be different on different nodes, but not Y).
- **c)** DM-MPIO can be used for other Serviceguard for Linux shared storage with any distribution supported by the HPDM Multipath tools. Also, DM-MPIO delivered with the distribution is supported if it is also supported by the array (HP and 3rd party).
- **d)** To use the disk monitor with HPDM Multipath devices see the section *Monitoring Multipath Devices* below.
- **e)** Serviceguard for Linux Extended Distance Cluster (XDC) is not yet supported with DM-MPIO.

(13) Non-HP servers are supported with any HP FC HBA supported in those servers with the listed HP storage arrays.

(14) HP StorageWorks EVA supported with firmware v3.01 or later.

(15) Supported with Red Hat EL 4, Red Hat 5, and SLES10. PowerPath 4.3.3 and above. PowerPath must be used for multipath and it is supported for LockLUN. If a version of PowerPath earlier than 4.5 is used, search for article "emc137801" on EMC PowerLink at http://powerlink.emc.com.

(16) SG/LX on VMware guest requires storage that supports SCSI "Persistent Reservation" and is not supported with MSA500 or MSA500 G2.

(17) See the release notes for multipath options with the MSA500 G2. Multipath for LockLUN is not supported with the MSA500 G2.

(18) Use of fibre channel switches is recommended. Direct attached is with Quorum Service is supported. LockLUN is not recommended with MSA2300FC when direct attached. If a node loses it's connection to the Primary controller on the MSA2300 and another node fails, the first node may not be able to access the LockLUN before a timeout. In that case, both nodes may fail.

Monitoring Multipath Devices (detailed information for note 12 above)

The command *cmresserviced* cannot be used directly for multipath names that will not change with changes in the storage configuration. To overcome this limitation create a conversion script in the Serviceguard bin directory called *cmresserviced_custom*. An example is provided below. The *service_cmd* line for the disk monitor would then be of the form:

SERVICE_CMD[0]="/usr/local/cmcluster/bin/cmresserviced_custom mpathX mpath..."

Where *mpathX* is the default DeviceMapper multipath name for the first monitored LUN. Additional LUNs are represented by *mpath...*

```
#!/bin/sh

. /etc/cmcluster.conf

typeset -a realdm dm
typeset -i i

(( i = 0 ))
for arg in "$@"
do
dm[$i]=${arg##/dev/mapper/}
realdm[$i]=/dev/$(multipath -ll ${dm[$i]}| grep mpath | awk '{print $3}' )
(( i = i + 1 ))
done

$SGLBIN/cmresserviced "${realdm[*]}"
```

HP Integrity servers
supported with Serviceguard for Linux A.11.18

Server Models	Fibre Channel (Max Nodes = 16)	SCSI
HP Integrity Entry-Level Servers (19) rx1600 / rx1600-2 rx1620 / rx1620-2 rx2600 rx2620 / rx2620-2 rx2660 rx3600 rx4640 rx5670 rx6600 **HP Integrity Midrange Servers (19)** rx7620 rx7640 rx8620 rx8640 **HP Integrity High-End Servers (19)** Superdome	**HP StorageWorks MSA (20) (21) (22) (23)** MSA1000 MSA1500cs MSA2300fc **HP StorageWorks EVA (21) (22) (23) (24)** EVA 3000 / 5000 EVA 4x00 / 6x00 / 8x00 **HP StorageWorks XP (21) (22) (23)** XP48 XP128 XP512 XP1024 XP10000, XP12000 XP20000, XP24000 **EMC Symmetrix (23) (25)** Symmetrix 8000-Series: 5, 5.5 Symmetrix DMX: 6, 6.5, 7.0 **EMC CLARiiON (25)** CLARiiON CX/AX	Not supported

Notes:

(19) HP Serviceguard for Linux supports servers with single and dual core Intel Itanium 2 processors. Please ensure that the Linux distribution used is supported on both SG/LX and the server.

(20) Both Active/Active and Active/Passive versions supported. MSA1000 and especially the MSA1500cs arrays must be configured so that no single failure would make any shared storage unavailable. Please refer to the respective documentation on ensuring high availability storage.

(21) Supported with any HP HBA supported in the listed HP Integrity servers.

(22) For HP arrays, use multipath function built into HBA driver from HP.

(23) For the manuals and software for HPDM Multipath see http://www.hp.com/go/devicemapper. Serviceguard for Linux A.11.18 supports Device Mapper multipathing (DM-MPIO) with HP Fibre Channel arrays with the following restrictions:

- **a)** The HPDM Multipath tools and documentation must be used if required by array documentation. Only the distributions listed are supported.
- **b)** LockLUN is supported with DM-MPIO on Red Hat 5.1 and later and Red Hat 4 U5 and later with HPDMtools3.0 and later. It is not yet supported with SLES10. If DM is used with LockLUN, it must be used for all nodes in the cluster. For LockLUN support, Serviceguard for Linux version A.11.18.02 or later MUST be used.
- **c)** DM-MPIO can be used for other Serviceguard for Linux shared storage with any distribution supported by the HPDM Multipath tools. Also, DM-MPIO delivered with the distribution is supported if it is also supported by the array (HP and 3rd party).
- **d)** To use the disk monitor with HPDM Multipath devices see the section *Monitoring Multipath Devices* in the notes area of the HP ProLiant and 3rd party industry standard servers section.
- **e)** Serviceguard for Linux Extended Distance Cluster (XDC) is not yet supported with DM-MPIO.

24) HP StorageWorks EVA supported with firmware v3.01 or later.

25) Supported with Red Hat EL 4, Red Hat 5, and SLES10. PowerPath 4.3.3 and above. PowerPath must be used for multipath and it is supported for LockLUN. If a version of PowerPath earlier than 4.5 is used, search for article "emc137801" on EMC PowerLink at http://powerlink.emc.com.

Linux Distributions and Errata
supported with Serviceguard for Linux A.11.16

Versions (1) (2) (3) (4)

RHEL3 Kernel Versions
RHEL3 U1 [ES/AS] ... 2.4.21-9.0.3
RHEL3 U2 [ES/AS] ... 2.4.21-15.0.3
RHEL3 U2 [ES/AS] ... 2.4.21-15.0.4
RHEL3 U3 [ES/AS] ... 2.4.21-20.EL **(5)**
RHEL3 U4 [ES/AS] ... 2.4.21-27.EL
RHEL3 U5 [ES/AS] ... 2.4.21-32.EL
RHEL3 U5 [ES/AS] ... 2.4.21-32.0.1.EL
RHEL3 U6 [ES/AS] ... 2.4.21-37.EL
RHEL3 U6 [ES/AS] ... 2.4.21-37.0.1.EL
RHEL3 U7 [ES/AS] ... 2.4.21-40.EL
RHEL3 U8 [ES/AS] ... 2.4.21-47.EL
RHEL3 U8 [ES/AS] ... 2.4.21-47.0.1.EL

RHEL4 Kernel Versions
RHEL4 U1 [ES/AS] ... 2.6.9-11.EL
RHEL4 U2 [ES/AS] ... 2.6.9-22.EL **(6)**
RHEL4 U2 [ES/AS] ... 2.6.9-22.0.2.EL
RHEL4 U3 [ES/AS] ... 2.6.9-34.EL
RHEL4 U4 [ES/AS] ... 2.6.9-42.EL
RHEL4 U4 [ES/AS] ... 2.6.9-42.0.2.EL
RHEL4 U4 [ES/AS] ... 2.6.9-42.0.3.EL
RHEL4 U4 [ES/AS] ... 2.6.9-42.0.8.EL
RHEL4 U5 [ES/AS] ... 2.6.9-55.EL
RHEL4 U5 [ES/AS] ...2.6.9-55.0.2.EL
RHEL4 U5 [ES/AS] ...2.6.9-55.0.9.EL
RHEL4 U5 [ES/AS] ...2.6.9-55.0.12.EL
RHEL4 U5 [ES/AS] ...2.6.9-55.0.14.EL
RHEL4 U6 [ES/AS] ... 2.6.9-67.EL
RHEL4 U6 [ES/AS] ... 2.6.9-67.0.1.EL
RHEL4 U6 [ES/AS] ... 2.6.9-67.0.4.EL
RHEL4 U6 [ES/AS] ... 2.6.9-67.0.7.EL
RHEL4 U7 [ES/AS] ... 2.6.9-78.EL
RHEL4 U7 [ES/AS] ... 2.6.9-78.0.1.EL

SLES9 Kernel Versions
SLES9 SP1 ... errata 2.6.5-7.139
SLES9 SP1 ... errata 2.6.5-7.145
SLES9 SP1 ... errata 2.6.5-7.147
SLES9 SP1 ... errata 2.6.5-7.151
SLES9 SP1 ... errata 2.6.5-7.151.29
SLES9 SP2 ... errata 2.6.5-7.191
SLES9 SP2 ... errata 2.6.5-7.193
SLES9 SP2 ... errata 2.6.5-7.202.7
SLES9 SP3 ... errata 2.6.5-7.244
SLES9 SP3 ... errata 2.6.5-7.252
SLES9 SP3 ... errata 2.6.5-7.253
SLES9 SP3 ... errata 2.6.5-7.287.3
SLES9 SP4 ... errata 2.6.5-7.308
SLES9 SP4 ... errata 2.6.5-7.311

SLES10 Kernel Versions
SLES10 ... errata 2.6.16.21-0.8
SLES10 SP1 ... errata 2.6.16.46
SLES10 SP1 ... errata 2.6.16.46-0.12
SLES10 SP1 ... errata 2.6.16.46-0.14
SLES10 SP1 ... errata 2.6.16.53-0.8
SLES10 SP1 ... errata 2.6.16.53-0.16
SLES10 SP1 ... errata 2.6.16.54-0.2.3
SLES10 SP1 ... errata 2.6.16.54-0.2.5
SLES10 SP1 ... errata 2.6.16.54-0.2.8
SLES10 SP1 ... errata 2.6.16.54-0.2.11
SLES10 SP2 ... errata 2.6.16.60-0.21
SLES10 SP2 ... errata 2.6.16.60-0.25
SLES10 SP2 ... errata 2.6.16.60-0.27
SLES10 SP2 ... errata 2.6.16.60-0.30

Notes:

(1) Not every product in a certified configuration supports all of the errata shown here. Please check that other products used in the cluster support the errata that is proposed.

(2) Information on older errata that are supported may not be shown.

(3) Certification of newer Updates, Service Packs, and Errata will be completed as soon after release as practical.

(4) Supports the IA-32, IA-64 and x86-64 versions of the distributions but not mixed in the same cluster.

(5) Rare problem caused by failures in the network environment with Red Hat 3 Update 3 can be avoided by work around detailed at http://forums1.itrc.hp.com/service/forums/questionanswer.do?threadId=754018. This is fixed in Update 4.

(6) Please contact HP support to receive required Serviceguard for Linux patch for support for this and later updates.

HP ProLiant and 3rd party industry standard servers
supported with Serviceguard for Linux A.11.16

Server Models		Fibre Channel (Max Nodes = 16)	SCSI
HP ProLiant BladeSystem p-Class (7) (8) BL20p G1, G2, G3, G4 BL25p G1, G2 BL40p BL45p G1, G2 **HP ProLiant BladeSystem c-Class (7) (8)** BL460c BL465c BL480c BL680c G5 BL685c G1, G5 **HP ProLiant DL** DL165 G5 DL320 G5 DL360 G1, G2, G3, G4, G5 DL365 G1, G5 DL380 G1, G2, G3, G4, G5 DL385 G1, G2, G5 DL560 DL580 G1, G2, G3, G4, G5 DL585 G1, G2, G5 DL740 DL760 G1, G2 **HP ProLiant ML** ML350 G3, G4p, G5 ML370 G3, G4, G5 ML570 G3, G4	**IBM Servers (9)** eServer 325 xSeries 346 **DELL Servers (9)** PowerEdge 2850	**HP StorageWorks MSA (10) (11) (12) (13)** MSA1000 ProLiant DL380 G4 Packaged Cluster w/MSA1000 MSA1500cs MSA2000fc **HP StorageWorks VA (11) (12) (13)** VA71x0 VA74x0 **HP StorageWorks EVA (11) (12) (13) (14)** EVA 3000 / 5000 EVA 4x00 / 6x00 / 8x00 **HP StorageWorks XP (11) (12) (13)** XP48 XP128 XP512 XP1024 XP10000, XP12000 XP20000, XP24000 **EMC Symmetrix (15)** Symmetrix 8000-Series: 5, 5.5 Symmetrix DMX: 6, 6.5 **EMC CLARiiON (15)** CLARiiON CX/AX	**MSA: Single path (max nodes = 4)** MSA500 G2 ProLiant DL380 G3 Packaged Cluster ProLiant DL380 G3 Packaged Cluster, Racked **MSA: Multipath w/MD (16) (17) (max nodes = 2)** MSA500 G2 ProLiant DL380 G4 Packaged Cluster w/MSA500G2 ProLiant DL385 G4 Packaged Cluster w/MSA500G2

Notes:

(7) HP ProLiant Blades using Virtual Connect Technology are supported.

(8) HP ProLiant Blades are supported with FibreChannel storage only with the mezzanine adapters.

(9) Non-HP servers require the addition of a software Care Pack or support contract as well as HP HBA & driver. Serviceguard Manager has been tested, but is not fully supported on non-HP servers.

(10) Both Active/Active and Active/Passive versions supported. MSA1000 and especially the MSA1500cs arrays must be configured so that no single failure would make any shared storage unavailable. Please refer to the respective documentation on ensuring high availability storage.

(11) Supported with any HP HBA supported in the listed HP ProLiant servers.

(12) For HP arrays, the multipath function built into HBA driver from HP is recommended. Device Mapper Multipath (DM-MPIO) supported for data LUNs. No DM-MPIO support for LockLUN or disk monitoring with A.11.16.

(13) Non-HP servers are supported with any HP FC HBA supported in those servers with the listed HP storage arrays.

(14) HP StorageWorks EVA supported with firmware v3.01 or later.

(15) Supported with Red Hat EL 4, SLES9 and SLES10. PowerPath 4.3.3 and above. PowerPath must be used for multipath and it is supported for LockLUN. If a version of PowerPath earlier than 4.5 is used, search for article "emc137801" on EMC PowerLink at http://powerlink.emc.com.

(16) DM not supported—see Manual.

(17) Multipath not supported for LockLUN device.

HP Integrity servers
supported with Serviceguard for Linux A.11.16

Server Models	Fibre Channel (Max Nodes = 16)	SCSI
HP Integrity Entry-Level Servers (19) rx1600/rx1600-2 rx1620/rx1620-2 rx2600 rx2620/rx2620-2 rx2660 rx3600 rx4640 rx5670 rx6600 **HP Integrity Midrange Servers (18) (19)** rx7620 rx7640 rx8620 rx8640 **HP Integrity High-End Servers (19)** Superdome	**HP StorageWorks MSA (20) (21) (22)** MSA1000 MSA1500cs MSA2000fc **HP StorageWorks VA (21) (22)** VA71x0 VA74x0 **HP StorageWorks EVA (21) (22) (23)** EVA 3000 EVA 4x00 EVA 5000 EVA 6x00 EVA 8x00 **HP StorageWorks XP (21) (22)** XP48 XP128 XP512 XP1024 XP10000 XP12000 XP20000 XP24000 **EMC Symmetrix (24)** Symmetrix 8000-Series: 5, 5.5 Symmetrix DMX: 6, 6.5 **EMC CLARiiON (24)** CLARiiON CX/AX	Not supported

Notes:

(19) HP Serviceguard for Linux supports servers with single and dual core Intel Itanium 2 processors. Please ensure that the Linux distribution used is supported on both SG/LX and the server.

(20) Both Active/Active and Active/Passive versions supported. MSA1000 and especially the MSA1500cs arrays must be configured so that no single failure would make any shared storage unavailable. Please refer to the respective documentation on ensuring high availability storage.

(21) Supported with any HP HBA supported in the listed HP Integrity servers.

(22) For HP arrays, the multipath function built into HBA driver from HP is recommended. Device Mapper Multipath (DM-MPIO) supported for data LUNs. No DM-MPIO support for LockLUN with A.11.16.

(23) HP StorageWorks EVA supported with firmware v3.01 or later.

(24) Supported with Red Hat EL 4 and SLES10. PowerPath 4.3.3 and above. PowerPath must be used for multipath and it is supported for LockLUN. If a version of PowerPath earlier than 4.5 is used, search for article "emc137801" on EMC PowerLink at http://powerlink.emc.com.

Linux Distributions and Errata
supported with Serviceguard for Linux A.11.15

VERSIONS (1) (2) (3) (4)

RHEL3 Kernel Versions
RHEL3 U1 [ES/AS] ... 2.4.21-9.0.3
RHEL3 U2 [ES/AS] ... 2.4.21-15.0.3
RHEL3 U2 [ES/AS] ... 2.4.21-15.0.4
RHEL3 U3 [ES/AS] ... 2.4.21-20.EL **(5)**
RHEL3 U4 [ES/AS] ... 2.4.21-27.EL
RHEL3 U5 [ES/AS] ... 2.4.21-32.EL
RHEL3 U5 [ES/AS] ... 2.4.21-32.0.1.EL
RHEL3 U6 [ES/AS] ... 2.4.21-37.EL
RHEL3 U6 [ES/AS] ... 2.4.21-37.0.1.EL
RHEL3 U7 [ES/AS] ... 2.4.21-40.EL

SLES8 Kernel Versions
SLES8 SP3 ... errata 2.4.21-198
SLES8 SP3 ... errata 2.4.21-215
SLES8 SP3 ... errata 2.4.21-241
SLES8 SP3 ... errata 2.4.21-273
SLES8 SP4 ... errata 2.4.21-278
SLES8 SP4 ... errata 2.4.21-286
SLES8 SP4 ... errata 2.4.21-292
SLES8 SP4 ... errata 2.4.21-295

Notes:

(1) SG/LX 11.15 is not recommended for new installations as this version is out of "patch phase". Please refer to the SG/LX support model at http://www.hp.com/softwarereleases/releases-media2/

(2) SG/LX 11.15 supports IA-32 versions of Linux only

(3) Not every product in a certified configuration supports all of the errata shown here. Please check that other products used in the cluster support the errata that is proposed.

(4) Information on older errata that are supported may not be shown.

(5) Rare problem caused by failures in the network environment with Red Hat 3 Update 3 can be avoided by work around detailed at http://forums1.itrc.hp.com/service/forums/questionanswer.do?threadId=754018. This is fixed in Update 4.

HP ProLiant and 3rd party industry standard servers
supported with Serviceguard for Linux A.11.15

Server Models	Fibre Channel (Max Nodes = 16)	SCSI
HP ProLiant BladeSystem p-Class (6) BL20p G1, G2, G3, G4 BL25p G1 BL40p **HP ProLiant DL (7)** DL360 G1, G2, G3, G4 DL380 G1, G2, G3, G4, G5 DL385 DL560 DL580 G1, G2, G3, G4 DL585 DL740 DL760 G1, G2 **HP ProLiant ML** ML350 G3, G4 ML370 G3, G4	**HP StorageWorks MSA (8) (9) (10)** MSA1000 ProLiant DL380 G4 Packaged Cluster w/MSA1000 MSA1500cs **HP StorageWorks VA (9) (10)** VA71x0 VA74x0 **HP StorageWorks EVA (9) (10)** EVA 3000 EVA 4000 EVA 5000 EVA 6000 EVA 8000 **HP StorageWorks XP (9) (10)** XP48 XP128 XP512 XP1024 XP10000 XP12000 **EMC Symmetrix (11) (12)** Symmetrix 8000-Series: 5, 5.5 Symmetrix DMX: 6, 6.5	**HP StorageWorks MSA: Single path (max nodes = 2)** MSA500 ProLiant DL380 G2 Packaged Cluster ProLiant DL380 G3 Packaged Cluster

Notes:

(6) HP ProLiant Blades are supported with FibreChannel storage only with the mezzanine adapters.

(7) There is no support running the AMD64 or EMT64 versions of Red Hat or SuSE, even though the OS may support 32-bit applications. During certification testing of the DL585 and the G4 servers, a seldom seen problem was discovered affecting the disk monitor (cmresmond). A replacement copy of cmresmond is available from www.itrc.hp.com in the Servers/ProLiant server clustering forum at http://forums1.itrc.hp.com/service/forums/questionanswer.do?threadId=665900.

(8) Both Active/Active and Active/Passive versions supported. MSA1000 and especially the MSA1500cs arrays must be configured so that no single failure would make any shared storage unavailable. Please refer to the respective documentation on ensuring high availability storage.

(9) Supported with any QLogic based HBA including FCA2214. FCA2214DC, FC2214, FC2214DC, FC1142SR, FC1242SRDC, FC1143, FC1243DC and Mezzanine adapters for HP BladeSystem

(10) For HP arrays, use multipath function built into HBA driver 7.00.03 and above or SecurePath from HP. HP SecurePath is supported for SLES8 and various Red Hat 3 errata. Check with your representative.

(11) HP StorageWorks EVA supported with firmware v3.01 or later.

(12) Requires Red Hat EL 3 update 2 or later. For PowerPath version 4.3.3 and 4.3.4 contact EMC support for the version that does NOT automatically activate ALL volume groups. Any 4.5 or later version is supported. Search for article "emc137801" on EMC PowerLink at http://powerlink.emc.com for more information.

HP Integrity servers
supported with Serviceguard for Linux A.11.15

Server Models	Fibre Channel (Max Nodes = 16)	SCSI
HP Integrity Entry-Level Servers rx1600 rx2600 rx4640 rx5670 **HP Integrity Midrange Servers (18)** rx7620 rx8620	**HP StorageWorks MSA (13) (14) (15)** MSA1000 **HP StorageWorks VA (14) (15)** VA71x0 VA74x0 **HP StorageWorks EVA (14) (15)** EVA 3000 EVA 4000 EVA 5000 EVA 6000 EVA 8000 **HP StorageWorks XP (14) (15)** XP48 XP128 XP512 XP1024 XP10000 XP12000 **EMC Symmetrix (17)** Symmetrix 8000-Series: 5, 5.5 Symmetrix DMX: 6, 6.5	Not supported

Notes:

(13) Both Active/Active and Active/Passive versions supported. MSA1000 and especially the MSA1500cs arrays must be configured so that no single failure would make any shared storage unavailable. Please refer to the respective documentation on ensuring high availability storage.

(14) Supported with any HP A6826A HBA as supported in the listed HP Integrity servers.

(15) For HP arrays, use multipath function built into HBA driver 7.00.03 and above or SecurePath from HP. HP SecurePath is supported for SLES8 and various Red Hat 3 errata. Check with your representative.

(16) HP StorageWorks EVA supported with firmware v3.01 or later.

(17) Requires Red Hat EL 3 update 2 or later. For PowerPath version 4.3.3 and 4.3.4 contact EMC support for the version that does NOT automatically activate ALL volume groups. Any 4.5 or later version is supported. Search for article "emc137801" on EMC PowerLink at http://powerlink.emc.com for more information.

Linux Distributions and Errata
supported with Serviceguard for Linux A.11.14

VERSIONS (1) (2) (3) (4)

RHEL2.1 Kernel Versions
RHEL2.1 U3 [ES/AS] ... 2.4.9-e35
RHEL2.1 U3 [ES/AS] ... 2.4.9-e38
RHEL2.1 U3 [ES/AS] ... 2.4.9-e39
RHEL2.1 U4 [ES/AS] ... 2.4.9-e41
RHEL2.1 U4 [ES/AS] ... 2.4.9-e43
RHEL2.1 U5 [ES/AS] ... 2.4.9-e49

SLES8 Kernel Versions (4)
SLES8 SP3 ... errata 2.4.21-198
SLES8 SP3 ... errata 2.4.21-215
SLES8 SP3 ... errata 2.4.21-241
SLES8 SP3 ... errata 2.4.21-273

Notes:

(1) SG/LX 11.14 is not recommended for new installations as this version is out of "patch phase" for Red Hat 2.1 and out of support phase for SLES8. Please refer to the SG/LX support model at http://www.hp.com/softwarereleases/releases-media2/

(2) Not every product in a certified configuration supports all of the errata shown here. Please check that other products used in the cluster support the errata that is proposed.

(3) Information on older errata that are supported may not be shown.

(4) Serviceguard for Linux version A.11.15 is recommended for SLES8 clusters.

HP ProLiant and 3rd party industry standard servers **(5)**
supported with Serviceguard for Linux A.11.14

Server Models	Fibre Channel (Max Nodes = 16)	SCSI
HP ProLiant BladeSystem p-Class **(6)** BL20p G1, G2 BL40p **HP ProLiant DL** DL360 G1, G2, G3 DL380 G1, G2, G3 DL560 DL580 G1, G2 DL740 DL760 G1, G2 **HP ProLiant ML** ML350 G3 ML370 G3	**HP StorageWorks MSA** **(7) (8)** **(max nodes = 2)** MSA1000 ProLiant DL380 Packaged Cluster w/MSA1000 **(9)** MSA1500cs **HP StorageWorks EVA** **(7) (8) (10)** **(max nodes = 2)** EVA 3000 EVA 5000 **HP StorageWorks VA** **(7) (8)** **(max nodes = 16)** VA71x0 VA74x0 **HP StorageWorks XP** **(7) (8)** **(max nodes = 16)** XP48 XP128 XP512 XP1024	**HP StorageWorks MSA: Single path** **(max nodes = 2)** MSA500 ProLiant DL380 G2 Packaged Cluster ProLiant DL380 G3 Packaged Cluster ProLiant DL380 G3 Packaged Cluster, Racked

Notes:

(5) HP Integrity servers are not supported with HP Serviceguard for Linux A.11.14.

(6) HP ProLiant Blades are supported with FibreChannel storage only with the mezzanine adapters.

(7) Supported with any QLogic based HBA including FCA2214, FCA2214DC and Mezzanine adapters for HP BladeSystem

(8) For HP arrays, use multipath function built into HBA driver 7.00.03 and above or SecurePath from HP. HP SecurePath is supported for SLES8 and various Red Hat 2.1 errata. Check with your representative.

(9) Requires MSA1000 High Availability Kit

(10) HP StorageWorks EVA supported with firmware v3.01 or later.

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