



# HP Serviceguard for Linux Certification

## Matrix A.11.20.00

Version 04.09, December 16<sup>th</sup>, 2015

### How to use this document

This document describes OS, Server and Storage support with the listed version of HP Serviceguard for Linux (SGLX), 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 version A.11.20.00 and updates. Notes in each section apply to the SG/LX version indicated in the table header of the page on which they reside.

Certified configurations for HPE Serviceguard for Linux version A.12.00.00 and updates can be found in HPE Serviceguard for Linux Certification Matrix at <http://www.hp.com/go/linux-serviceguard-docs>

### Contacts and Other Resources

- The most recent version of this matrix can be found at <http://www.hp.com/go/linux-serviceguard-docs>
- In addition to high availability clustering software, the Serviceguard for Linux portfolio also includes Disaster Recovery Solutions (Extended Distance Cluster (XDC), Metrocluster and Continentalclusters) and Application Integration Toolkits for Oracle and SAP.
- The comprehensive HP Serviceguard for Linux Contributed Toolkit Suite can also be downloaded for free from the HP Software Depot at:  
<https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=SGLXTOOLS>
- For SG/LX support dates, release news and software updates, refer to "HP Serviceguard for Linux x86 Support Letter" at <http://www.hp.com/go/linux-serviceguard-docs> >> **Manuals** >> **Getting started**

### Special Note:

Some browsers may cache a copy of this file, so if data seems to not be up to date, please refresh the page. Also, you may have to access this page from <http://www.hp.com/info/sglx>

## **HPE Serviceguard for Linux A.12.00.00**

Certified configurations for HPE Serviceguard for Linux version A.12.00.00 and updates can be found in document: "HPE Serviceguard for Linux Certification Matrix" at <http://www.hp.com/go/linux-serviceguard-docs>

# Linux Distributions and Errata

## Supported with HP Serviceguard for Linux A.11.20

Applies up to A.11.20.24

Versions (1) (2) (3) (4) (5) (15)

RHEL5 Kernel Versions (14)	RHEL6 Kernel Versions (14)	SLES11 Kernel Versions (14)
<p>Below kernel errata supported with A.11.20.00 (Jun'2012) (19)</p> <p>RHEL 5.7 ... 2.6.18-274.el5 RHEL 5.8 ... 2.6.18-308.el5 (SEE NOTE (16))</p> <p>Below kernel errata supported with A.11.20.10 (SGLX_00339) (Dec'2012) (19)</p> <p>RHEL 5.7 ... 2.6.18-274.el5 RHEL 5.7 ... 2.6.18-274.3.1 RHEL 5.7 ... 2.6.18-274.7.1 RHEL 5.7 ... 2.6.18-274.12.1 RHEL 5.7 ... 2.6.18-274.17.1 RHEL 5.7 ... 2.6.18-274.18.1</p> <p>RHEL 5.8 ... 2.6.18-308.el5 RHEL 5.8 ... 2.6.18-308.1.1 RHEL 5.8 ... 2.6.18-308.4.1 RHEL 5.8 ... 2.6.18-308.8.1 RHEL 5.8 ... 2.6.18-308.8.2 RHEL 5.8 ... 2.6.18-308.11.1 RHEL 5.8 ... 2.6.18-308.13.1 RHEL 5.8 ... 2.6.18-308.16.1</p> <p>RHEL 5.9 ... 2.6.18-348 RHEL 5.9 ... 2.6.18-348.1.1 RHEL 5.9 ... 2.6.18-348.2.1 RHEL 5.9 ... 2.6.18-348.3.1 RHEL 5.9 ... 2.6.18-348.4.1 RHEL 5.9 ... 2.6.18-348.6.1</p> <p>RHEL 5.10 ... all errata up to 2.6.18-371.4.1.el5</p> <p>Below kernel errata supported with A.11.20.20 (SGLX_00354 or later) (19):</p> <p>RHEL 5.7 - all errata up to 2.6.18-274.18.1</p> <p>RHEL 5.8 - all errata up to 2.6.18-308.16.1 and below RHEL 5.8 ... 2.6.18-308.20.1 RHEL 5.8 ... 2.6.18-308.24.1</p> <p>RHEL 5.9 ... 2.6.18-348 RHEL 5.9 ... 2.6.18-348.1.1 RHEL 5.9 ... 2.6.18-348.2.1 RHEL 5.9 ... 2.6.18-348.3.1 RHEL 5.9 ... 2.6.18-348.4.1 RHEL 5.9 ... 2.6.18-348.6.1</p> <p>RHEL 5.10 ... all errata up to 2.6.18-371.9.1.el5</p> <p>RHEL 5.11 ... 2.6.18-398.el5</p>	<p>Below kernel errata supported with A.11.20.00 (Jun'2012) (19)</p> <p>RHEL 6.1 ... 2.6.32-131.0.15.el6 RHEL 6.2 ... 2.6.32-220.el6</p> <p>Below kernel errata supported with A.11.20.10 (SGLX_00340) (Dec'2012) (19)</p> <p>RHEL 6.1 ... 2.6.32-131.0.15.el6 RHEL 6.1 ... 2.6.32-131.2.1 RHEL 6.1 ... 2.6.32-131.4.1 RHEL 6.1 ... 2.6.32-131.6.1 RHEL 6.1 ... 2.6.32-131.12.1 RHEL 6.1 ... 2.6.32-131.17.1 RHEL 6.1 ... 2.6.32-131.21.1</p> <p>RHEL 6.2 ... 2.6.32-220.el6 RHEL 6.2 ... 2.6.32-220.2.1 RHEL 6.2 ... 2.6.32-220.4.1 RHEL 6.2 ... 2.6.32-220.4.2 RHEL 6.2 ... 2.6.32-220.7.1 RHEL 6.2 ... 2.6.32-220.13.1 RHEL 6.2 ... 2.6.32-220.17.1 RHEL 6.2 ... 2.6.32-220.23.1 RHEL 6.2 ... all errata up to 2.6.32-220.46.1</p> <p>RHEL 6.3 ... 2.6.32-279.el6 RHEL 6.3 ... 2.6.32-279.1.1 RHEL 6.3 ... 2.6.32-279.2.1 RHEL 6.3 ... 2.6.32-279.5.1 RHEL 6.3 ... 2.6.32-279.5.2 RHEL 6.3 ... 2.6.32-279.9.1 RHEL 6.3 ... 2.6.32-279.11.1 RHEL 6.3 ... 2.6.32-279.14.1 RHEL 6.3 ... 2.6.32-279.39.1 (EUS)</p> <p>Below kernel errata supported with A.11.20.20 (SGLX_00355 or later) (19):</p> <p>RHEL 6.1 - all errata up to 2.6.32-131.21.1</p> <p>RHEL 6.2 ... all errata up to 2.6.32-220.46.1</p> <p>RHEL 6.3 all errata up to 2.6.32-279.22.1 RHEL 6.3 ... 2.6.32-279.39.1 (EUS)</p> <p>RHEL 6.4 ... 2.6.32-358.0.1 RHEL 6.4 ... 2.6.32-358.6.1 RHEL 6.4 ... all errata up to 2.6.32-358.23.2</p> <p>RHEL 6.5 ... all errata up to 2.6.32-431.53.2 with A.11.20.22 (Supported with SGLX_00468 or later)</p> <p>RHEL 6.6 ... 2.6.32-504.el6</p>	<p>Below kernel errata supported with A.11.20.10 (Dec'2012)</p> <p>SLES11SP1 ... errata 2.6.32.12-0.7 SLES11SP1 ... errata 2.6.32.13-0.4.1 SLES11SP1 ... errata 2.6.32.13-0.5.1 SLES11SP1 ... errata 2.6.32.19-0.2.1 SLES11SP1 ... errata 2.6.32.19-0.3.1 SLES11SP1 ... errata 2.6.32.23-0.3.1 SLES11SP1 ... errata 2.6.32.24-0.2.1 SLES11SP1 ... errata 2.6.32.27-0.2.2 SLES11SP1 ... errata 2.6.32.29-0.3 SLES11SP1 ... errata 2.6.32.36-0.5.2 SLES11SP1 ... errata 2.6.32.43-0.4.1 SLES11SP1 ... errata 2.6.32.45-0.3.2 SLES11SP1 ... errata 2.6.32.46-0.3.1 SLES11SP1 ... errata 2.6.32.49-0.3.1 SLES11SP1 ... errata 2.6.32.54-0.3.1 SLES11SP1 ... errata 2.6.32.59-0.3.1 SLES11SP1 ... errata 2.6.32.59-0.7.1</p> <p>SLES11SP2 ... errata 3.0.13-0.27 SLES11SP2 ... errata 3.0.26-0.7.6 SLES11SP2 ... errata 3.0.31-0.9.1 SLES11SP2 ... errata 3.0.34-0.7 SLES11SP2 ... errata 3.0.38-0.5 SLES11SP2 ... errata 3.0.42-0.7</p> <p>SLES11SP3 ... all errata up to 3.0.101-0.46 (20)</p> <p>Below kernel errata supported with A.11.20.20 (SGLX_00356 or later):</p> <p>SLES11SP1 - all errata up to errata 2.6.32.59-0.7.1</p> <p>SLES11SP2 - all errata up to 3.0.101-0.7.17.1</p> <p>SLES11SP3 ... all errata up to 3.0.101-0.46 (20)</p> <hr/> <p><b>Hypervisors Support</b></p> <p><b>VMWare Support:</b> HP Serviceguard for Linux running in a VMware guest (9). Guest can be running either RHEL or SLES.</p> <ul style="list-style-type: none"> <li>• VMware ESX/ESXi 4.1</li> <li>• VMware ESXi 5.0 / 5.1 / 5.5</li> </ul> <p><b>KVM Hypervisor Support:</b> HP Serviceguard for Linux running in a KVM guest (17). Guest can be running either RHEL or SLES.</p> <ul style="list-style-type: none"> <li>• RHEL 6 KVM</li> </ul> <p><b>NOTE:</b> RHEV is not supported.</p>

See page 8 for Notes

# HP Servers and Storage

## Supported with HP Serviceguard for Linux A.11.20

Applies up to A.11.20.24

Server Models (x86\_64bit only)

Shared Storage: Fibre Channel and FCoE (12) (13)

### HP ProLiant BladeSystem c-Class (6) (7)

BL460c G7, Gen8  
BL465c G7, Gen8  
BL685c G7  
BL680c G7  
BL620c G7  
BL490c G7  
BL420c Gen8  
BL660c Gen8

### HP ProLiant DL

DL360 G7  
DL360e Gen8  
DL360p Gen8  
DL380 G7  
DL380e Gen8  
DL380p Gen8  
DL385 G7  
DL385p Gen8  
DL585 G7  
DL580 G7  
DL580 Gen8  
DL980 G7  
DL560 Gen8

ML110 G7  
ML310e Gen8  
ML310e Gen8 v2  
ML350e Gen8  
ML350e Gen8 V2  
ML350p Gen8

**NOTE:** HP Serviceguard recommends that customers check the Linux/Storage vendor's latest hardware specification and/or hardware compatibility matrix as appropriate to ensure compatibility and optimum functionality. Certification of storage will only be valid till the published support life of the arrays itself.

### HP StorageWorks MSA (8) (9)

HP P2000 G3  
MSA2040 (iSCSI is also supported) (21)

### HP EVA/P6000 Storage (8) (9) (10)

HP EVA 4x00 / 6x00 / 8x00  
HP EVA P6300/P6350  
HP EVA P6500/P6550

### HP XP P9000 Storage Series (8) (9)

XP20000, XP24000, P9500

### HP 3PAR StoreServ 10000 Storage (iSCSI is also supported) (8) (9) (21)

HP 3PAR StoreServ 10400 Storage  
HP 3PAR StoreServ 10800 Storage

### HP 3PAR StoreServ 7000 (iSCSI is also supported) (8) (9) (21)

StoreServ 7200  
StoreServ 7400  
StoreServ 7450

### HP 3PAR F-Class Storage Systems (8) (9)

F200 / F400

### HP 3PAR T-Class Storage Systems (8) (9)

T400 / T800

### HP StoreVirtual 4000 Series (iSCSI only storage) (18) (7) (21)

### EMC Symmetrix (8) (9) (11)

Symmetrix DMX: 6, 6.5, 7.0  
Symmetrix VMAX 10K, 20K, 40K  
Symmetrix VMAXe

### EMC CLARiON (8) (9) (11)

CLARiON CX/AX

### EMC VNX Series (8) (9) (11)

VNX5xxx (With Block Storage Option only)  
VNX7xxx (With Block Storage Option only)

### HDS, Hitachi (8) (9)

Hitachi Universal Storage Platform  
VM, V, VSP  
TagmaStore  
USP11000, USP600, USP100, NSC55

### NetApp – Only NFS (filer) option supported

FAS 2000 Series  
FAS 3000 Series  
FAS 6000 Series

### IBM SAN Volume Controller (SVC) (8) (9) supported with following conditions

- SCSI-3 Persistent Reservation (PR) support is must
- Only FC and FCoE are supported
- iSCSI is not supported

See page 8 for Notes

**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 are 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 and it will be done on latest update release of SG/LX 11.20.
- (4) Supports the x86-64 versions of the distributions only.
- (5) Please refer to Note (9) for details on Device Mapper Support and Persistent Reservation support.
- (6) HP ProLiant Blades using Virtual Connect (VC) Technology are supported in addition to blades without VC.
- (7) HP ProLiant Blades are supported with Fibre Channel storage with the mezzanine adapters on all blades and with FlexFabric (LOM and CNA) in G7/Gen8 servers. FCoE feature of FlexFabric is supported and iSCSI feature of FlexFabric is not supported (As of 11.20.20, only Software iSCSI initiator distributed with Linux distro is supported) When using FCoE for shared storage access, Persistent Reservation (PR) must be implemented.
- (8) Supported with any HP HBA supported in the listed HP ProLiant servers.
- (9) Serviceguard for Linux A.11.20 supports SLES and RHEL's distribution of Device Mapper multipathing (DM-Multipath) with HP Fibre Channel arrays with the following restrictions:
  - a) Lock LUN is supported with DM-Multipath. If DM-Multipath is used with Lock LUN, DM must be configured for Lock LUN in all nodes in the cluster.
  - b) Device alias names are allowed for Lock LUN, if configured, it must be used for all the nodes in the cluster and the alias name has to be the same on all nodes.
  - c) DM-Multipath is not supported on virtual nodes (VMware ESXi guests or KVM guests) in a cluster, physical nodes can use DM Multipath. For more details on using SG/LX in virtualized environments please refer to "Using Serviceguard for Linux with VMware Virtual Machines" Whitepaper at <http://www.hp.com/go/linux-serviceguard-docs>
  - d) From Serviceguard for Linux A.11.20.20 onwards, disabling SCSI 3 PR protection will make your cluster unsupported.
  - e) In SG/LX A.11.20.00 and A.11.20.10 DM-Multipath is supported only with physical machine clusters through a workaround that requires Serviceguard SCSI3 PR protection to be disabled.
    - i) In SG/LX A.11.20.10 when DM-Multipath devices are configured in modular packages Serviceguard will automatically disable PR for the package. No user intervention is required.
    - ii) In SG/LX A.11.20.00 when DM-Multipath devices are configured in modular packages one has to manually remove the PR module from the package or disable PR at the cluster level as explained below.
    - iii) In SG/LX A.11.20.00 and A.11.20.10 when DM-Multipath device are configured in Legacy package one will have to disable PR at the cluster level.
    - iv) Steps to disable PR at cluster level:  
To disable Serviceguard SCSI 3 PR protection set a flag "FORCED\_PR\_DISABLE 1" (without the quotes) in the cluster configuration file and apply the cluster configuration. After cluster re-configuration PR is disabled globally in the cluster, rather than on a package by package basis, but it only has an effect on new or re-configured packages. Therefore, just setting FORCED\_PR\_DISABLE does not affect existing packages unless they are updated or re-created. This is the only way of disabling PR in case of Legacy packages.
- (10) HP Storage EVA supported with firmware v3.01 or later.
- (11) Supported with Red Hat with PowerPath 4.3.3 and above. PowerPath may 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>.
- (12) Any restrictions related to storage listed on [http://www.hp.com/products1/serverconnectivity/mass\\_storage\\_devices.html](http://www.hp.com/products1/serverconnectivity/mass_storage_devices.html) apply to Serviceguard for Linux as well.
- (13) Disk monitoring is supported with Device Mapper devices.
- (14) Moving from one kernel to another kernel version needs deadman driver rebuild in the kernel. Please refer to latest Managing HP Serviceguard for Linux guide at <http://www.hp.com/go/linux-serviceguard-docs>
- (15) Please refer to HP Quorum Server support matrix at <http://www.hp.com/go/hpux-serviceguard-docs>
- (16) Serviceguard for Linux A.11.20.00 cluster having RHEL 5.8 nodes does not support Lock Lun due to change in behavior in RHEL 5.8 on ioctl() over partitioned disks. This has been fixed in Serviceguard for Linux A.11.20.10 and HP recommends Customers to update to SG/LX A.11.20.10 by applying SGLX\_00339 (for RHEL 5) or SGLX\_00340 (RHEL 6).
- (17) Red Hat KVM Hypervisor is supported with the following configuration. Also, please refer to whitepaper "Using HP Serviceguard for Linux with Red Hat KVM Guests" at [www.hp.com/go/linux-serviceguard-docs](http://www.hp.com/go/linux-serviceguard-docs) for more details

<b>KVM Hypervisor OS</b>	<b>Supported Guest OS as Serviceguard Node</b>	<b>Supported Shared storage between KVM Guests acting as Serviceguard Node</b>	<b>Quorum Mechanism</b>	<b>Remarks</b>
RHEL 6.3 RHEL 6.4 RHEL 6.5	RHEL 5.7 / 5.8 / 5.9 / 5.10 RHEL 6.1/6.2/6.3/6.4/6.5 SUSE 11 SP1 / SP2 /SP3  NOTE: Only "Hypervisor default, e1000, rtl8139 and virtio" are supported as Guest Network Interface "Device Model"	HP StoreServ 4000 Series MSA2040 HP 3PAR StoreServ 7000  NOTE: Only iSCSI is supported with above listed storages. XDC is not supported with iSCSI.	Only Quorum Server is supported.  Lock LUN using iSCSI is not supported.	Serviceguard does not have any specific recommendation on where/how the Guest OS should be installed. Please choose the boot disk of Guest OS based on RHEL 6 KVM recommendation and your requirement.

- (18) Lock LUN is not supported on iSCSI device.

Continued in next page

- (19)** When nodes are in mixed patch version, WWID for locklun device on Node-1 running SGLX-11.20.00 would mismatch with WWID of locklun device on Node-2 running SGLX-11.20.10/11.20.20 even when the device is same. This is due to the way the WWID is read by Serviceguard. Therefore, it will lead to failure of cmcheckconf and cmapplyconf of cluster configured with LockLUN as arbitration mechanism in the mixed patch environment. This issue is applicable in RHEL only. Therefore, use "cmcheckconf"/"cmapplyconf" only after upgrading all the cluster nodes to SGLX 11.20.20.
- (20)** When the cmeasyinstall command shipped with the A.11.20.10 MR Bundle(DVD Media) is used to install Serviceguard on systems running SLES11 SP3, the command will exit with the failure message "ERROR: Unsupported Update for SUSE". This defective behavior of the cmeasyinstall command has been reported (QXCR1001324026) and fixed in A.11.20.22 (SGLX\_00469). Please download this patch from HP Support Center and use the "cmeasyinstall" script located under "tools" directory of the patch.
- (21)** Extended Distance Cluster (XDC) is not supported with any iSCSI storages that are listed in this document.

### For more information

To read more about Serviceguard for Linux, go to: [hp.com/go/sglx](http://hp.com/go/sglx)

### Call to action

Try Serviceguard for Linux today. Download 90 days FREE evaluation copy of Serviceguard for Linux Base Edition here:

<https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=SGLX-DEMO>



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### Get connected

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