

Hewlett Packard
Enterprise

HPE Serviceguard for Linux 15.40.02 Release Notes

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Overview

This document provides release information about HPE Serviceguard for Linux version 15.40.02.



Packaging information

HPE Serviceguard for Linux v15.20 and later is a single SGLX ISO package that consists of rpms used by the product and its Addons. v15.20 and later also brings in a separate unified package of Quorum Server and Serviceguard Manager+ UI which can be independently installed on common compute node(s) to serve for multiple clusters in a data center.

SGLX ISO contains the rpms of the following components:

- Serviceguard for Linux Core
- Serviceguard Manager+
- Serviceguard Kernel Module
- Serviceguard for Linux Container Support
- Serviceguard Quorum Server
- Serviceguard for Non-Shared Storage
- Serviceguard for Storage Extension
- Serviceguard for Push Button Recovery DR
- Serviceguard for Linux SAP Add-On
- Serviceguard for Linux Oracle Add-On
- Serviceguard for Linux Microsoft SQL Server Add-On
- Serviceguard for Linux NFS Add-On
- Serviceguard for Linux Add-On for IBM Db2
- Serviceguard for Linux Add-On for Enterprise DB PPAS
- Serviceguard for Linux Add-On for SAP Sybase
- Serviceguard for Linux Add-On for KVM

Quorum server and Serviceguard Manager+ UI (Arbitration and Management Software ISO) contains the rpms of the following components:

- Serviceguard Manager+
- Serviceguard Quorum Server



Supported platforms and Linux distributions

HPE Serviceguard for Linux v15 is available on the following Linux distributions:

- Red Hat Enterprise Linux 8
- Red Hat Enterprise Linux 9
- Oracle Linux 8 (Unbreakable Enterprise Kernel Only)
- Oracle Linux 9 (Unbreakable Enterprise Kernel Only)
- SUSE Linux Enterprise Server 15

In addition, the Quorum server and Serviceguard Manager+ UI (Arbitration and Management Software ISO) also supports the following operating systems:

- Flavors of Red Hat Linux (e.g. Cent OS, Rocky Linux)
- Flavors of SUSE Linux (e.g. openSUSE)

NOTE: For more information about supported updates, supported hardware, storage, and other information, see the latest version of HPE Serviceguard for Linux Certification Matrix at https://www.hpe.com/info/sglxsupportmatrix/.



HPE Serviceguard for Linux updates

Features introduced in this version

None

For detailed information about Serviceguard for Linux features and solutions, see the following documents available at https://www.hpe.com/info/linux-serviceguard-docs.

- HPE Serviceguard for Linux Concepts Guide
- HPE Serviceguard for Linux Operational Guide for Workloads and Solutions



Deprecated or obsolete features (from 15.00.00 version)

- Starting with HPE Serviceguard for Linux release 15.00.00, Web-Based Enterprise Management (WBEM) method of monitoring is no longer available. You can continue using Simple Network Management Protocol (SNMP) based tools for cluster, package, node monitoring and event indications.
- The SGeSAP storage connector for SAP HANA host auto failover is obsolete as part of HPE Serviceguard for Linux release 15.00.00. Alternative technologies are available from virtual machine vendors.
- The traditional Serviceguard Manager UI is discontinued from SGLX release 15.20. New workload driven Serviceguard Manager+ UI should be used to monitor the deployment topologies, health status and so on. You can also perform DR rehearsal, workload mobility and various other operations.



Known problems and limitations

This section provides a list of known problems and limitations with HPE Serviceguard for Linux, as known to HPE at the time of publication. If workarounds are available, they are included.

1. The systemd does not have the ordering dependency on Serviceguard configuration sockets during shutdown on SLES15 and RHEL8.1. Because of the lack of ordering dependency, the cluster node does not shut down properly.

   Workaround

   a. Run the `cmhaltnode -f` command from the command prompt to halt all the nodes.

   b. Run the `systemctl` command to reboot or shutdown the cluster.

2. In certain scenarios, the Serviceguard daemons such as `cmcld`, `cmproxy` and `qsc` might fail to start, and generate the following message:
   `"Could Not/Failed To Set Realtime Priority"`

   Workaround

   To resolve this issue, see the customer advisory available at https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00069245en_us

3. The pidentd does not support IPv6 addresses on SUSE Linux Enterprise Server 15 GA.

   Workaround

   To use IPv6 addresses with Serviceguard, upgrade the pidentd from https://www.suse.com/support/update/announcement/2018/suse-ru-20182936-1/ to enable it for IPv6 addresses.

4. The `sg_persist` command reports false return status for certain operations in SLES15.

   Workaround

   This issue has been fixed in the subsequent kernel maintenance updates. Ensure to install the appropriate update to avoid this issue. For more information about the updated kernel see, https://build.opensuse.org/request/show/ 685279.

5. IN533111: Global switching for halted package is re-enabled unexpectedly. This issue occurs in clusters with package dependency configurations. It typically occurs in SGeSAP scale-up HANA clusters, where a primary and a secondary HANA package have a mutual exclusion dependency that prevents them from running on the same node.

   Workaround

   Disable the global switching of both mutual exclusion dependency packages before halting the packages.

6. Multi-target HANA clusters do not support Safesync environments.

7. Clustering of more than eight scale-up HANA system and one scale-out HANA system is not supported within the same cluster. The maximum number might be smaller in cases where non-HANA packages also exist and require exclusive access to limited, cluster-scope resources (namely cluster generic resources and weights and capacities). See the Multi-SID HANA cluster recommendations of the SAP Add-on documentation for more details.

8. HANA scale-out configurations of more than 32 nodes with synchronous or syncmem System Replication configuration must activate the Serviceguard Safesync feature as replication status monitoring method.

9. The general usage of Instance Quarantine as method for HANA primary package failover (hdb_instance_stop_with_package_failover using_quarantine parameter setting) is not supported in SAP host auto failover (HANA with cold standby node) scale-out configurations. Independent from this, configurations with cold standby can make use of Instance Quarantine for the special use case of a switch_on_indexserver_failure setting in HANA global.ini. Manually triggering instance detach is supported in such setups.

10. Due to limitations in Linux loopback mount handling, clusters that might run a HA NFS package and a Serviceguard SAP Add-On package on the same cluster nodes are not supported with NFSv4.



11. The possibility to do a package failover or a site switch in reaction to a HANA indexserver failure depends on notification events from the SAP HANA nameserver. In multiple failure cases where an indexserver and the active master nameserver fail at the same time, no notification is sent. If the HANA instance is configured to repair itself by restarting a failed indexserver, it attempts to do so. If the HANA instance fails to repair itself, the standard package failover/site-switch is triggered later.
12. SAP HANA packages currently do not support csh default shell for sidadm.
13. Graceful Shutdown of HANA packages with Instance Quiescing is supported only for SAP Netweaver instances on Suse/Redhat Linux hosts. Windows application servers are not covered.
14. During upgrade of serviceguard-kmod rpm, the following warning might be logged:
    `"serviceguard-kmod-A.15.00.00-0.rhwarning: file /usr/local/cmcluster/drivers/RHEL9/deadman.ko: remove failed: No such file or directory"`
    Ignore this warning.
15. In some scenarios, Serviceguard deadman module might fail to load after reboot after the RHEL9.0 to RHEL9.1 upgrade. This can happen if SELinux policy is set to Enforcing.

    Workaround

    After reboot, run the following commands:

    ```
    # depmod -a
    # systemctl restart SGSafetyTimer.service
    ```
16. The `cmvmusermgmt` command fails with index out of range exception, if vcenter entries are not added in /etc/hosts as per the convention (ip address, fqdn and short alias).
17. During the installation of "Container Fencing" using A.15.30.00 on Red Hat 9.4 and SLES15 SP6 operating system through cminstaller by selection the options 10 (HPE Serviceguard for Linux Utilities) and then 6 (Container Fencing), an error "`ERROR : Failed to copy to kernel path`" is displayed. This error is not an issue as the Red Hat 9.4 and SLES15 SP6 operating systems are not supported in A.15.30.00. Upgrade your Serviceguard version.
18. On SLES15 SP7 systems, stray grep warnings may appear in logs. Please ignore these warnings because they do not have any functional impact.
19. Easy deployment (deploysappkgs) fails for HANA2 SPS8 using A.15.30.04 or earlier. deploysappkgs prints "`ERR-250: No corresponding remote HDB Package found for hdbSID`".

    Workaround

    Edit SAP HANA global.ini (on all involved nodes) and remove any comments that contain the string "`[system_replication]`". Previous runs of SAP installation tools of SPS8 may have added such comment(s) to the files. Do not alter the system replication configuration section settings itself. Removing the comment(s) does not influence the HANA environment itself, but the deployment will later be possible.
20. In rare cases involving complex network configurations, enabling strict reverse path filtering (rp_filter=1 in /etc/sysctl.conf) might cause legitimate packets to be dropped. This is often indicated by a non-zero IPReversePathFilter counter in netstat -s. Such drops can lead to failures in network-dependent commands like `cmquerycl`. We recommend relaxing the setting to loose mode (rp_filter=2), which allows correctly routed traffic across any interface without compromising essential functionality.
21. `cmsshsetup` currently supports single SSH port configurations only. For multi-port SSH configurations, `cmsshsetup` may fail with the following error:
    `Error: Unable to push public key from local host [nodeX] to remote host [nodeY]`

    Workaround

    Temporarily comment out additional Port lines in `sshd_config` on all cluster nodes, leaving only the port that should be used for remote node SSH connections. Restart the `sshd` daemon.



22. Recommendations to Improve NFS Robustness in SGLX Cluster Environments

Apply the following configuration to improve resiliency. Perform these steps on all nodes.

22.1 Ensure DNS Availability

Many NFS issues in SGLX clusters stem from DNS resolution failures or delays.

Recommendations:

22.1.1 Confirm DNS servers are reachable and responsive from each cluster node.

22.1.2 To reduce dependency on remote DNS during authorization lookups, consider adding NFS clients to `etc/hosts`.

22.2 Configure NFS Robustness Settings

22.2.1 Halt NFS and Dependency Packages

Before making configuration changes, halt the NFS package and any dependency packages.

22.2.2 Set NFS Configuration Parameters in `/etc/nfs.conf`

22.2.2.1 By default, `rpc.mountd` runs as a single thread. Under heavy export authorization processing, or when DNS lookups are slow or failing, the daemon can become unresponsive. In Serviceguard for Linux (SGLX) environments, this may trigger an NFS package failover and produce the following warning:

```
> WARNING: NFS toolkit - couldn't ping process ( /usr/sbin/rpc.mountd )
```

Recommendations:

Edit `/etc/nfs.conf` and apply the following settings:

- Enable multi-threaded rpc.mountd:
  Allows additional threads to respond while one is blocked.
  Uncomment the `threads=` line under `[mountd]` and increase the value as needed.

```
.
.
[mountd]
threads = 4
.
.
```

22.2.2.2 Set NFS Grace Period:

Setting an appropriate NFS grace period helps ensure smooth recovery of NFS locks and prevents filesystem or volume group resource errors in high availability (HA) cluster environments.

For detailed NFS Grace Time guidance, refer to: [HPE Customer Advisory a00128299en_us] (https://support.hpe.com/hpesc/public/docDisplay?docId=a00128299en_us&docLocale=en_US)

22.2.3 Restart NFS Services

After updating configuration, restart NFS services during a maintenance window:

```
systemctl restart nfs-server
```

22.3 Verify Configuration

22.3.1 Verify `mountd` Threads

Run the following command to confirm the number of worker threads (excluding parent):

```
ps -ef | grep '[r]pc.mountd' | awk '$3 != 1' | wc -l
```

Expected output (for example, with 4 threads):

```
4
```

22.4 Complete the Configuration

Once verification is successful, start the NFS package.

Note:
Follow your OS vendor's NFS tuning guidelines for sizing and optimization.

The values above are baseline HA recommendations. You can adjust based on the number of concurrent clients, expected workload characteristics, network latency and reliability, and vendor-specific best practices.

Installing/Upgrading Serviceguard for Linux

For information on pre-requisites, installation, and upgrade of Serviceguard for Linux, see the *HPE Serviceguard for Linux Operational Guide for Workloads and Solutions* guide available at:
http://www.hpe.com/info/linux-serviceguard-docs

Compatibility matrix

For information on compatible Serviceguard version, Linux OS versions, and so on, see the latest version of HPE Serviceguard for Linux Certification Matrix available at:
https://www.hpe.com/info/sglxsupportmatrix/



Checksum information

Table 1 provides checksum information for HPE Serviceguard for Linux bundles. Checksum reported here is obtained via running the following command:

```
sha256sum <ISO image or tar file>
```

Example:

To verify checksum of A.15.00.00 bundle (SGLX_150000.iso), download required bundle and run the command `sha256sum` by providing the path to the downloaded bundle as an argument:

```
# sha256sum SGLX_150000.iso
a4a96c619816c7ee1dff06d8230370f89a085eef565b74e6e7c198139cea4d1d  SGLX_150000.iso
```

The output in the first column "a4a96c619816c7ee1dff06d8230370f89a085eef565b74e6e7c198139cea4d1d" is the checksum for the given file (SGLX_150000.iso) and this value is expected to match with the value mentioned in the following table for A.15.00.00.

Table 1: HPE Serviceguard for Linux Release, Updates, Patch Checksum information

SGLX Version	ISO	Checksum
A.15.40.02	SGLX	"c029e474cc0cdae60bea4bcf8af24f377abbd0570d126207bc846289b3d53c91"
	SGLX_QS_MGMT	"414fcf808cdcc10f3b7c916314b460ea8b4e5ffd4cb3d5bedd8408747dc9dbd4"
A.15.40.01	SGLX	"49751e092e8abdb0812c8ba597cd30badb368afbf903277ab3b4e9ceb19231e9"
	SGLX_QS_MGMT	"5ccf0ba804ed0db45e0bf636a466c59499e1f69ee62abff838e6d4abd382098d"
A.15.40.00	SGLX	"da4527105ec5001f394ab1b1a6bad09e9eda47f77d2729b1135dfb31ccad08f1"
	SGLX_QS_MGMT	"d91b93723249bb3694c0c7ea95092c11172e8562048f6db0e6463e6d3e59c87a"
A.15.30.04	SGLX	"ca4ccfeddf60c09296b5c6ce52307184f7c5f11fc417b73de514b30fa591ed11"
	SGLX_QS_MGMT	"a64513038378b2f8b006c83c123b564ef1ba0225e02ef33df27e4a9d84aae2de"
A.15.30.01	SGLX	"bea3be051daaf581564451633c1b02c10af9ab2eccee263c062ebfb1261a0a9c"
	SGLX_QS_MGMT	"f9fb1d52871e4cc862a7cba19594e8fab0e746fdca6c0b83695be115b366ec7b"
A.15.30.00	SGLX	"cfc57b38fe5750cec0857439e1816d8694f2fbcc11e5f69d91b603c34a060af1"
	SGLX_QS_MGMT	"9add575c9e0845fb7c7da5861dec11e447817115ebda39f645a49f0f8b23e547"
A.15.20.00	SGLX	"2306e08b961330f676bf1a1d4b9a7bcc28580e2021126ad721087659b4bd9d67"

	SGLX_QS_MGMT	"697aceacda00f19571321ae6a7e484a31598fd952267a3604025d504c23949d9"
A.15.10.00	SGLX	"26436ada0376c76aed43c8fd80e491114793bcdcff17e2c7501b6ab04a2f4cec"
A.15.00.01	SGLX	"9b88c7f2647a74f99fd72aed47e8db31bcff68c4478772b5bad489d2fc60afed"
A.15.00.00	SGLX	"a4a96c619816c7ee1dff06d8230370f89a085eef565b74e6e7c198139cea4d1d"

Open-source software components

The source code of the open-source software binaries used by Serviceguard for Linux are available in the following location:

https://github.com/HewlettPackard/serviceguard/tree/master/sglx_opensourcecomponents



Features introduced in earlier versions

This section describes features and capabilities added in all previous releases of HPE Serviceguard for Linux v15:

- Jetty 12 and Java 17 Compatibility
- Reconcile Serviceguard for Linux HA-DR-E7 Licenses to HA-E5 Licenses
- cmmaplicense enhancements
- cmgetlicense enhancement
- Discontinuation of Free Migrated v15 Licenses
- Removal of Template RPM Requirement for Storage-Agnostic Disaster Recovery
- Multi-SID HANA system support with up to eight SIDs
- Enhancements to Central License Manager
- License and Workload Alerts
- Centralized License Management
- Multi-SID HANA system support
- Cross-subnet with quarantine support for HANA multi-target deployments
- HANA alias support for HANA multi-target deployments
- Serviceguard for Linux Push button recovery with application and software-based replications
- Workload mobility for application and software-based replication setups
- Enhanced Easy deployment from Serviceguard Manager+
- Seamless upgrade from Serviceguard for Linux v12 to v15
- Serviceguard for Linux in Containers ecosystem
- License management through Serviceguard Manager+
- Enriched Hybrid cloud support
- Enablement of SGLX solutions for MSSQL AOAI on Kubernetes
- Enhancements to Pushbutton DR for Storage-Based Applications using Serviceguard Manager+
- Enhanced HANA SQL probing
- Reliable failover for workloads managed through SADTA
- SGLX Support for VMWare Storage vMotion
- New workload centric monitoring and administration through Serviceguard Manager+
- Workload mobility across hybrid environment
- Disaster Recovery (DR) rehearsal for workloads
- Support for quarantine and accelerated failover in SAP HANA multitarget deployments
- Cloud enablement on Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform (GCP)
- New and simplified product and licensing structure
- Pre-install and pre-configure checks and validation tool
- Determine the License requirements
- Unix Domain Socket (UDS) based user authorization for Serviceguard commands
- Integration with Zerto



For more information about these features, see the following Release Notes related to the previous versions:

SGLX - A15.40.01 Release Notes

SGLX - A15.40.00 Release Notes

SGLX - A15.30.04 Release Notes

SGLX - A15.30.01 Release Notes

SGLX - A15.30.00 Release Notes

SGLX - A15.20.00 Release Notes

SGLX - A15.10.00 Release Notes

SGLX - A15.00.00 Release Notes

IMPORTANT:

HPE Serviceguard for Linux v15.10.00 and later will have “el” in RPM names for Red Hat and Oracle Linux operating systems, excluding serviceguard-kmod rpm.



Documentation feedback

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