Dell PowerEdge Systems Running SUSE Linux Enterprise Server 15

Release Notes

June 2025
Rev. A29

DELL Technologies

Notes, cautions, and warnings

NOTE: A NOTE indicates important information that helps you make better use of your product.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

Contents

1

Release summary

SUSE Linux Enterprise Server 15 (SLES 15) is the next major release from SUSE following on from SLES 12.

Version

15 Service Pack 5

Release date

July 2020

2

Compatibility

Topics:

Supported host operating systems and hypervisors

For all the supported host operating systems and hypervisors to run SLES 15 GA guests, see Supported Host Operating Systems and Hypervisors.

Supported packages

For more information on all the changes to packages, such as additions, updates, removals, and changes to the package layout of software, see Packages and Functionality Changes.

3

New and enhanced in this release

The SUSE Linux Enterprise Server 15 release includes changes to installation and the module system such as:

- Unified installer
- Installation without network using Packages media
- Migration from openSUSE Leap to SUSE Linux Enterprise Server
- Extended package search
- Software Development Kit
- Repository Mirroring Tool (RMT) replaces Subscription Management Tool (SMT)

For more information on what is new and enhanced in this release, see New and enhanced in this release.

4

Fixes

Topics:

The system fails to reboot automatically after installing SLES15 SP6

Description

On a Dell PowerEdge system configured with software RAID 1 and trying to install SP6 on it, the system does not automatically reboot after the SLES15 SP6 installation finishes. On another console (shell) "cat /proc/mdstat" shows that the RAID 1 resync is still in progress. The below message is displayed.

```
starting yast...
Starting Installer
Probing connected terminal...

Initializing virtual console...

Found a Linux console terminal on /dev/console (128 columns x 48
lines).
Sampling every 5 s to /var/log/YaST2/memsample.zcat
*** Starting YaST ***
WARNING: Nokogiri was built against LibXML version 2.9.14, but has
dynamically loaded 2.10.3
```

Resolution

The issue is fixed in SLES 15 SP6 QU1 ISO.

Systems affected

All Dell Power Edge Systems supported with Software raid.

Applies to

SUSE Linux Enterprise Server 15 Service Pack 6.

Tracking number

299146

Observed "qat firmware failed to load" messages in dmesg

Description

On Sierra Forest based Dell PowerEdge systems installed with SLES 15 SP6. The following qat related failed message is observed in dmesg:

```
4xxx 0000:01:00.0: Direct firmware load for qat_402xx_mmp.bin failed
with error -22
4xxx 0000:01:00.0: Failed to load MMP firmware qat_402xx_mmp.bin
4xxx 0000:01:00.0: Failed to load acceleration FW
4xxx 0000:01:00.0: Resetting device qat_dev0
```

Cause

kernel-firmware-intel package does not carry qat_402xx.bin.xz and qat_402xx_mmp_bin. xz firmware files internally.

Solution

Issue is resolved with combination of Maintenance update of "kernel-default 6.4.0-150600.23.17.1" and " kernel-firmware-intel 20240728-150600.3.6.1."

Systems affected

All Dell PowerEdge servers.

Applies to	SUSE Linux Enterprise Server 15 Service Pack 6
Tracking number	309099

I/O lockup during I/O stress on SLES 15 SP5

Description

On a Dell PowerEdge system that is configured with HBA and installed on SLES 15 SP5, I/O lock-up is observed while running heavy I/O workloads on hard drives connected with HBA. The following error messages are displayed in operating system logs when I/O lock up is observed:

```
mpt3sas_cm0: sending diag reset !!
mpt3sas_cm0: mpt3sas_base_hard_reset_handler: SUCCESS
```

Cause

The patch that returns the value that is read on the 30th iteration instead of exiting from the loop on a nonzero value, that is `scsi: mpt3sas: Perform additional retries if doorbell read returns 0`.

NOTE: As a result of the patch which can be found in the kernels that are listed below, these kernels are at risk, and it is recommended to use latest maintenance update kernel:

```
kernel-default-5.14.21-150500.55.36.1.x86_64
kernel-default-5.14.21-150500.55.39.1.x86_64
kernel-default-5.14.21-150500.55.44.1.x86_64
```

Solution

The issue is resolved in a maintenance update kernel of SLES 15 SP5 (kernel version - kernel-default-5.14.21-150500.55.49.1).

Systems affected	All Dell PowerEdge servers configured with HBA330, 345, 350, 355 series of adapters.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 5
Tracking number	285249

SLES15 SP5 fails to boot on installing KVM packages

Description

On a Dell PowerEdge system configured with NVMe over TCP boot LUN and SLES15 SP5 installed on it. Boot failure is observed on installing KVM packages and rebooting the system. Install the KVM tools, by performing the following steps:

1. Open **YaST2 wizard**.
2. Navigate to **Virtualization**.
3. Install **Hypervisor** and **Tools**.
4. Select **KVM server** and **KVM tools** and then **Accept**.
5. During KVM installation, **Installation wizard** asks for bridge device creation, click **Yes** and Proceed. Once the KVM installation is complete, reboot the system.

Solution

The issue is resolved in the update yast2-Network package available at SUSE Linux Enterprise Server 15 Support.

NOTE: Install the yast2-Network rpm before installing KVM tools.

Systems affected	All Dell PowerEdge systems configured with NVMe over TCP boot.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 5
Tracking number	283531

Observed pmt_telemetry failure in dmesg

Description	On Dell PowerEdge platforms with SLES 15 SP5 installed, and when the system is configured with Intel Raptor Lake CPU, the dmesg shows the following error messages when the operating system boots:
	`intel_pmt telem1: can't request region for resource [mem 0x40044141a0-0x400441430f]`
	`pmt_telemetry: probe of intel_vsec.telemetry.0 failed with error -16`

Resolution	The issue is fixed in the maintenance update kernel of SLES 15 SP5 (kernel version - 5.14.21-150500.55.36.1).
Systems affected	All Dell EMC PowerEdge servers with Intel Raptor Lake CPUs.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 5
Tracking number	278777

iDRAC LC log UEFI0116 warning logs during operating system warm reboot cycling with S160

Description	On Dell PowerEdge platforms when the system is configured with the below settings and run the operating system reboot cycle for 300 times: 1. Go to BIOS Settings > System BIOS > SATA Settings > Embedded SATA > RAID Mode. 2. NVMe Settings > NVMe Mode > RAID. 3. Go to Device settings > DELL PERC S160 Configuration Utility. 4. Convert to RAID Capable Disk > Linux RAID > NVMe > Apply Changes > Virtual Disk Management > Create Virtual Disk > RAID Level: RAID 1 > operating system type: SUSE. 5. Install SUSE 15 SP4 with S160. The following message is logged in life cycle log, and the MD raid goes to the degraded state: `UEFI0116 - One or more boot drivers have reported issues.` **NOTE:** #mdadm /dev/md127 --add /dev/nvme1n1p1 helps adding the second drive manually and completes rebuilding of raid without any errors. The issue is intermittent, and it requires a minimum of 20 reboot cycles to reproduce.
Workaround	After installing the operating system and booting into it, wait for RAID 1 to fully sync before performing the reboot test.
Systems affected	All Dell PowerEdge systems supported with software raid.
Applies to	SUSE Linux Enterprise Server 15 Service Pack and later.
Tracking number	278631

stacd utility logs error messages indicating inability to open /dev/nvme-fabrics

Description	When the host operating system is configured to connect to NVMe TCP target using nvme-stas, /var/log/messages may show the following log message: `stacd[3336]: Failed to open /dev/nvme-fabrics: Too many open files`
Cause	A file descriptor leak within the `libnvme` component.

Resolution	The defect has been resolved in the following versions:
	`nvme-cli version: nvme-cli-2.4+24.ga1ee20-150500.4.6.1`
	`libnvme version: libnvme-1.4+27.g5ae1c3-150500.4.6.1`

Systems affected	Any system physical or virtual running on SLES 15 SP5.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 5
Tracking number	270090

nvme list -v command does not list namespace and controller details

Description	When the host operating system is configured to connect to NVMe TCP target using two different NQNs, the `nvme list -v` command does not list namespace and controller details correctly. The scenario may occur when the host operating system uses one NQN provided by system BIOS to boot from NVMe TCP volume and a different NQN to establish the connection to non-boot NVMe TCP volumes. For more information, see SUSE Linux Enterprise Server Knowledge Base article 000021164.
Cause	`nvme cli` utility does not handle the scenario of a host operating system using two different NQNs.

Resolution	The defect has been resolved in the following versions:
	`nvme-cli version: nvme-cli-2.4+24.ga1ee20-150500.4.6.1`
	`libnvme version: libnvme-1.4+27.g5ae1c3-150500.4.6.1`

Systems affected	This defect affects both physical and virtual systems running on SUSE Linux Enterprise Server 15 Service Pack 5.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 5
Tracking number	269177

Failed to connect socket errors in system logs

Description	On a system with active NVMe over TCP connection established to PowerMax target, system logs show the following recurring log message: `nvme nvme39: failed to connect socket: -110`
Cause	The issue occurs when two NIC interfaces are configured with IP addresses belonging to the same subnet. When PowerMax target sends an ARP request, the host may provide an ARP response on any of the two interfaces. If the host responds to ARP request on the wrong interface, IP packets from target may be received on the wrong interface resulting in loss of connection.
Resolution	Limit the host to have a single IP configured for each storage subnet.
Systems affected	Any system physical or virtual running on SLES 15 SP4 or SP5.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 4 and later.
Tracking number	267484

Segmentation fault when using nvme list with JSON output

Description	When using the nvme list command with the JSON format option (-o json) the output triggers a segmentation fault error. The issue occurs when a persistent connection is established to the PowerStore target or to a CDC such as SFSS.
Cause	The nvme-cli application fails to handle null strings in the output of the `nvme list -o json` command.
Resolution	To address this problem, avoid using the JSON output option (-o json) when running the nvme list command. Contact SUSE Technical Support for PTF.
Systems affected	Any system physical or virtual running on SLES 15 SP5.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 5
Tracking number	272523

Active connections may be terminated when the SFSS VM is reachable after 10 minutes of being inaccessible

Description	When the host operating system is configured to connect to a NVMe TCP target using nvme-stas, and when two or more NIC interfaces are configured with IP addresses belonging to the same subnet, active connections established by nvme-stas may be terminated resulting in data unavailability when SFSS VM becomes reachable after 10 minutes of being inaccessible. Host operating system logs may show the following messages.
	`stafd related: nvme38 - Received discovery log pages (num records=0)`
	`kernel logs: Buffer I/O error on dev nvme11n7, logical block 0, async page read`

Cause	The issue occurs when one of the host interfaces is a part of an active SFSS zone group while the second interface is not. Therefore, when SFSS is made available (after at least 10 minutes of absence), the host may attempt to register with the SFSS using its second interface (with no active zone groups) and receives DLE with zero log pages from the SFSS. This causes the host to terminate existing storage connections, resulting in data unavailability.
Resolution	Limit the host to have single IP configured for each storage subnet.
Systems affected	This defect affects both physical and virtual systems running on SUSE 15 SP4 or SP5.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 4 or SP5
Tracking number	270282

Explicit registration of NVMe-oF TCP hosts to a centralized discovery controller fails

Description	Explicit registration of NVMe-oF TCP hosts to a Centralized Discovery Controller (CDC) like SmartFabric Storage Software (SFSS) fails. The registrations are implicit.
Cause	It is caused due to an issue in libnvme-1.2.
Resolution	This issue is fixed in libnvme-1.4. The updated version of libnvme can be installed with: `#zypper patch --bugzilla=1209906`.
Systems affected	Any system physical or virtual running on SLES 15 SP5.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 5

Tracking number	271867

Symbolic link created using serial number changes to a newly discovered namespace

Description	On a system which has NVMe over TCP configured, the symbolic link using serial number under `/dev/disk/by-id/` directory points to the newly discovered namespace every time the host discovers and connects to a new namespace. For more information, see SUSE Linux Enterprise Server Knowledge Base article 000021131.
Cause	Existing udev rules that configure serial number based symbolic link do not add namespace id to identify the namespace uniquely.
Workaround	Use alternate symbolic links which are present in `/dev/disk/by-id/` which are created using WWID.
Resolution	Issue is resolved in systemd version systemd-249.16-150400.8.28.3 or higher.
Systems affected	All systems using NVMe TCP namespace.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 4 and Service Pack 5.
Tracking number	256312

nvme-stas: blacklisting network interface does not apply for persisted connections

Description	In nvme-stas-1.1.6, when the `persistent-connections=true` is set in /etc/stas/stafd.conf, the existing connections to discovery controllers persist even when the connections are blacklisted. `blacklist=` prevents new connections on the listed interfaces, but the existing connections continue to exist, not removed. Manual command `nvme disconnect -d [dev]` is required to remove persisted connections that are blacklisted. This has been fixed in nvme-stas-1.1.8-150400.3.6.1 which is available from SUSE, so that regardless of the value of configuration setting `persistent-connections=` any blacklisted connection is removed immediately.
Cause	N/A
Resolution	Issue is resolved in SUSE Linux Enterprise Server 15 Service Pack 5
Systems affected	All Dell PowerEdge systems that support nvme-stas.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 4.
Tracking number	251190

Booting into tboot with xen kernel is failed

Description	On Dell PowerEdge systems when the: • System is configured with Intel TPM 2.0 or TPM 1.2 in BIOS mode. • BIOS Settings > System BIOS > System Security > TPM Hierarchy - Enabled > Intel® TXT - ON. System stops when we try to boot from tboot + Xen entry in grub in legacy BIOS mode.
Cause	Issue in tboot utility.
Resolution	The issue is resolved in tboot version tboot-20200901_1.10.2-150400.3.4.1.
Systems affected	All Dell PowerEdge systems that are configured with TPM 2.0 or TPM 1.2 with Intel TXT support.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 4 and later.
Tracking number	256015

On updating firmware on a NVMe device, the nvme list command does not list the updated version

Description	On updating firmware on a NVMe device, the 'nvme list' command does not list the updated version. It lists the firmware version that existed before updating firmware. For more information, see SUSE Linux Enterprise Server Knowledge Base article 000021154.
Workaround	Execute the command to verify the firmware version `nvme id-ctrl /dev/nvme0n1` or the firmware version could be retrieved using iDRAC.

Resolution	The issue is resolved in following maintenance update kernels:
	`SLES 15 SP5 - kernel 5.14.21-150500.55.7.1`
	`SLES 15 SP4 - kernel 5.14.21-150400.24.63.1`

Systems affected	All Dell PowerEdge systems that support NVMe which support firmware activation without reset.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 4 and Service Pack 5.
Tracking number	261872

Operating system installer does not identify Dell BOSS-N1 device as boot optimized storage subsystem device

Description	On Dell PowerEdge systems with NVMe BOSS controller, the operating system installer does not identify the BOSS-N1 device as boot optimized storage subsystem device. If the system has multiple NVMe devices plugged in and the user wants to install the operating system on BOSS-N1 device, it is difficult to identify the BOSS device. For more information on BOSS-N1 device, see the storage controllers section at PowerEdge XR4520c Compute Sled.
Systems affected	All Dell PowerEdge systems which support BOSS-N1 controller.
Workaround	Switch to a terminal by pressing Ctrl+Alt+F2 and run the command `nvme list`. It lists the model as Dell BOSS-N1 for the NVMe BOSS device.
Resolution	The issue is resolved in SUSE Linux Enterprise Server 15 Service Pack 5.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 4.
Tracking number	225483

SLES 15 SP4 fails to boot with a message when UEFI secure boot is enabled BIOS

Description	On a system which has a OS with shim version 15.7 or later installed, trying to install SLES 15 SP4 fails with error message 'Verification failed: (0x1A) Security Violation' shown on console. The behavior is as expected. For more information, see SUSE Linux Enterprise Server Knowledge Base article 000021080.
Solution	Use latest Quarterly Update ISO image provided by SUSE to install SLES 15 SP4.
Systems affected	All Dell PowerEdge system.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 4
Tracking number	262219

Operating system stops responding when Intel E810 NICs are added to a bond device and the system is rebooted

Description	When Intel E810 device NIC ports are added to a bond device, operating system stops responding when: 1. The system is rebooted. 2. Slave interface is removed from bond device. 3. For any NIC in the system, a netdev_unregister event is generated.
Workaround	Workaround is not available when bonding is already created. If operating system stops responding, system may have to be reset. During reset, following steps will help to avoid the issue on next reboot on updating to the MU kernel with fix: 1. Boot into single user mode 2. cd to /etc/sysconfig/network-scripts/ 3. Delete the ifcfg-* files that are related to bonding. 4. Boot into multiuser mode 5. Install MU kernel version 5.14.21-150400.24.33 or later.
Solution	The issue is fixed in maintenance update kernel of SLES 15 SP4 (kernel version - 5.14.21-150400.24.33).
Systems affected	All Dell PowerEdge system with Intel ice driver network controller card.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 4
Tracking number	251807

System BIOS reports that system was reset due to timeout from operating system watchdog timer

Description	On systems when: ● Software Raid Dell PowerEdge RAID Controller S150/S140 is enabled ● SLES 15 SP3 installed ● Operating system (OS) watchdog timer is enabled in system BIOS The system BIOS reports that system was reset due to timeout from watchdog timer when the system is rebooted gracefully. Following message is displayed in BIOS Power On Self Test (POST): `UEFI0082: The system was reset due to a timeout from the watchdog timer. Check the System Event Log (SEL) or crash dumps from Operating System to identify the source that triggered the watchdog timer reset. Update the firmware or driver for the identified device.`
Workaround	The message can be ignored as the system reboots gracefully. The issue can be worked around by disabling OS watchdog timer in system BIOS.
Solution	The issue is resolved in SUSE Linux Enterprise Server 15 Service Pack 3 maintenance update kernel version kernel-default-5.3.18-150300.59.98.1.
Systems affected	All Dell PowerEdge servers
Applies to	SUSE Linux Enterprise Server 15 Service Pack 2 and later.
Tracking number	217524

Zoning changes on SFSS not reflected in the host

Description

NVMe-oF Transport Control Protocol (TCP) zoning changes made on Dell SmartFabric Storage Software (SFSS) that remove access to I/O controllers on NVMe subsystem are not reflected in the host. The host service **stacd**, a part of the **nvme-stas** package, automatically connects to the I/O controllers returned in response to the get log page command . Each I/O controller is represented as a Discovery Log Page Entry (DLPE) in response to the get log page command. When a zoning change is made on SFSS to remove access to one or more I/O controllers, the change is ignored and is not applied by the **stacd** service. **stacd** continues to connect to the I/O controllers returned by the existing DLPEs.

Workaround

Disconnect relevant controllers:

1. Remove all connections between the host and subsystem:

```
nvme disconnect -n <subnqn>
```

2. Remove only a single connection between the host and subsystem:

```
nvme disconnect -d <device>
```

Solution

The issue is resolved in nvme-stas 1.1.6. If the desired behavior is to disconnect I/O when an associated zoning change is implemented, the following changes are needed:

- # vi /etc/stas/stacd.conf
- sticky-connections=disabled
- # systemctl reload stacd

Applies to

SUSE Linux Enterprise Server 15 Service Pack 4

The version field in the output of the modinfo command for certain networking drivers is null

Description

The version field in the output of the modinfo command for certain networking drivers is null. The output of the modinfo command is similar to the following:

```
modinfo -F version i40e
<no output>
```

Workaround

Use the following command to retrieve the version of the network driver:

```
ethtool -i <interface name> | grep version
```

Solution

Expected Behavior - The version of modules was removed by upstream and drivers versions were set to the kernel version. For more information, see section 5.9.1 on SUSE Linux Enterprise Server Documentation.

Systems affected

All Dell PowerEdge servers

Applies to

SUSE Linux Enterprise Server 15 Service Pack 4.

Tracking number

232166

SLES15 SP3 fails to recover the device from downstream port containment

Description

When a downstream port containment (DPC) event is triggered on a root port to which NVMe device is connected, DPC recovery fails. PCI configuration space of NVMe device is not restored. System reboot is required to recover the NVMe device.

Cause	Issue in DPC recovery.
Workaround	Not available
Solution	The issue is resolved in SUSE Linux Enterprise Server 15 Service Pack 4.
Systems affected	All Dell PowerEdge systems with DPC capability that support NVMe devices.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 3.
Tracking number	222198

During the server operating system boot process, splash screen may not appear as expected

Description	During the server operating system boot process, splash screen may not appear as expected due to a fault in display theme. However, the server operating system boots successfully.
Cause	This issue is caused due to a race condition in the Plymouth sub package that caused a failure in the sub package dependency installation.
Workaround	None
Solution	The issue is resolved in the updated Plymouth package available at SUSE Linux Enterprise Server 15 Support. Issue is resolved in SUSE Linux Enterprise Server 15 Service Pack 4.
Systems affected	All Dell PowerEdge systems
Applies to	SUSE Linux Enterprise Server 15 Service Pack 3
Tracking number	199490

MD RAID layer is not notified of the surprise removal of Samsung NVMe devices

Description	When a virtual disk is created on the MD RAID layer using a Samsung NVMe device, the MD RAID layer is not notified of the surprise removal of the NVMe drive. The output of the **mdadm -D** command displays an incorrect status of the MD RAID virtual disk (VD). The issue is observed on Dell Express Flash PM1725a, PM1725b, Enterprise NVMe Agnostic (AGN) devices. The array status reporting is incorrect. When I/O operations are performed, I/O errors are observed as expected and the file-system changes to read-only.
Cause	The issue is related to handling devices which showcase multipath capability.
Workaround	Pass the **multipath=N** parameter to the nvme_core driver module.
Solution	The issue is resolved in the updated kernel package available at SUSE Linux Enterprise Server 15 Support.
Systems affected	All Dell PowerEdge systems with support for NVMe surprise removal feature.
Applies to	SUSE Linux Enterprise Server 15 ervice Pack 2 .
Tracking number	175555

The operating system installer does not display the MD virtual disks created using Dell Software RAID Controller under the guided setup

Description	If MD virtual disks are created using Dell Software RAID Controller on a hard disk that is not formatted before installation, the operating system installer may not display the MD virtual disks under the guided setup. For more information, see SUSE Linux Enterprise Server Knowledge Base article 000019839.
Solution	Format the hard drive before creating the MD virtual disk or pass the kernel boot parameter LIBSTORAGE_MDPART=1 to list the MD virtual disk under the guided setup.
Systems affected	All Dell PowerEdge servers
Applies to	SUSE Linux Enterprise Server 15 Service Pack 2 and later.
Tracking number	189521

Error message is displayed when firmware is updated using Linux .BIN files

Description	When firmware is updated using Linux .BIN files on a system that has a virtual disk size greater than 5 TB the following error message is displayed: `sh:line 1:4712 Aborted(core dumped)/sbin/blockdev --report/dev/sd* > /dev/null 2>&1` This message does not cause any functionality loss. Firmware update succeeds.
Workaround	This message does not cause any functionality loss and can be ignored. Firmware update succeeds.
Cause	Issue is caused by a buffer overflow in **/sbin/blockdev** utility when the virtual disk size greater than 5 TB.
Solution	The issue is resolved in the updated **util-linux** package available at SUSE Linux Enterprise Server 15 Support.
Systems affected	All Dell PowerEdge systems
Applies to	SUSE Linux Enterprise Server 15 and later.
Tracking number	205563

vsftpd utility may be terminated by out of memory killer process

Description	When FTP connections are established with a system running vsftpd server process, the vsftpd server process may be terminated by the out-of-memory killer process of the operating system. The following message is observed in dmesg and /var/log/messages: `vsftpd invoked oom-killer: gfp_mask=0x100cca(GFP_HIGHUSER_MOVABLE), order=0, oom_score_adj=0`
Workaround	Set **isolate_network=NO** in **/etc/vsftpd.conf**.
Solution	For more information, see SUSE Linux Enterprise Server Knowledge Base article 000020252.
Systems affected	All Dell PowerEdge systems

Applies to	SUSE Linux Enterprise Server 15 Service Pack 2 and later.
Tracking number	194493

Blue Screen of Death is observed on Windows Server 2019 and Windows Server 2022 virtual machines

Description	When Windows Server 2019 and Windows Server 2022 virtual machines installed on SLES 15 SP3 host operating system is left idle for some time, then Blue Screen of Death (BSOD) is observed on the virtual machines. For more information, see SUSE Linux Enterprise Server Knowledge Base article 000019839.
Workaround	Pass **split_lock_detect=off** kernel command line parameter to the SLES 15 SP3 operating system and restart the guest virtual machines.
Solution	Use the PTF kernel available from SUSE Linux Enterprise Server 15 Support.
Systems affected	All Dell PowerEdge systems using Intel Icelake CPUs.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 3
Tracking number	203509

Initramfs rebuild is not triggered automatically when KMP driver modules are installed

Description	Initramfs rebuild is not triggered automatically when KMP driver modules are installed. As a result, the initramfs does not include the newly installed drivers.
Work around	1. Rebuild initramfs manually after installing KMP using command **dracut -f**. 2. Pass **-b** option to **%suse_kernel_module_package** in the KMP spec file. 3. Use xz compression in KMP.
Solution	Update suse-module-tools package to version 15.3.8-3.5.1.x86_64.
Systems affected	All Dell PowerEdge systems
Applies to	SUSE Linux Enterprise Server 15 Service Pack 3
Tracking number	203669

/var/log/messages displays kernel warning messages in servers with NVDIMM-N persistent memory modules

Description	The following kernel warning messages are observed in dmesg and /var/log/messages on servers with NVDIMM-N persistent memory modules connected:
	`kernel: nd_region region1: scrub start while range 1 active`
	`kernel: WARNING: CPU: 14 PID: 14705 at ../drivers/acpi/nfit/core.c:3189 acpi_nfit_scrub+0x37b/0x3a0 [nfit]`

Solution	This is a cosmetic issue and does not affect functionality. The warning message that is displayed can be ignored.
Systems affected	Dell PowerEdge R750, Dell PowerEdge R750xa, Dell PowerEdge R650.

Applies to	SUSE Linux Enterprise Server 15 Service Pack 2 and later.
Tracking number	94487

/proc/mdstat and mdadm -D commands display incorrect statuses when two NVMe devices are surprise removed from a RAID 5 MD array

Description	When two of three NVMe devices are surprise removed from a RAID 5 MD array, the command **cat/proc/mdstat** displays the array status incorrectly as **active**. Similarly, when the status of the MD RAID is queried using the **mdadm -D /dev/mdN** command, the number of **active** and **working** devices displayed is two. Only the status of the array reported is incorrect. However, when I/O operations are performed, I/O errors are observed as expected.
Cause	When the number of devices that are surprise removed Dell exceeds the number of devices that are required for the array to function, the MD status is not updated.
Solution	The behavior is working as designed. For more information, see SUSE Linux Enterprise Server Knowledge Base article 000019810.
Systems affected	All Dell PowerEdge systems.
Applies to	SUSE Linux Enterprise Server 15 ervice Pack 2 .
Tracking number	182820

BIOS update does not complete when an update is performed using the Linux .BIN files

Description	BIOS update does not complete when an update is performed using the Linux .BIN files.
Cause	Interaction with Intel Management Engine Interface (Intel MEI) results in cold reboot instead of warm reboot.
Workaround	Exclude the mei and mei_me drivers.
Solution	The issue is resolved in SUSE Linux Enterprise Server 15 Service Pack 2 maintenance update kernel version kernel-default-5.3.18-24.24.1. For more information, see SUSE Linux Enterprise Server Knowledge Base article 000019739.
Systems affected	Dell PowerEdge R240, Dell PowerEdge R340, Dell PowerEdge T140, and Dell PowerEdge T340.
Applies to	SUSE Linux Enterprise Server 15 ervice Pack 2 .
Tracking number	177205

The owsmangencert.sh script fails and reports an error

Description	The following error is displayed when a self-signed certificate is being created for the OpenWSMAN server using the owsmangencert.sh script:

```
Cannot write random bytes:
139974501831104:error:2407007A:random number
```

```
generator:RAND_write_file:Not a regular file:crypto/rand/
randfile.c:183:Filename=/dev/random
```

Cause	Using /dev/random is deprecated in OpenSSL 1.1.1.
Workaround	Comment out the RANDFILE parameters inside /etc/openwsman/ssleay.cnf and /etc/openwsman/owsmangencert.sh.
Solution	The issue is resolved in SUSE Linux Enterprise Server 15 Server Pack 2 maintenance update openwsman version openwsman-2.6.7-3.9.1. For more information, see SUSE Linux Enterprise Server Knowledge Base article 000019729.
Systems affected	All Dell PowerEdge systems
Applies to	SUSE Linux Enterprise Server 15 ervice Pack 2 .
Tracking number	174013

RAID level is displayed incorrectly when a virtual disk created by Dell RAID Controller S150 is degraded

Description	When the virtual disk created using Dell RAID Controller S150 is degraded the **mdadm -D /dev/mdN** command displays the RAID level incorrectly. RAID 0 is displayed instead of RAID 1.
Cause	The operating system considers the virtual disk that is created by Dell RAID Controller S150 as a foreign VD as the name assigned to the VD is of the form VirtualDiskN.
Workaround	Use the keyword ARRAY in /etc/mdadm.conf command to add the virtual disk on the allow-list.
Solution	Issue is resolved in following Program Temporary Fixes (PTF), see SUSE Linux Enterprise Server 15 Support.
Systems affected	All Dell PowerEdge systems
Applies to	SUSE Linux Enterprise Server 15 Service Pack 2
Tracking number	174628

Status of the RAID 0 LV is displayed as Available when one of the members of the RAID array is surprise removed

Description	When Logical Volume Manager (LVM) is used to create a RAID 0 array and a member of the RAID array is surprise removed, the **lvdisplay** command shows the LV status as **Available**.
Solution	Use the command **lvs -o +lv_health_status** to check the status of the RAID array. The command displays the output **Partial** when a member of the RAID array is removed.
Systems affected	All Dell PowerEdge systems
Applies to	SUSE Linux Enterprise Server 15 Service Pack 2 .
Tracking number	175865

Logical Volume Manager (LVM) does not activate a free physical volume when one of the NVMe devices is surprise removed

Description	When one of the members of a RAID 1 LVM array is surprise removed, the LVM does not replace the removed device with a free physical volume (PV) that is available in the volume group.
Cause	The issue is related to the handling of failover logic in the LVM.
Workaround	The command **lvconvert --repair** can be used to add the free PV to the RAID 1 LVM array.
Solution	The issue is resolved in the Maintanance Update lvm2 version lvm2-2.03.05-8.6.1. For more information, see SUSE Linux Enterprise Server Knowledge Base article 19717.
Systems affected	All Dell PowerEdge systems with support for NVMe surprise removal feature.
Applies to	SUSE Linux Enterprise Server 15 SP1 .
Tracking number	175882

The dmidecode utility displays the slot type as <OUT OF SPEC> for PCIe Gen 4 NVMe slots

Description	The dmidecode utility displays the Slot Type field of Type 9 record as `<OUT OF SPEC>` for PCIe Generation 4 NVMe slots.
Cause	The dmidecode utility does not support the Slot Type value of 0x24 that is defined in System Management BIOS (SMBIOS) version 3.4.
Solution	The issue is resolved in SUSE Linux Enterprise Server 15 Service Pack 2 maintenance update dmidecode version dmidecode-3.2-9.6.1.
Systems affected	Dell PowerEdge R6515, Dell PowerEdge R7515, Dell PowerEdge R6525, Dell PowerEdge R7525, and Dell PowerEdge C6525.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 1 and later.
Tracking number	171945

Software RAID virtual disk not detected during SLES 15 installation

Description	When you create a software RAID virtual disk using Dell PowerEdge S130 and S140 controller, the virtual disk created is not detected during SLES 15 installation.
Workaround	Before starting SLES 15 installation, pass the Kernel boot parameter: `"LIBSTORAGE_MDPART=1"`.
Solution	The issue is resolved in SUSE Linux Enterprise Server 15 SP1.
Systems affected	N/A
Applies to	SUSE Linux Enterprise Server 15
Tracking number	100806

Running supportconfig reboots the server with AMD processor

Description	When you run **supportconfig** on Dell PowerEdge servers with LRDDR4 DIMMs, the system reboots the server.
Solution	Update the Kernel to kernel-default-4.12.14-25.16.1 version or later.
Systems affected	N/A
Applies to	SUSE Linux Enterprise Server 15
Tracking number	108845

Root user login fails after run level is switched

Description	After switching from run level 3 to run level 5, root user cannot login to the operating system.
Workaround	Upgrade systemd update to systemd -234-24.15.1.x86_64 update or later.
Solution	The issue is resolved SUSE Linux Enterprise Server 15 SP1.
Systems affected	N/A
Applies to	SUSE Linux Enterprise Server 15
Tracking number	101585

ACPI error messages are displayed

Description After you install SLES 15, and boot into it, following error messages are displayed:

```
[ACPI Error]: [\_SB_.PCI0.XHC_.RHUB.HS11] Namespace lookup failure,
AE_NOT_FOUND (20170303/dswload-210)
[ACPI Exception]: AE_NOT_FOUND, During name lookup/catalog (20170303/
psobject-241)
[ACPI Exception]: AE_NOT_FOUND, (SSDT:xh_rack0) while loading table
(20170303/tbxfload-228)
[ACPI Error]: 1 table load failures, 8 successful (20170303/
tbxfload-246)
```

Workaround	These messages do not cause any functionality loss. They can be ignored.
Solution	The issue is resolved in SUSE Linux Enterprise Server 15 SP1.
Systems affected	Dell PowerEdge T340, Dell PowerEdge T140, Dell PowerEdge R340, and Dell PowerEdgeR240.
Applies to	SUSE Linux Enterprise Server 15
Tracking number	114376

Unable to create or modify namespace for NVDIMM

Description When you create or modify a namespace for NVDIMM, it fails.

Workaround Use the "`--no-autorelabel`" option while creating or modifying the namespace. For example:

- Creating namespace—`#ndctl create-namespace -r region0 -m raw -f --no-autolabel`
- Modifying namespace—`#ndctl create-namespace --mode raw -e namespace0.0 -f --no-autolabel`

Solution	The issue is resolved in SUSE Linux Enterprise Server 15 SP1.
Systems affected	All yx4x Dell PowerEdge systems that have NVDIMM installed. **NOTE:** The PowerEdge servers are represented using the generic naming convention. To identify the range of server models, see Identifying the series of your PowerEdge servers.
Applies to	SUSE Linux Enterprise Server 15
Tracking number	119207

Dell PowerEdge AMD Server is not booting to OS after enabling the SME/SEV feature

Description	After you install SLES 15 on Dell PowerEdge AMD Server and then when you try to boot into OS with kernel boot parameter **mem_encrypt=on**, server does not boot. This kernel boot parameter enables the AMD SME/SEV feature. This behavior is seen when OS is installed on PERC VD. Also, PERC VDs are not detected during SLES 15 OS installation, when you pass kernel boot parameter **mem_encrypt=on**.
Workaround	To fix the issue, download the kernel from SUSE Linux Enterprise Server 15 Support.
Solution	The issue is resolved in SUSE Linux Enterprise Server 15 SP2, SUSE Linux Enterprise Server 15 SP1 Maintenance Update kernel-default-4.12.14-197.18.1 version and later. For more information, see SUSE Linux Enterprise Knowledge Base article 000019539.
Systems affected	Dell PowerEdge AMD servers
Applies to	SUSE Linux Enterprise Server 15 SP1
Tracking number	134814

When system reboots, system stops responding at the end of the reboot process

Description	When the system reboots, system stops responding at the end of the reboot process. When the system is in this state, it does not respond to keyboard or mouse device and iDRAC virtual console displays the **No signal** message.
Workaround	To recover the system, perform any one of the following: • Using iDRAC GUI, on the **Dashboard** page, click **Graceful Shutdown** drop-down, and then select **Reset System(warm reboot)**. • Restart the system by pressing the Power button.
Solution	Update system BIOS to 1.4.8 version.
Systems affected	Dell PowerEdge R6515, Dell PowerEdge R6525, Dell PowerEdge R7515, and Dell PowerEdge C6525.
Applies to	SUSE Linux Enterprise Server 15 SP1 .
Tracking number	141837

Servers with the AMD Rome processor are unable to read the boost states using cpupower

Description	Servers with the AMD Rome processor are unable to read the boost states using the cpupower tool. The cpupower tool is unable to read the mperf/aperf registers in the AMD Rome processor, and thus unable to collect the information about boost states. It reports the number of boost states as zero.

Solution	The issue is resolved in cpupower-4.19-6.5.1.x86_64.rpm version. For more information, see SUSE Linux Enterprise Server Knowledge Base article 000019637.
Systems affected	All Dell PowerEdge servers
Applies to	SUSE Linux Enterprise Server 15 SP1
Tracking number	149656

PowerEdge servers with the AMD Rome processor fail to detect an NVMe drive after multiple hot plugs

Description

The PowerEdge servers with the AMD Rome processor fail to detect an NVMe drive after multiple hot plugs.

Cause

Issue in pciehp driver.

Workaround

NOTE: The output of each command varies based on your system configuration.

Follow the steps:

1. Identify the parent device to which the NVMe device is connected using the following command:

```
lspci -t

-+-[0000:e0]-+-00.0
|            +-00.2
|            +-01.0
|            +-02.0
|            +-03.0
|            +-03.1-[e2]----00.0
```

   From the above snippet, the device `e2:00.0` is the NVMe device and the device `e0:03.1` is the parent device. The parent device is used for the steps that are described subsequently.

2. Read the **Slot Status Register** in the PCI Express Capability structure by running the following command:

```
setpci -s e0:03.1 CAP_EXP+0x1a.w
```

   Output: 0148 (value returned)

3. Clear the event bits that are impacted by running the following command:

```
setpci -s e0:03.1 CAP_EXP+0x1a.w=0x0108
```

4. Re-read the **Slot Status Register** to confirm that event bits are cleared by running the following command:

```
setpci -s e0:03.1 CAP_EXP+0x1a.w
```

   Output: 0040 (value returned)

5. Unplug the drive and then plug-in the drive after clearing the event bits.

Solution	The issue is resolved in SUSE Linux Enterprise Server 15 SP2.
Systems affected	Dell PowerEdge R6515, Dell PowerEdge R7515, Dell PowerEdge R6525, Dell PowerEdge C6525, and Dell PowerEdge R7525.
Applies to	SUSE Linux Enterprise Server 15 SP1 .
Tracking number	155501, 155503

When booting the system from iSCSI with Mellanox CX-4 and CX-5 adapters, the system reports csum failure message

Description	When booting the system from iSCSI with Mellanox CX-4 and CX-5 adapters, the following message is displayed in the `dmesg` and **/var/log/messages** reports: `localhost kernel: ibft0: hw csum failure` This message can be ignored.
Cause	Some networking switches which are sending frames with nonzero padding bytes maybe causing the issue.
Workaround	Install out-of-box drivers. For more information, see Red Hat Knowledge Base article 4742111.
Solution	The issue is resolved in SUSE Linux Enterprise Server 15 SP2.
Systems affected	All Dell PowerEdge systems
Applies to	SUSE Linux Enterprise Server 15 SP1 .
Tracking number	156922

Linux operating system fails to detect the Intel x710 card

Description	The i40e in-box driver is not enabled to detect an Intel x710 NIC. NIC details can be identified by running the command **lspci**. The output of the command is as follows:
	`Ethernet controller: Intel Corporation Ethernet Controller x710 for 10GBASE-T`
	`Vendor ID: 8086`
	`Device ID: 15FF`
	The following installation kit from SUSE Linux Enterprise Server can be used for network-based deployments in systems with Intel x710 NIC: Dell PowerEdge Installation Kit.

Cause	The i40e in-box driver is not enabled to detect an Intel x710 NIC.
Workaround	Install the out-of-box drivers.
Solution	The issue is resolved in SUSE Linux Enterprise Server 15 SP2, SUSE Linux Enterprise Server 15 SP1 Maintenance Update kernel-default-4.12.14-197.29.1 version and later.
Systems affected	Dell PowerEdge R6515, Dell PowerEdge R6525, Dell PowerEdge R7515, Dell PowerEdge C6525, and Dell PowerEdge R7525.
Applies to	This issue is resolved in SUSE Linux Enterprise Server 15 SP21
Tracking number	146136, 146448, 146451, 152855

System crashes when rebooted with SR-IOV-enabled QLogic cards

Description	When the system is rebooted with SR-IOV-enabled QLogic cards, the system crashes and generates a coredump (vmcore) in **/var/crash**.

Cause	The system crash is due to an issue in the qede driver.
Workaround	Disable SR-IOV before rebooting the system. To disable SR-IOV, run the following command: `echo0 > /sys/class/net/network inteface name/device/sriov_numfs`
Solution	The issue is resolved in Red Hat Enterprise Linux 7.8 and later. For more information, see SUSE Linux Enterprise Server Knowledge Base article 4991311.
Systems affected	All Dell PowerEdge servers
Applies to	SUSE Linux Enterprise Server 15 SP1
Tracking number	151479, 152995, 152997

Component updates in systems with iSM installed on SUSE Linux Enterprise Server 15 SP1 operating system generates watchdog timer expired messages

Description	Firmware updates performed using Linux DUP files with iSM running in the background generates watchdog timer expired events in the Lifecycle Controller log files.
Cause	Latest updates in the ipmi driver allow ipmi driver to unload, though the **/dev/ipmi** is in use by user space tools. Firmware DUPs try reloading the ipmi driver while running. Running Linux DUPs breaks the iSM connection with iDRAC and causes iDRAC to register the connection break after a timeout. After the firmware update is completed, the iSM connection with iDRAC is reestablished.
Solution	The issue is resolved in SUSE Linux Enterprise Server 15 SP2, SUSE Linux Enterprise Server 15 SP1 Maintenance Update Kernel 4.12.14-197.34.1 version and later. For more information, see SUSE Linux Enterprise Server Knowledge Base article 000019602.
Systems affected	All Dell PowerEdge yx4x and yx5x servers.
Applies to	SUSE Linux Enterprise Server 15 SP1
Tracking number	155847

Servers with the AMD Rome processor display a CCP initialization failure message in dmesg

Description	Servers with AMD Rome processor display the following messages in dmesg:
	`CCP initialization failed`
	`PSP Initialization failed`
	The CCP message indicates that the CCP device is not available. The PSP message indicates its dependency on the SEV feature.

Solution	This issue is resolved in SUSE Linux Enterprise Server 15 SP2.
Systems affected	Dell PowerEdge R6515, Dell PowerEdge R6525, Dell PowerEdge R7515, Dell PowerEdge R7525, and Dell PowerEdge C6525.
Applies to	This issue is resolved in SUSE Linux Enterprise Server 15 SP1.
Tracking number	144920

After kernel update, the NFIT errors are displayed

Description	When a system with NVDIMM-N/AEP is booted into SUSE Linux Enterprise Server 15 SP1, dmesg displays unknown symbol messages. This issue is cosmetic. The following are examples of NVDIMM firmware interface table (NFIT) error messages that are displayed in dmesg: • Unknown symbol nvdimm_blk_region_create (err 0) • Unknown symbol nvdimm_region_notify (err 0) • Unknown symbol to_nvdimm_bus (err 0)
Solution	The issue is resolved in SUSE Linux Enterprise Server 15 SP2.
Systems affected	All Dell PowerEdge yx4x and yx5x servers
Applies to	SUSE Linux Enterprise Server 15 SP1
Tracking number	156042

System reboots when high-level storage I/O operations are performed on NVMe drives

Description

When the level of system storage I/O operations is high, the NMI watchdog reports a CPU hard lockup. The following message is displayed in dmesg, and the system reboots:

```
NMI watchdog: Watchdog detected hard LOCKUP on cpu 70
```

This issue is observed when NVMe drives have the ext4 or ext3 file systems. When NVMe drives have the XFS file systems, this issue is not observed.

Cause

There is an issue with the writeback throttling.

Workaround

Run the following command:

```
echo 0 > /sys/block/nvme0n1/queue/wbt_lat_usec
```

NOTE: This workaround may impact system performance. It is recommended that you upgrade the kernel version of your system to kernel-default-4.12.14-197.18.1 and later.

Systems affected	Dell PowerEdge R6515, Dell PowerEdge R6525, Dell PowerEdge R7515, Dell PowerEdge R7525, and Dell PowerEdge C6525.
Applies to	SUSE Linux Enterprise Server 15 SP1
Tracking number	155883

5

Known issues

Topics:

Detected 'ACPI: _OSC evaluation for CPUs failed, trying _PDC' messages in the dmesg log

Description	On Dell PowerEdge systems running SLES 15 SP7, the following ACPI-related messages are detected in the dmesg log: `ACPI: _OSC evaluation for CPUs failed, trying _PDC`
Cause	In ACPI 3.0, the use of _PDC is deprecated in favor of _OSC. However, for backward compatibility, _PDC may be implemented as a fallback.
Workaround	There is no resolution and these entries in dmesg are expected.
Systems affected	All the PowerEdge systems
Applies to	SUSE Linux Enterprise Server 15 Service Pack 7
Tracking number	324478

Operating System deployment on PowerEdge servers fails

Description	Deployment of SUSE Linux Enterprise Server 15 SP6 and later on NVMe over TCP volumes on Dell PowerEdge servers fails during installation, resulting in an exit code 139.
Cause	The current grub2-2.12-150600.6.13 and later versions in SUSE Linux Enterprise Server 15 Service Pack 6 and subsequent releases are unable to manage the translation of logical devices for NVMeoF paths.
Workaround	Disable Secure Boot before deploying the operating system on an NVMeoF volume. This issue will be resolved in the SUSE Linux Enterprise Server 15 Service Pack 7 maintenance release.
Systems affected	All the PowerEdge systems
Applies to	SUSE Linux Enterprise Server 15 Service Pack 6 and later.
Tracking number	326668

Yast2 output gives a shorter description of the Broadcom Thor-2 Westwood Adapter

Description	On a Dell PowerEdge system configured with Broadcom 57608 NIC (Thor-2 Westwood Adapter), Yast2 displays a short description name for the configured NIC. Yast2 output displays as below:
	`Broadcom Ethernet Controller DHCP p2p1`
	`Broadcom Ethernet Controller DHCP p2p2`
	lspci output displays as below:
	`21:00.0 Ethernet controller: Broadcom Inc. and subsidiaries BCM57608 NetXtreme-E 10Gb/25Gb/40Gb/50Gb/100Gb/200Gb Ethernet 9rev 11)`
	`21:00.1 Ethernet controller: Broadcom Inc. and subsidiaries BCM57608 NetXtreme-E 10Gb/25Gb/40Gb/50Gb/100Gb/200Gb Ethernet 9rev 11)`

Workaround	See the above mentioned lspci output for the detailed name of BCM 57608 NIC.
Systems affected	All the systems configured with Broadcom Thor 2 NIC.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 6
Tracking number	307598

SLES15 SP5 operating system hangs during the reboot stress

Description	Performing a reboot on a Dell PowerEdge system that is configured with PERC controller and SLES 15 SP5 installed on it leads to a system crash showing a blank screen. The issue is specific to PERC configuration, where megaraid_sas driver is loaded and the issue reproduces after 100 reboots, which is not in line with real-world customer scenarios.
Systems affected	All Dell PowerEdge systems configured with PERC controller.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 5
Tracking number	281248

Booting into operating system fails on systems with TPM 1.2 chips

Description	On systems with TPM 1.2 chips, booting into operating system fails when **TPM Security** field is set to **On without Pre-boot Measurements** in BIOS.
Cause	When the option **On without Pre-boot Measurements** is set in BIOS, the shim utility cannot write to TPM PCR registers. Shim considers this as a fatal error and fails to boot.
Workaround	In BIOS, set **TPM Security** field to **On with Pre-boot Measurements**.
Systems affected	All Dell PowerEdge systems supporting TPM 1.2
Applies to	SUSE Linux Enterprise Server 15 Service Pack 1 and later.
Tracking number	209250, 209177

Dell Controlled Turbo feature is not functional

Description	Dell Controlled Turbo is not functional when the system profile setting in BIOS is set to performance or custom.
Cause	The intel_pstate driver may interfere with the processor settings which results in Dell Controlled Turbo feature being not functional.
Solution	Prevent the intel_pstate driver from loading. For more information on how to prevent module from loading, see section 23.2.2 on SUSE Linux Enterprise Server Documentation.
Applies to	SUSE Linux Enterprise Server 15 Service Pack 2
Tracking number	167802

Unable to shut down SLES when the graceful shutdown option from iDRAC is selected or when power button is pressed on the server

Description	When you select the **Graceful Shutdown** option from any system management interface such as iDRAC or press the power button, the system goes to a suspended state and all the tasks stop. Even the firmware updates from iDRAC interface that requires restart, takes longer time to update, and the system will be Hard reset upon iDRAC watchdog time expiration.
Applies to	SUSE Linux Enterprise Server 15
Workaround	Change the power settings. 1. Go to **Settings** > **Power**. 2. In the **Suspend and power button** section, select **Power Off** from the **When the Power Button is pressed** drop-down list. **NOTE:** By default the **Suspend** option is selected. **NOTE:** The workaround may not work when the system is locked. Gnome prevents accidental shutdown when the system is locked. As a security precaution, Gnome does not allow any power related actions such as shutdown from any system management interfaces like iDRAC or when the power button is pressed unless the user is active and logged-in to OS.
Systems affected	N/A
Tracking number	109126

6

Limitations

This section summarizes the various limitations that exists in SUSE Linux Enterprise Server 15 GA.

- For information on Trusted Boot with xen, see Trusted boot not supported by Xen.
- For information on Kernel limitations, see Kernel Limits.
- For information on KVM limitations, see KVM Limits.
- For information on Xen limitations, see Xen Limits.

7

Instructions for installing and upgrading SLES

Topics:

Downloading SLES

You can standardize on SUSE Linux Enterprise with expanded support by downloading SLES 15 at SUSE Linux Enterprise Server Products.

Installation prerequisites

Minimum Linux server system requirements

- Local installation: 1024 MiB RAM, and 512 MiB Swap recommended
- 2 GiB available disk space (more disk space recommended, 8.5 GiB for all patterns)
- 32 GiB for snapshot or rollback of the operating system

Recommendations for specific uses

- 1–8 GiB RAM, at least 512 MiB per CPU
- 8 GiB hard-disk space, 32 GiB for snapshot or rollback of the operating system
- Network interface
- For print servers—a faster processor or more processors are required to improve server-based printing
- For web servers—more RAM to improve caching, and more processors are required to improve web application performance
- For database servers—more RAM to improve caching, and multiple disks for parallel I/O
- For file servers—more memory and disks, or a Redundant Array of Inexpensive Disks (RAID) system to improve I/O throughput

Installation process

For detailed installation, prerequisites, and configuration instructions, see the *Dell PowerEdge Systems SUSE Linux Enterprise Server 15 Installation Instructions and Important Information Guide* at Operating System Manuals.

Upgrade process

- For upgrading from previous versions of SLES to SLES15, see SUSE product documentation.
- For detailed information on upgrade related information for SUSE Linux Enterprise Server 15 GA, see Upgrade-Related Notes.

8

Resources and support

Topics:

Related documentation for Linux

NOTE: For all PowerEdge and PowerVault documentation, go to **Dell.com/poweredgemanuals** and **Dell.com/powervaultmanuals**. Enter the system Service Tag to get your system documentation.

NOTE: For information about deploying Virtualization, see the product documentation available at .

Product documentation from Linux includes:

- Installation Guide
- Release Notes

NOTE: For more information about Dell PowerEdge servers compatibility with supported operating systems, see **Dell.com/ossupport**.

NOTE: For more information about Dell PowerEdge servers compatibility with supported operating systems on Dell TechCenter, see Linux operating system Support on Dell PowerEdge Servers.

Documentation resources

This section provides information about the documentation resources for your server.

Table 1. Additional documentation resources for your server

Task	Document	Location
Setting up your server	For information about installing the server into a rack, see the Rack documentation included with your rack solution Or the Getting Started With Your System document that is shipped with your server.	Dell.com/poweredgemanuals
	For information about turning on the server and the technical specifications of your server, see the Getting Started With Your System document that is shipped with your server.	Dell.com/poweredgemanuals
Configuring your server	For information about the iDRAC features, configuring and logging in to iDRAC, and managing your server remotely, see the Integrated Dell Remote Access Controller User's Guide.	Dell.com/idracmanuals

Table 1. Additional documentation resources for your server (continued)

Task	Document	Location
	For information about installing the operating system, see the operating system documentation.	Dell.com/operatingsystemmanuals
	For information about understanding Remote Access Controller Admin (RACADM) subcommands and supported RACADM interfaces, see the RACADM Command Line Reference Guide for iDRAC.	Dell.com/idracmanuals
	For information about updating drivers and firmware, see the Methods to download firmware and drivers section in this document.	Dell.com/support/drivers
Managing your server	For information about servers management software offered by Dell, see the Dell OpenManage Systems Management Overview Guide.	Dell.com/openmanagemanuals
	For information about setting up, using, and troubleshooting OpenManage, see the Dell OpenManage Server Administrator User's Guide.	Dell.com/openmanagemanuals
	For information about installing, using, and troubleshooting Dell OpenManage Essentials, see the Dell OpenManage Essentials User's Guide.	Dell.com/openmanagemanuals
	For information about installing and using Dell SupportAssist, see the Dell SupportAssist Enterprise User's Guide.	Dell.com/serviceabilitytools
	For understanding the features of Dell Lifecycle Controller (LC), see the Lifecycle Controller User's Guide.	Dell.com/idracmanuals
	For information about partner programs enterprise systems management, see the OpenManage Connections Enterprise Systems Management documents.	Dell.com/omconnectionsenterprisesystemsmanagement
	For information about viewing inventory, performing configuration, and monitoring tasks, remotely turning on or off servers, and enabling alerts for events on servers and components using the Dell Chassis Management Controller (CMC), see the CMC User's Guide.	Dell.com/esmmanuals

Table 1. Additional documentation resources for your server (continued)

Task	Document	Location
Working with the Dell PowerEdge RAID controllers	For information about understanding the features of the Dell PowerEdge RAID controllers (PERC) and deploying the PERC cards, see the Storage controller documentation.	Dell.com/storagecontrollermanuals
Understanding event and error messages	For information about checking the event and error messages generated by the system firmware and agents that monitor server components, see the Dell Event and Error Messages Reference Guide.	Dell.com/openmanagemanuals > OpenManage software
Troubleshooting your system	For information about identifying and troubleshooting the PowerEdge server issues, see the Server Troubleshooting Guide.	Dell.com/poweredgemanuals

Identifying the series of your PowerEdge servers

The PowerEdge series of servers are divided into different categories based on their configuration. They are referred as YX2X, YX3X, YX4X, YX4XX, or YX5XX series of servers. The structure of the naming convention is described below:

The letter Y denotes the character in the server model number. The character denotes the form factor of the server. The form factors are listed below:

- C- Cloud
- F- Flexible
- M or MX- Modular
- R- Rack
- T- Tower

The letter X denotes the numbers in the server model number. The number denotes multiple characteristics about the server. They are listed as follows:.

- The first digit (X) denotes the value stream or class of the server.
  - 1-5—iDRAC basic
  - 6-9—iDRAC Express
- The second digit denotes the series of the server. It is retained in the server naming convention and does not replace the letter X.
  - 0—series 10
  - 1—series 11
  - 2—series 12
  - 3—series 13
  - 4—series 14
  - 5—series 15
- The last digit (X) always denotes the make of the processor as described below:
  - 0-Intel
  - 5-AMD

NOTE: For servers that use an AMD processor, the model number is made up of four digits instead of three. The third digit (X) denotes the number of processor sockets that the series of server supports.

- 1–one socket server
- 2–two socket server

Table 2. PowerEdge servers naming convention and examples

YX3X servers	YX4X servers	YX4XX servers	YX5XX servers
PowerEdge M630	PowerEdge M640	PowerEdge R6415	PowerEdge R6515
PowerEdge M830	PowerEdge R440	PowerEdge R7415	PowerEdge R7515
PowerEdge T130	PowerEdge R540	PowerEdge R7425	PowerEdge R6525

Downloading the drivers and firmware

Dell recommends that you download and install the latest BIOS, drivers, and systems management firmware on your system.

Ensure that you clear the web browser cache before downloading the drivers and firmware.

1. Go to **Dell.com/support/drivers**.
2. Under the **Drivers & Downloads** section, type the Service Tag of your system in the **Service Tag or Express Service Code** box, and then click **Submit**.

   NOTE: If you do not have the Service Tag, select **Detect My Product** to allow the system to automatically detect your Service Tag, or under General support, navigate to your product.

3. Click **Drivers & Downloads**.
   The drivers that are applicable to your selection are displayed.
4. Download the drivers to a USB drive, CD, or DVD.

9

Contacting Dell Technologies

Dell Technologies provides several online and telephone-based support and service options. Availability varies by country, region, and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues, see Contact Dell.

If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or the product catalog.