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WHAT IS THE DIFFERENCE BETWEEN LINUX IN-DISTRO DRIVERS AND OUT-OF-DISTRO DRIVERS?

Linux OS Partner Drivers

An In-Distro driver (also known as an inbox driver) is a driver that comes within each Linux distribution release. These drivers come from the upstream Linux Kernel Community and support a wide range of devices such as network controllers, fibre controllers, SCSI controllers, array controllers, and other peripheral devices.

Out-of-Distro drivers (also known as an out-of-box driver) are not included in the Linux distribution. These drivers are maintained and downloadable from HPE and/or HPE hardware partner sites and are typically installed by a system administrator or a user after the Linux operating system has been deployed.

For In-Distro drivers, the source code is initially submitted to upstream Linux source repositories by the HPE hardware partner, to be maintained by the Linux Open-Source community. Each Linux distribution is the owner of the In-Distro driver and provides support for the driver for that distribution. The In-Distro driver can be updated by following the Linux distribution's patching methods. This typically involves the installation of an updated kernel using the distribution's package manager. Alternatively, the In-Distro driver can be overwritten with Out-of-Distro drivers supplied by HPE and/or HPE partners. At HPE we supply pre-compiled kernel module drivers for many of our supported devices. Source code is available for all Gnu Public License (GPL) software.

HPE gives customers a choice to run either In-Distro drivers or Out-of-Distro drivers maintained by HPE and/or HPE hardware partners.

HPE certifies HPE Server hardware using the In-Distro drivers released with the Linux distribution. This certification is to ensure the server is tested and supported by the Linux distribution. To view the supported Linux / Server support matrix, see the following URL:

https://techlibrary.hpe.com/us/en/enterprise/servers/supportmatrix/index.aspx

A few important notes about In-Distro drivers vs. Out-of-Distro drivers supplied by HPE and HPE hardware partners.

Two Different Code Bases

In some cases, the code base may differ between the In-Distro driver and the Out-of-Distro driver. The Out-of-Distro driver may have additional functionality not in the upstream kernel. Additionally, the Out-of-Distro driver may be used to quickly deliver new functionality and/or defect fixes that have not completed the upstream process yet. Because of the different code bases, In-Distro driver versions can't be correlated with the Out-of-Distro driver versions.

HPE and HPE Hardware Partner Qualification of Drivers

HPE and our hardware partners test Out-of-Distro drivers along with new firmware builds to ensure compatibility between Out-of-Distro drivers and new firmware. This is necessary to ensure new features and/or defect fixes are compatible with the new driver/firmware combination, and compatible within the HPE Server configurations. After an HPE Server is released and certified, the Service Pack for ProLiant is used to deliver newly qualified HPE Software/Drivers/Firmware combinations and is released approximately two times per year. Other HPE Server Product families have their own Service Pack (for example the Synergy Service Pack).

NOTE

When downloading drivers and/or firmware from HPE.com, the release notes may document dependencies between HPE supplied drivers and firmware due to compatibility issues with older drivers.

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Linux OS Vendor testing of the distribution only consists of In-Distro drivers. In addition, all Linux distribution certification and qualification requires the use of In-Distro drivers.

In-Distro vs Out-of-Distro Driver Support

Out-of-Distro drivers are only supported by HPE and HPE hardware partners, regardless of who provides general OS support (Linux OS Vendor or HPE).

If the Linux subscription is purchased from the Linux OS Vendor, only the In-Distro drivers are supported by the Linux OS Vendor and HPE provides support for the HPE Out-of-Distro drivers. If the Linux subscription is purchased through HPE, both HPE Out-of-Distro drivers and In-Distro drivers are supported by HPE.

HPE encourages all HPE Hardware partners to submit all drivers and driver updates into the upstream Linux Kernel Community.

Support for New Hardware

HPE occasionally introduces a new device after a certain version of the Linux distribution is released and the In-Distro driver may not support new hardware. Until the In-Distro driver has been modified to support the new hardware, an Out-of-Distro driver is required or the use of the Linux OS Vendor out of cycle process (the Driver Update Program (DUP) for Red Hat and the Driver Kits from the SUSE SolidDriver Program).

Firmware Update and Driver Version Requirements

In some cases, flashing firmware requires Out-of-Distro drivers specifically with online firmware update tools. If you use In-Distro drivers, firmware may be flashed via iLO (fwpkg files) or, for example, by booting the Service Pack for ProLiant (SPP) in off-line mode. Other HPE Server Product families have their own Service Pack.

For more information on flashing Firmware via iLO see HPE iLO 5 User guide.

See firmware release notes for additional information and dependencies.

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