



# Release Notes

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## openSUSE Leap 42.1

openSUSE Leap is a free and Linux-based operating system for your PC, Laptop or Server. You can surf the web, manage your e-mails and photos, do office work, play videos or music and have a lot of fun!

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If you upgrade from an older version to this openSUSE Leap release, see previous release notes listed here: [http://en.opensuse.org/openSUSE:Release\\_Notes](http://en.opensuse.org/openSUSE:Release_Notes) ↗

# 1 Installation

## 1.1 Base System Installation

`SuSEfirewall2` and `yast2` have been removed from the “minimal base system” to save space. If you need it, select `SuSEfirewall2` or `patterns-openSUSE-yast2_basis`.

## 1.2 UEFI—Unified Extensible Firmware Interface

Prior to installing openSUSE on a system that boots using UEFI (Unified Extensible Firmware Interface), you are urgently advised to check for any firmware updates the hardware vendor recommends and, if available, to install such an update. A pre-installed Windows 8 is a strong indication that your system boots using UEFI.

*Background:* Some UEFI firmware has bugs that cause it to break if too much data gets written to the UEFI storage area. Nobody really knows how much "too much" is, though. openSUSE minimizes the risk by not writing more than the bare minimum required to boot the OS. The minimum means telling the UEFI firmware about the location of the openSUSE boot loader. Upstream Linux Kernel features that use the UEFI storage area for storing boot and crash information (`psstore`) have been disabled by default. Nevertheless, it is recommended to install any firmware updates the hardware vendor recommends.

## 1.3 UEFI, GPT, and MS-DOS Partitions

Together with the EFI/UEFI specification, a new style of partitioning arrived: GPT (GUID Partition Table). This new schema uses globally unique identifiers (128-bit values displayed in 32 hexadecimal digits) to identify devices and partition types.

Additionally, the UEFI specification also allows legacy MBR (MS-DOS) partitions. The Linux boot loaders (ELILO or GRUB2) try to automatically generate a GUID for those legacy partitions, and write them to the firmware. Such a GUID can change frequently, causing a rewrite in the firmware. A rewrite consist of two different operation: removing the old entry and creating a new entry that replaces the first one.

Modern firmware has a garbage collector that collects deleted entries and frees the memory reserved for old entries. A problem arises when faulty firmware does not collect and free those entries; this may end up with a non-bootable system.

The workaround is simple: convert the legacy MBR partition to the new GPT to avoid this problem completely.

## 2 System Upgrade

### 3 General

#### 3.1 No firewall by default after installation from Live CD

When installing from the Live CD no firewall will be active by default.

Enable the firewall using YaST or with:

```
systemctl enable SuSEfirewall2
systemctl start SuSEfirewall2
```

## 4 Technical

### 4.1 Printing System: Improvements and Incompatible Changes

#### **CUPS Version Upgrade to 1.7**

CUPS  $\geq$  1.6 has major incompatible changes compared to CUPS up to version 1.5.4 in particular when printing via network:

The IPP protocol default version increased from 1.1 to 2.0. Older IPP servers like CUPS 1.3.x (for example in SLE 11) reject IPP 2.0 requests with "Bad Request" (see <http://www.cups.org/str.php?L4231>). By adding '/version=1.1' to ServerName in client.conf (e.g., ServerName older.server.example.com/version=1.1) or to the CUPS\_SERVER environment variable value or by adding it to the server name value of the '-h' option (e.g., lpstat -h older.server.example.com/version=1.1 -p) the older IPP protocol version for older servers must be specified explicitly.

CUPS Browsing is dropped in CUPS but the new package cups-filters provides the cups-browsed that provides basic CUPS Browsing and Polling functionality. The native protocol in CUPS for automatic client discovery of printers is now DNS-SD. Start cups-browsed on the local host to receive traditional CUPS Browsing information from traditional remote CUPS servers. To broadcast traditional CUPS Browsing information into the network so that traditional remote CUPS clients can receive it, set "BrowseLocalProtocols CUPS" in /etc/cups/cups-browsed.conf and start cups-browsed.

Some printing filters and back-ends are dropped in CUPS but the new package cups-filters provides them. So cups-filters is usually needed (recommended by RPM) but cups-filters is not strictly required.

The cupsd configuration directives are split into two files: cupsd.conf (can also be modified via HTTP PUT e.g. via cupsctl) and cups-files.conf (can only be modified manually by root) to have better default protection against misuse of privileges by normal users who have been specifically allowed by root to do cupsd configuration changes (see <http://www.cups.org/str.php?L4223>, CVE-2012-5519, and [https://bugzilla.opensuse.org/show\\_bug.cgi?id=789566](https://bugzilla.opensuse.org/show_bug.cgi?id=789566)).

CUPS banners and the CUPS test page are no longer supported since CUPS  $\geq$  1.6. The banners and the test page from cups-filters must be used. The CUPS banner files in /usr/share/cups/banners/ and the CUPS testpage /usr/share/cups/data/testprint (which is also a CUPS banner file type) are no longer provided in the cups RPM because they do no longer work since CUPS  $\geq$  1.6 (see <http://www.cups.org/str.php?L4120>) because there is no longer a filter that can convert the CUPS banner files. Since CUPS  $\geq$  1.6 only the banner files and testpage in the cups-filters package work via the cups-filters PDF workflow and the cups-filters package also provides the matching bannertopdf filter.

For details, see [https://bugzilla.opensuse.org/show\\_bug.cgi?id=735404](https://bugzilla.opensuse.org/show_bug.cgi?id=735404).

## **PDF Now Common Printing Data Format**

There is a general move away from PostScript to PDF as the standard print job format. This change is advocated by the OpenPrinting workgroup of the Linux Foundation and the CUPS author.

This means that application programs usually no longer produce PostScript output by default when printing but instead PDF.

As a consequence the default processing how application programs printing output is converted into the "language" that the particular printer accepts (the so called "CUPS filter chain") has fundamentally changed from a PostScript-centric workflow to a PDF-centric workflow.

Accordingly the upstream standard for CUPS under Linux (using CUPS plus the cups-filters package) is now PDF-based job processing, letting every non-PDF input be converted to PDF first, page management options being applied by a pdftopdf filter and Ghostscript being called with PDF as input.

With PDF as the standard print job format traditional PostScript printers can no longer print application's printing output directly so that a conversion step in the printing workflow is required that converts PDF into PostScript. But there are also PostScript + PDF printers that can print both PostScript and PDF directly.

For details, see the section "Common printing data formats" in the SUSE wiki article "Concepts printing" at [http://en.opensuse.org/Concepts\\_printing](http://en.opensuse.org/Concepts_printing) .

## 5 Miscellaneous

## 6 More Information and Feedback

- Read the READMEs on the CDs.
- Get detailed changelog information about a particular package from the RPM:

```
rpm --changelog -qp <FILENAME>.rpm
```

<FILENAME>. is the name of the RPM.

- Check the ChangeLog file in the top level of the DVD for a chronological log of all changes made to the updated packages.

- Find more information in the docu directory on the DVD.
- <https://activedoc.opensuse.org/> contains additional or updated documentation.
- Visit <http://www.opensuse.org> for the latest product news from openSUSE.

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