

Timesys 18 Fedora Remix Installer FAQs

Gold Maintenance Release 1

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About Timesys Fedora Remix Installer

1. What is Fedora?

Fedora is an [RPM](#)-based, general purpose [operating system](#) built on top of the [Linux kernel](#), developed by the community-supported [Fedora Project](#) and sponsored by [Red Hat](#).

The Fedora Project mission is to lead the advancement of free and open source software and content as a collaborative community.

A detailed Fedora Project description can be found at [https://fedoraproject.org/wiki/FAQ](https://fedoraproject.org/wiki/FedoraProject>About. Additional FAQs can be found at the Fedora Project Wiki, located at <a href=)

2. What is the Timesys Fedora Remix?

Intel[®] has chosen the Fedora based open source distribution as a basis for enabling mainstream Linux on a number of platforms based on the Intel[®] Atom™ processor line.

Timesys has partnered with Intel[®] to create a custom Fedora Remix which utilizes standard Fedora packages in addition to other free, open-source, and non-free, non-open source packages. Among the modifications of each Remix are an altered Fedora kernel with Intel[®]-developed device drivers and the kernel modules and graphics libraries to support accelerated video and graphics for each Intel[®] platform supported.

The Timesys Fedora Remix is 100% compatible with Fedora software.

Fedora is in no way affiliated with Timesys. For more information on Fedora, see [### 3. What is the Timesys Fedora Remix Installer?](https://fedoraproject.org/wiki/FedoraProject>About. Inquiries regarding the Timesys Fedora Remix and installer should be directed to Timesys support.</p></div><div data-bbox=)

The Timesys Fedora Remix Installer installs a Timesys Fedora Remix to an Intel[®] platform. Among the installed components are:

- Fedora Remix kernel
- Standard Linux root filesystem
- Libraries for the hardware accelerated graphics
- Graphics/Video driver, such as the Intel[®] Embedded Media and Graphics Driver (EMGD)
- Additional Intel[®] developed device drivers for platform compatibility

4. What are the tradeoffs between a Fedora Remix and embedded?

Fedora releases, and by extension Fedora Remixes, have comparatively short life cycle: version X is maintained until one month after version X+2 is released. With 6 months between releases, the maintenance period is a very short 13 months for each version. This can lead to trouble when using a particular version of Fedora for product development (i.e., embedded systems) where long-term support is important.

5. Where can I find a list of all the programs Fedora provides (a package list)?

As the Timesys Fedora Remix is 100% compatible with Fedora software, Fedora Remix users may install thousands of packages from the Fedora Project database.

A list of the main Fedora packages can be found at <http://distrowatch.org/table.php?distribution=fedora>

You can see a list of *all* the Fedora 18 packages in the Fedora Package Database which is located at <https://admin.fedoraproject.org/pkgdb/collections/name/fl8>.

6. What kind of support is available from Timesys?

Timesys is providing support for the “**Timesys Fedora Remix Installer**” only.

In addition, Timesys offers professional support for companies using Fedora as the basis for their product.

Timesys Support Offering for Intel® Linux Installer	Free Support	Professional Support
Installation	Yes	Yes
Enabling specific (non-reference) hardware	No	Yes ¹
Adding additional packages / Reconfiguration	No	Yes ¹
Package / ISO Recompile	No	Yes ¹
Footprint optimizations	No	Yes (LinuxLink) ²
Small footprint designs	No	Yes (LinuxLink) ²

1. Support offered is based on T&M. You can buy blocks of time in increments of 8h. For larger projects, we can offer fixed project pricing. Please contact Timesys at info@timesys.com and specify “Intel Linux Installer Support” in the email subject line.

2. Optimizations for certain embedded systems might require system redesign that can be accomplished with Timesys LinuxLink offering. NOTE: LinuxLink tools and process use a different approach to system design compared to Fedora installer.

Please contact Timesys at info@timesys.com to find out more details on available Timesys Fedora Remix Installer support options.

7. Will there be a Timesys Fedora Remix Installer remixed from a future Fedora release?

Currently, there is no schedule set for the Timesys Fedora Remix installer beyond the current Remix. At any time, you can visit <http://www.timesys.com/supported/processors/intel/> for updated information or contact Timesys at info@timesys.com.

8. With which processor/boards has the installer been tested?

The following processors and boards are supported by the Timesys Fedora Remix:

1. Intel[®] Atom[™] Processor E38xx Product Family
2. Intel[®] Bayley Bay and Bakersport reference platforms

The *Gold Maintenance Release 1* has been tested with BIOS version 92_30.

9. Is the Intel[®] Graphics driver verified with the Timesys Fedora Remix Installer?

If your board is among those listed in “With which processor/boards has the installer been tested?” then Timesys Fedora Remix installer for your platform will install the appropriate accelerated graphics and media drivers.

Please see the Intel[®] EMGD Linux Users Guide document for your platform for further information on configuring and verifying graphics and media acceleration for your platform.

Using the Timesys Fedora Remix Installer

1. Where do I get the Timesys Fedora Remix Installer?

To access the Timesys Fedora Remix Installer, you must first register at <http://www.timesys.com/intel-linux-installer-registration>.

Once registered, you can download the Timesys Fedora Remix Installer at <http://www.timesys.com/intel-linux-installer-downloads/>.

2. How do I install Timesys Fedora Remix?

The installer is a live image and may be booted from a USB flash drive (DVD is not currently supported). Once booted, log in as “Live System User” with no password, and choose “Install to Hard Drive” from the welcome menu. A graphical wizard will guide you

through the install process. When finished, reboot the system and complete the installation by following the on-screen guide.

For more detail, see the document named “[Getting Started with Timesys 18 Fedora Remix.](#)”

3. How do I know if my installation was successful?

When the installer finishes without error, it should indicate that the process is complete and that you may reboot to use the new system. Upon doing so, you will be guided through a process to create a user account and finish other set-up tasks. If you can then log in successfully, the installation was successful.

4. How do I enable and configure my displays?

After installation, use the Intel® CED-Lite tool which is installed to /opt/CED-Lite by default (it can also be found packaged with the EMGD download). This tool allows you to generate a binary firmware blob with your configuration, along with an appropriate Xorg configuration file. The EMGD Linux Users Guide provides detailed instructions on using CED-Lite.

To use the resulting firmware, copy it to /lib/firmware and configure modprobe to automatically pass the parameter to EMGD. Edit or create the file /etc/modprobe.d/emgd.conf to contain the following (replace 'filename.bin' with your firmware file, e.g. emgd_64.bin or emgd_32.bin):

```
options emgd firmware=filename.bin
```

In order to allow successful installation with any of the supported display types, the installer does not contain a binary firmware blob by default. You should configure one appropriately after installation. If you experience any difficulty booting the installer with your display, please [contact Timesys support](#).

Using Timesys Fedora Remix and Installing Additional Software

1. Where can I get additional software?

You may use “yum” to install additional Fedora packages, just like you would with an official Fedora release. Many additional packages are available in repositories from [RPM Fusion](#), or by searching <http://rpm.pbone.net>.

2. Is there anything like apt for the Timesys Fedora Remix?

APT is a program for Debian and Ubuntu Linux that installs not only the software you specify, but also all of that software's dependencies. It makes installing software much easier.

There is a piece of software like this for the Timesys Fedora Remix that comes in a standard Fedora installation. It's called **yum**. It can automatically download and install a program and all of its dependencies, with just one command.

For more info about yum, visit <http://yum.baseurl.org>.

3. Where can I get hardware drivers for the Timesys Fedora Remix?

Most drivers come with the Timesys Fedora Remix, including Intel's EMGD package for accelerated video and 3D. However, if you need an additional driver, you can see what drivers are available for automatic download:

1. Open a Terminal.
2. Become root:

```
su -
```

3. Run the following command:

```
yum list akmod-* *-drv* kmod-* dkms-*
```

If you don't find what you need this way, try searching [Google](#) for:

```
Fedora NameOfHardware
```

or:

```
Linux NameOfHardware
```

...where *NameOfHardware* is the normal name of your hardware. If it has more than one name, keep trying different ones until you get a result.

4. How do I read my NTFS (Windows NT/2000/XP/2003) drive in Timesys Fedora Remix?

Install the ntfs-3g program!

1. Open a Terminal.
2. Become root:

```
su -
```

3. Type:

```
yum install ntfs-3g
```

Now you can read and write to your NTFS drives!

For information on how to use your NTFS drive, you can read the [NTFS FAQ](#).

5. Where can I find the kernel source?

The kernel source RPMs are hosted in our repository, located at <http://repository.timesys.com/buildsources/fedora/18/>

Within each arch-type subfolder there is a source repository that contains kernel-
<version>.src.rpm.

The source RPM contains the Linux kernel source, Bay Trail patches and firmware, EMGD module source, a default configuration, and the RPM spec file.

6. How do I rebuild the kernel from source?

The above SRPM contains the kernel source, default config, rpm spec, emgd module src, and all Bay Trail patches and firmware.

If installed with “rpm -I”, you should be able to re-build a kernel RPM from the spec file using the normal Fedora RPM build methods.

To build only the kernel and not bother with an RPM, you may use the following procedure:

1. Extract the rpm contents (into the current directory). This requires the “rpm2cpio” tool:

```
$ mkdir src; mv kernel-3.8.0-1.src.rpm src; cd src
```

```
$ rpm2cpio kernel-3.8.0-1.src.rpm | cpio -divm
```

2.

```
$ tar -xf linux-3.8.tar.bz2
```
3.

```
$ cd linux-3.8
```
4.

```
$ for p in ../BYT_LSP*.patch; do patch -p1 < $p; done
```

All patches should apply cleanly.

5.

```
$ cp ../byt_32_fedora_18_emgd_defconfig .config
```
6.

```
$ mkdir -p drivers/gpu/drm/emgd
```
7.

```
$ tar -xf ../emgd_drm.tgz -C drivers/gpu/drm/emgd
```
8.

```
$ yes "" | make oldconfig
```
9.

```
$ make ARCH=<i386 or x86_64>
```

(Optionally add a -j argument for parallel build.)

10. OPTIONAL — Only if rebuilding on the baytrail board itself!

```
$ make modules_install && make install
```

Firmware (.bin) files should be copied to /lib/firmware on the target.

For the LPE firmware, copy or link fw_sst_0f28.bin-i2s_master (or one of the others as required) to just /lib/firmware/fw_sst_0f28.bin to set it as the default.

7. Why isn't kernel-src-<version> available from the Timesys repository?

It is possible that the latest release of the Timesys Fedora Remix kernel has not changed any of the kernel source but solely RPM build parameters. In this case, count backwards from your kernel release to the latest kernel-src package that was produced. That kernel-src file will hold the source from which your kernel is built.

Additionally, the kernel and many other packages are often tied to specific versions for which there is support from Intel[®] for the platform.

Problems and Their Solutions

1. I see warnings from the bootloader about Secure Boot not being enabled, or certificate errors.

Secure Boot should be disabled in the BIOS boot options. It is normal to see the message about Secure Boot being disabled, but booting should continue shortly.

2. I have other installation problems.

If after reading all FAQs and following Timesys guides and requirements you are still running into issues, please contact Timesys at support@timesys.com.

3. The integrated HD Audio is not working.

You may need to alter your BIOS settings to disable LPE, and enable Azalia in the Device Manager > System Setup > South Cluster Configuration section.

4. LPE Audio is not working.

LPE audio option must be set to PCI mode in the BIOS under the Device Manager > System Setup > South Cluster Configuration > Audio settings section.

5. Hotplug is not working with my display.

Hotplug is not enabled by default in the driver. You may edit the default configuration options and rebuild the driver, or enable it in firmware with CED-Lite. Refer to the EMGD documentation for detail.

Known Issues

1. Some PCIe network cards cause the boot to hang.

This is a known issue specifically with the Intel i210 NIC, but may include other cards as well. The workaround is to remove or disable the adapter, or try a different one.

2. Error: disk ',msdos1' not found.

This error from grub sometimes happens when the USB flash drive is partitioned with a GUID Partition Table (GPT), for example by using the “parted” tool in Linux. We recommend a single FAT32 partition with an MBR partition table (such as those created with “fdisk”) instead. The installation media must be on the first partition.

If you are experiencing any issues after the installation process completes, Timesys can offer commercial support. To find out about available options, please contact Timesys at support@timesys.com.