

DISCLAIMER OF WARRANTY

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HP-LXBIOS User's Guide

'**hp-lxbios**' is a tool provided by HP Workstations R&D for updating System BIOS's and cloning system BIOS settings from the Linux command line. It is intended for use on the following HP Workstations only:

- xw4400
- xw6400
- xw8400
- xw4600
- xw6600
- xw8600
- xw9300
- xw9400
- Z400
- Z600
- Z800

'**hp-lxbios**' is distributed without warrantee and guaranteed compatibility with future systems. This version of '**hp-lxbios**' is intended for Red Hat Enterprise Linux 4.6 and Red Hat Enterprise Linux 5.2

What's in the package?

'**lxbios**' has two main components, the '**xwbios**' kernel module, and the '**hplxbios**' application.

- The '**xwbios**' kernel module is distributed as a source RPM called
 - `hp-lxbios-mod.<version>.src.rpm`
- The '**hplxbios**' application is distributed as an RPM called
 - `hp-lxbios.<version>.rpm`

Installation

The kernel module must be installed before the application. Be sure that you have the 'development' option for RHEL installed on your system before you attempt to install the

'lxbios' module and app. One of these rpms that HP is providing require you to build a binary component from source. To do this will require the **'rpmbuild'** application. If **'rpmbuild'** is not installed on your system, you will need to load it from the RHEL installation media. The **'rpm-build.<version>.rpm'** can be found in the "Workstation" directory on the installation media. You may find while installing the **'rpm-build'** rpm that there are other packages which are missing from your system and need to be installed before you can proceed. Take note of the missing packages and install each one directly from the RHEL media. Once you have these dependencies taken care of, complete installation of the **'rpm-build'** .rpm and proceed with the installation instructions below.

To install the kernel module:

- `rpm -i hp-lxbios-mod-<version>.src.rpm`
- `rpmbuild -bb /usr/src/redhat/SPECS/hp-lxbios-mod.spec`
- `rpm -i /usr/src/redhat/RPMS/<architecture>/hp-lxbios-mod-<version>.rpm`

To install the application:

- `rpm -i hp-lxbios-<version>.rpm`

The application is now installed on the system in the following directory: *'/opt/hp/hp-lxbios'*.

BIOS Flashing/Archiving

Attention: the flashed BIOS image is NOT checked for validity. ONLY flash the system BIOS with BIN file from the HP support website

'hp-lxbios' can be used to update and archive a system's BIOS.

- To update (flash) the BIOS, obtain a current BIN file for the target system from the HP support website. Follow the posted instructions for extracting this file from the posted SoftPAQ archive, if necessary. The `--flash` option will instruct the application to update the bios with the supplied BIN file:
 - `/opt/hp/hp-lxbios/hp-lxbios --flash <romfile.bin>`
- DO NOT restart the system while flashing is in progress. The system will become unresponsive for a few seconds. The changes will take effect after a reboot.
- To archive a BIOS image, use the `--archive` option.
 - `/opt/hp/hp-lxbios/hp-lxbios --archive <romfile.bin>`

Replicated Setup

'hp-lxbios' replicated setup (repset) can be used to clone BIOS Settings in systems of the same type. The repset feature mimics the BIOS F10 setup menu. BIOS settings are saved to a file, and can be restored from the file. **'hplxbios'** implements repset from the command line. Here is the procedure for using this feature:

- Enter the BIOS setup menu (hit <F 10> at boot) and customize settings.
- Reboot the system, and use **'lxbios'** to grab the repset file:

- o `/opt/hp/hp-lxbios/hp-lxbios --saveparms <saverep.set>`
- ☐ This will save all BIOS settings to the file.
- ☐ Transfer the repset file to a target system of the same type. Apply the repset file:
 - o `/opt/hp/hp-lxbios/hp-lxbios --setparms <setrep.set>`
- ☐ This will apply all changes. Changes will take affect after a reboot

Other Options

Password

If a BIOS password is set on the system, it will need to be supplied on the command line using the `-pw` option for changes to be made. For example:

```
/opt/hp/hp-lxbios/hp-lxbios --flash <romfile.bin> --pw <setup
passwd>
```

New Password

To set or change the BIOS password, use the `-newpw` option. If a password is already set, supply it with the `-pw` option. If no password was set previously, omit the `-pw` option. For example:

```
/opt/hp/hp-lxbios/hp-lxbios --newpw <new pw> --pw <old pw>
```

Automate

Use the `-automate` option to turn of user prompts for full automation of the process:

```
/opt/hp/hp-lxbios/hp-lxbios --flash <romfile.bin> --automate
```

Unique Mode

There are several BIOS settings that are system unique, like ‘Asset Tags’ and ‘Ownership ID’. By default, ‘unique mode’ is turned off, and ‘hp-lxbios’ does not change these settings. To enable ‘unique mode’ and apply system unique settings, use the `-unique` option:

```
/opt/hp/hp-lxbios/hp-lxbios --setparms <setrep.set> --unique
```

Password Cloning

The ‘hp-lxbios’ replicated setup functionality will clone the setup password by default.

To turn off password cloning, use the `--no-clone-passwd` option:

```
/opt/hp/hp-lxbios/hp-lxbios --setparms <setrep.set> --no-clonepasswd
```

Repset File Format

Replicated Setup is implemented by the BIOS from the F10 setup menu. The file used by the F10 menu is DOS formatted. In order to be fully compatible, ‘lxbios’ also uses a DOS formatted (CR/LF) repset file. Therefore, please only use files generated by ‘lxbios’ or the F10 menu.

Extra care should be taken when modifying repset files. Since contents may differ between platforms, there is no syntax checking before applying settings to a system. Errors encountered during an install may result in only a partially updated system.

The repset file is a list of BIOS objects with their current options. Settings are stored with the name of the setting first, followed by a list of options. There are no spaces separating options. Here are some examples of settings as they appear in a repset file:

```
Setup Language
  *English
  Danish
  Finnish
  French
  German
  Italian
  Japanese
  Dutch
  Norwegian
  Portuguese
  Swedish
  Spanish

                                Removable Media Boot
                                *Enable

  Disable
Boot Order
  ATAPI CD-ROM Drive
  Diskette Drive
  USB device
  Hard Drive
  Network Controller
  PnP Device #2
  PnP Device #3
  PnP Device #4
  PnP Device #5
  PnP Device #6
  PnP Device #7
  PnP Device #8
  PnP Device #9
  PnP Device #10
  PnP Device #11
Enter Ownership Tag
  xw6400 #2
```

Recovering from a ROM flash failure: the FailSafe Boot Block ROM and SoftPaq-created BIOS image CD

The FailSafe Boot Block ROM enables system recovery in the unlikely event of a ROM flash failure. For example, if a power failure occurs during a ROM upgrade, the Boot Block uses a flash-protected section of the ROM to verify a valid system ROM flash when power is restored to the system:

If the system ROM is valid, the system starts normally.

If the system ROM fails the validation check, the FailSafe Boot Block ROM provides enough support to start the system from a BIOS image CD created from a SoftPaq. The BIOS image CD programs the system ROM with a valid image.

When Boot Block detects an invalid system ROM, the workstation power LED blinks red eight times and beeps eight times, then the workstation pauses for two seconds and eight simultaneous beeps are sounded. On some models, a Boot Block recovery mode message appears.

CAUTION: To prevent a loss of data following a ROM flash failure and enable system recovery, use the BIOS CD media file in the SoftPaq to create a BIOS image CD when first setting up your workstation.

To recover your system after it enters Boot Block recovery mode:

1. Remove any media in the diskette or optical drives.
2. Insert a BIOS image CD into the CD drive.

You can also use USB media (such as an HP DriveKey).

3. Power off, then power on the workstation.

If no BIOS image CD or USB media is found, you are prompted to insert one and restart the workstation.

4. Enter the setup password.

If the system starts from the CD or USB media and reprograms the ROM, three keyboard lights illuminate. A rising-tone series of beeps also signals successful recovery.

5. Remove the CD or USB media and power off the workstation.
6. Restart the workstation.

For more details, please see *Support and Technical Reference Guide*

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