



Technical Update

Important information about the Remote Supervisor Adapter II and Linux operating systems

This Technical Update supplements the information in your IBM® Remote Supervisor Adapter II documentation.

General information for all supported Linux operating system configurations

Read the following general information for all supported Linux operating systems:

- If the Remote Supervisor Adapter II is installed in a server that is running either the Red Hat Linux or SuSE Linux operating system, make sure that the Linux operating system is selected in the Remote Supervisor Adapter II settings in the server basic input/output system (BIOS). Complete the following steps to set Linux as the operating system in the server BIOS:
 1. Turn on or restart the server. When the message Press F1 for Configuration/Setup appears, press F1.
 2. Select **Advanced Setup** and then select **RSA II Settings**.
 3. In the **OS USB selection** field, select **Linux**.
 4. Select **Save Values and Reboot RSA II**.
- After you make the configuration changes that are listed in this document, if you run an automated X Windows System configuration utility, you must repeat the configuration changes in this document.
- If the SuSE Linux or Red Hat Linux operating system is already installed and configured to run in text mode, and will never use the X Window System, no additional configuration is required for the Remote Supervisor Adapter II to function correctly. Follow the directions in the *Remote Supervisor Adapter II Installation Guide* to install the Remote Supervisor Adapter II.

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SuSE Linux GUI mode considerations

The following sections provide configuration information to enable the SuSE Linux operating system to use the X Window System and the remote control features of the Remote Supervisor Adapter II.

If the SuSE Linux operating system is installed and configured to run in GUI mode with the X Window System, to enable the remote control features, you must make the following changes to the configuration files:

- Change the video device driver from the default ATI RADEON driver to the VESA (Video Electronics Standard Association) driver. The VESA video driver enables the remote control screen and the local screen to display the same information (clone mode).

Note: The default video driver names are different depending on whether the Remote Supervisor Adapter II is installed before or after the operating system is installed.

- Set the correct color depth and desktop display size for Remote Supervisor Adapter II remote control sessions
- Enable mouse support

The following sections provide detailed instructions for making the modifications to the configuration file.

Special configuration information when SuSE Linux is installed and the Remote Supervisor Adapter II is not installed

If the SuSE Linux operating system is installed and configured to run in GUI mode with the X Window System, and the Remote Supervisor Adapter II is not installed, complete the following steps to change the video device driver:

1. Log in to a text screen.
2. In the `/etc/X11/XF86Config` file, search for the word "ati" and replace it with "vesa".
3. Go to "Setting the color depth and desktop display size" on page 3; then, return to step 4.
4. Shut down and turn off the server; then, install the Remote Supervisor Adapter II. For more information about installing the adapter, see the *Remote Supervisor Adapter II Installation Guide*. After the Remote Supervisor Adapter II is installed, continue with the configuration procedures in this document.

Special instructions for a new installation of SuSE Linux and the Remote Supervisor Adapter II

Complete the following steps for a new installation of the Remote Supervisor Adapter II and the SuSE Linux operating system:

1. Turn off the server and install the Remote Supervisor Adapter II. For more information, see the *Remote Supervisor Adapter II Installation Guide*.
2. In the server BIOS Configuration/Setup Utility program, make sure the settings for the Remote Supervisor Adapter II specify the Linux operating system (see "General information for all supported Linux operating system configurations" on page 1 for more information).
3. Before installing the operating system, go to "Video mode considerations during the installation of SuSE Linux" on page 4 for important information. Then, return to step 4.
4. Install the SuSE Linux operating system.

5. After the operating system installation is completed, log in to a text screen.
6. In the `/etc/X11/XF86Config` file, search for the word "radeon" and replace it with "vesa".
7. Go to "Setting the color depth and desktop display size"; then, return to step 8.
8. Press `Ctrl+Alt+Backspace` to restart the X Window System.

Setting the color depth and desktop display size

You must set the color depth and desktop size for correct operation of the Remote Supervisor Adapter II. Complete the following steps to set the color depth and desktop size:

1. Log in to a text screen if you have not already done so.
2. In the `/etc/X11/XF86Config` file, under Section "Screen", edit the file as follows:

```
Section "Screen"
    DefaultDepth 16
    SubSection "Display"
        Depth           16
        Modes            "1024x768"
    EndSubSection
```

:

Be sure that the default depth is 16 (add the text line, if necessary) and the Display Modes value is "1024x768" only. Delete the other display mode values.

Enabling mouse support after SuSE Linux is installed

If the SuSE Linux operating system is configured to use a USB mouse, the remote control features of the Remote Supervisor Adapter II will function correctly. If the operating system is configured to use a local PS/2 mouse, configuration changes are required.

Complete the following steps to enable both PS/2 and USB mouse support:

1. To require the `mousedev` module to load, edit the `/etc/init.d/boot.local` file and at the end of the file add:

```
/sbin/modprobe mousedev
```

2. To add the description of the new input device to the X Window System configuration file, edit the `/etc/X11/XF86Config` file and below the existing mouse configuration text lines, add the following text:

```
Section "InputDevice"
    Driver           "mouse"
    Identifier       "USB Mouse"
    Option           "Device" "/dev/input/mice"
    Option           "Name" "AutoDetected"
    Option           "Protocol" "IMPS/2"
    Option           "Vendor" "AutoDetected"
EndSection
```

3. To add the second mouse to the Section "ServerLayout" and specify that it sends core events, edit `/etc/X11/XF86Config` file as follows:

```
Section "ServerLayout"
    Identifier       "Layout[all]"
    InputDevice     "Keyboard[0]" "CoreKeyboard"
    InputDevice     "Mouse[1]" "SendCoreEvents" <--- Changed from "CorePointer" to "SendCoreEvents"
    InputDevice     "USB Mouse" "CorePointer" <--- Added this line
```

```
Screen      "Screen[0]"
EndSection
```

4. To configure the X Window System server to scale both mouse devices the same, edit the `/etc/X11/xdm/Xsetup` file and at the end of the file, above `"exit 0"`, add:

```
$xset m 1 1
```

Important: On the next restart of the server, the SuSE Linux operating system hardware detection service program (YaST2) might detect hardware changes. Do *not* enable YaST2 to make any configuration changes. Click **Cancel** when prompted.

Video mode considerations during the installation of SuSE Linux

Note: If the monitor that is connected to the video connector on the Remote Supervisor Adapter II is using Plug and Play technology, you do not need the information in this section.

Before you begin the installation of the SuSE Linux operating system, and if the Remote Supervisor Adapter II is installed, check the monitor type that is connected to the video connector on the Remote Supervisor Adapter II. Complete the procedure in this section if *one* of the following is true:

- The monitor that is connected to the Remote Supervisor Adapter II does not use Plug and Play technology.
- You do not know if the monitor uses Plug and Play technology.
- No monitor is connected to the Remote Supervisor Adapter II.

On the first installation screen that is displayed during the SuSE Linux installation, there are several choices for the video mode that can be used during the installation process:

1. F2 =text mode
2. F3 =640x480
3. F4=800x600 <== Do not select this mode.
4. F5=1024x768

Do not select the 800x600 video mode, which is the default mode when a monitor that is not using Plug and Play technology is connected to the Remote Supervisor Adapter II or if no monitor is connected. If the 800x600 video mode is selected, the remote video screen for the Remote Supervisor Adapter II will not be updated after the SuSE Linux installation switches to the 800x600 video mode. The remote video screen will lock up at the initial SuSE Linux installation screen.

You must change the video mode selection before the SuSE Linux installation program times out after 8 seconds. Otherwise, the default 800x600 video mode is selected.

Red Hat Linux GUI mode considerations

The following sections provide configuration information to enable the Red Hat Linux operating system to use the X Window System and the remote control features of the Remote Supervisor Adapter II.

If the Red Hat Linux operating system is installed and configured to run in GUI mode with the X Window System, to enable the remote control features, you must make the following changes to the configuration file:

- Change the video device driver from the default ATI RADEON driver to the VESA (Video Electronics Standard Association) driver. The VESA video driver enables the remote control screen and the local screen to display the same information (clone mode).

- Set the correct color depth and desktop display size for Remote Supervisor Adapter II remote control sessions
- Enable mouse support

The following sections provide detailed instructions for making the modifications to the configuration file.

Important: Failure to change the video driver on servers running the Red Hat Linux 7.3 operating system can result in CPU x Internal Error errors, which result in a server shutdown. To correct CPU x Internal Error errors, you must turn off the server and disconnect all power cords from the power source.

Special configuration information when Red Hat Linux is installed and the Remote Supervisor Adapter II is not installed

If the Red Hat Linux operating system is installed and configured to run in GUI mode with the X Window System, and the Remote Supervisor Adapter II is not installed, complete the following steps to change the video device driver:

1. Log in to a text screen.
2. In the `/etc/X11/XF86Config-4` file, search for the word "ati" and replace it with "vesa".
3. Go to "Setting the color depth and desktop display size" on page 6; then, return to step 4.
4. Shut down and turn off the server; then, install the Remote Supervisor Adapter II. For more information, see the *Remote Supervisor Adapter II Installation Guide*. After the Remote Supervisor Adapter II is installed, continue with the configuration procedures in this document.

Special instructions for a new installation of Red Hat Linux and the Remote Supervisor Adapter II

Important: To avoid problems with the installation, you *must* use the instructions in this section to install the Remote Supervisor Adapter II and the Red Hat Linux operating system.

Complete the following steps to install the Remote Supervisor Adapter II and the Red Hat Linux operating system:

1. Install the Remote Supervisor Adapter II. For more information, see the *Remote Supervisor Adapter II Installation Guide*.
2. In the server BIOS Configuration/Setup Utility program, make sure the settings for the Remote Supervisor Adapter II specify the Linux operating system (see "General information for all supported Linux operating system configurations" on page 1 for more information).
3. Before installing the Red Hat Linux operating system, read the information in "Mouse support considerations before installing Red Hat Linux" on page 6; then, return to 4.
4. Install the Red Hat Linux operating system using text mode. Follow the operating system installation instructions that are available for your server from <http://www.ibm.com/pc/support/>. Note the following important information:
 - a. From the startup installation screen, at the boot prompt, type text to use the text mode installation option.
 - b. In the Video Card Configuration screen, change the video card from **ATI RADEON VE** to **VESA driver (generic)**.
 - c. In the Monitor Configuration screen, accept the detected values or configure the monitor to match the hardware.

- d. In the X Customization screen, if you want your operating system to start in GUI mode, select the following options:

- Default Login Graphical
- ColorDepth 16 bits
- Desktop Size 1024x768 (do not select other modes)

5. To enable the mouse functions, see “Enabling mouse support with Red Hat Linux.”

Setting the color depth and desktop display size

You must set the color depth and desktop size for correct operation of the Remote Supervisor Adapter II. Complete the following steps to set the color depth and desktop size:

1. If necessary, log in to a text screen.
2. In the `/etc/X11/XF86Config-4` file, under Section "Screen", edit the file as follows:

```
Section "Screen"

:
  DefaultDepth 16
  SubSection "Display"
    Depth 16
    Modes "1024x768"
  EndSubSection

:
```

Be sure that the default depth is 16 (add the text line, if necessary) and that the Display Modes value is "1024x768" only. Delete the other display mode values.

Mouse support considerations before installing Red Hat Linux

Important: The Red Hat Linux operating system installation is limited to a single type of mouse during the installation process. After the installation, the operating system is configured for that mouse only. The Remote Supervisor Adapter II implements a USB mouse and a USB keyboard for its remote control function. Under this configuration, the Red Hat Linux operating system will use the USB mouse (and any USB mouse connected locally), and ignores any local PS/2 mouse. To use a PS/2 mouse during the installation of the Red Hat Linux operating system on a local server in which the Remote Supervisor Adapter II is installed, disconnect the USB cable from the Remote Supervisor Adapter II for the duration of the operating system installation. After installing the operating system using the instructions in this document, if you plan to run the Red Hat Linux operating system in GUI mode with the X Window System, reconnect the USB cable to the Remote Supervisor Adapter II and follow the instructions in “Enabling mouse support with Red Hat Linux” to enable both USB and PS/2 mouse functions.

Enabling mouse support with Red Hat Linux

If the Red Hat Linux operating system is configured to use a USB mouse, the remote control functions of the Remote Supervisor Adapter II will function correctly. If the operating system is configured to use a local PS/2 mouse, configuration changes are required.

Complete the following steps to enable both PS/2 and USB mouse support:

1. To add the second mouse to the Section "ServerLayout" and specify that it sends core events, edit the /etc/X11/XF86Config-4 file as follows:

```
Section "ServerLayout"
    Identifier "Anaconda Configured"
    Screen 0 "Screen0" 0 0
    InputDevice "USB_Mouse" "CorePointer" <--- Added this line
    InputDevice "Mouse0" "SendCoreEvents" <--- Changed from "CorePointer" to "SendCoreEvents"
EndSection
```

2. To add the description of the new input device to the X Window System configuration file, edit the /etc/X11/XF86Config file as follows:

```
Section "InputDevice"
    Identifier "USB_Mouse"
    Driver "mouse"
    Option "Protocol" "IMPS/2"
    Option "Device" "/dev/input/mice"
EndSection
```

3. To configure the X Window System server to scale both mouse devices the same, edit the /etc/X11/xdm/Xsetup_0 file and at the end of the file, add the following new text line:

```
xset m 1 1
```

4. Press Ctrl+Alt+Backspace to restart the X Window System.

Important: On the next restart of the server, the Red Hat Linux operating system hardware detection service program (Kudzu) might detect hardware changes. The following table lists the Kudzu queries and suggested user responses.

Kudzu query	User response
ATI Rage XL has been removed	Select "Keep Configuration"
Generic OSB Mouse has been added	Select "Ignore"
ATI RADEON has been added	Select "Ignore"
Generic USB keyboard has been added	Select "Ignore"

