Remote Supervisor Adapter II

IBM

Installation Instructions for Linux Users

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Configuring the Remote Supervisor Adapter II using Linux

This document gives detailed installation instructions for installing the IBM® Remote Supervisor Adapter II software and firmware that you downloaded from the IBM Support Web site. These instructions are specific to the Red Hat Linux® and SuSE Linux operating systems.

The following topics are covered in this document:
- Updating the video adapter BIOS code
- Updating the server BIOS code
- Updating the diagnostics code
- Installing the Remote Supervisor Adapter II device drivers
- Updating the Remote Supervisor Adapter II firmware
- Using the Configuration/Setup Utility
- Using the Advanced Settings Utility

Before using the instructions in this document, be sure that:
- You have downloaded the Remote Supervisor Adapter II software and firmware according to the instructions in the *Remote Supervisor Adapter II Installation Guide*. The files you downloaded and unpacked are in the ibmssp directory.

  Note: If you downloaded and unpacked the files to a different directory path, be sure to make the appropriate changes in these instructions.
- You have read the readme file that is in the ibmssp directory. This readme file contains a list of file names with their descriptions.

Updating the video adapter BIOS code

You must update the video adapter basic input/output system (BIOS) code on the Remote Supervisor Adapter II. The video adapter BIOS code update is included in the Linux installation kit that you downloaded from the IBM Support Web site.

Complete the following steps to create a video adapter BIOS update diskette and update the video adapter BIOS code:

1. Insert a blank diskette into the diskette drive.
2. Open an xterm or other terminal window.
3. Change to the ibmssp directory.
4. From a shell command-line prompt, type the following command and press Enter:

   "`dd of=/dev/fd0 if=`*`filename`*`.img bs=1440`", where *filename* is the file name for the Video Adapter BIOS that is listed in the readme file.

   The files are automatically extracted to the diskette in the diskette drive.
5. To update the video adapter BIOS code, restart the server with the Video Adapter BIOS diskette in the diskette drive. Follow the instructions on the screen.
6. After the video adapter BIOS code update is completed, remove the diskette from the diskette drive and label the diskette.

Updating the server BIOS code

You must update the server basic input/output system (BIOS) code for Remote Supervisor Adapter II support. The BIOS code for your server is included in the Linux installation kit that you downloaded from the IBM Support Web site.

Complete the following steps to create a flash BIOS update diskette and update the server BIOS code:

1. Insert a blank diskette into the diskette drive.
2. Open an xterm or other terminal window.
3. Change to the ibmssp directory.
4. From a shell command-line prompt, type the following command and press Enter:

   "dd of=/dev/fd0 if=*filename*.img bs=1440", where *filename* is the file name for the Flash BIOS Update that is listed in the readme file.

   The files are automatically extracted to the diskette in the diskette drive.
5. To update the server BIOS code, restart the server with the Flash BIOS Update diskette in the diskette drive.
6. From the menu, select **1 - Update POST/BIOS** and follow the instructions on the screen.
7. After the flash BIOS update is completed, remove the diskette from the diskette drive and label the diskette "Flash BIOS Update". You will need this diskette when you update the server diagnostics in the following section.

Updating the server diagnostics code

You must update the server diagnostics code for Remote Supervisor Adapter II support. The diagnostics code for your server is included in the Linux installation kit that you downloaded from the IBM Support Web site.

Complete the following steps to create the diskettes and update the diagnostics code. You will create two diagnostics flash update diskettes.

1. Insert a blank diskette into the diskette drive.
2. Open an xterm or other terminal window.
3. Change to the ibmssp directory.
4. From a shell command-line prompt, type the following command and press Enter:

   "dd of=/dev/fd0 if=*filename*.img bs=1440", where *filename* is the file name for Diagnostics Flash Update Diskette 1 of 2 that is listed in the readme file.

   The files are automatically extracted to the diskette in the diskette drive.
5. Remove the diskette from the diskette drive and label the diskette.
6. Insert a second blank diskette into the diskette drive.
7. Type the following command and press Enter:

   "dd of=/dev/fd0 if=*filename*.img bs=1440", where *filename* is the file name for Diagnostics Flash Update Diskette 2 of 2 that is listed in the readme file.

   The files are automatically extracted to the diskette in the diskette drive.
8. Remove the diskette from the diskette drive and label the second diskette.
9. To update the diagnostics code, insert the Flash BIOS Update diskette (that you created in "Updating the server BIOS code") into the diskette drive and restart the server.

10. From the menu, select **2 - Update Diagnostics** and follow the instructions on the screen.

Remote Supervisor Adapter II device drivers for Linux

Be sure to install the Remote Supervisor Adapter II device drivers before updating the Remote Supervisor Adapter II firmware or using the Advanced Settings Utility. For information about the utility, see "Using the Advanced Settings Utility to configure Remote Supervisor Adapter II settings" on page 6.

Overview

The Remote Supervisor Adapter II device drivers enable communication between the Remote Supervisor Adapter II and the operating system of the server in which the Remote Supervisor Adapter II is installed. You must install the Remote Supervisor Adapter II device drivers to perform the following functions:

- In-band management
- Operating-system shutdown
- Operating-system watchdog
- Loader watchdog

The Remote Supervisor Adapter II device drivers are included in the Linux installation kit that you downloaded from the IBM Support Web site.

The Remote Supervisor Adapter II device drivers are supported on the following Linux operating systems:

- Red Hat Linux® 7.3
- SuSE Linux 8.0

Note: A later version of Red Hat Linux or SuSE Linux might be supported for your server. To determine whether there is a supported Remote Supervisor Adapter II device driver for your server model running your version of Red Hat Linux or SuSE Linux, go to http://www.ibm.com/pc/support/.

If you are installing device drivers manually, note the following information:

- Make sure that the operating system is installed on your server before you install the Remote Supervisor Adapter II device drivers. For information about installing the operating system, see the documentation that comes with your server.

  Important: Before installing a Linux operating system, be sure to read the information in the Remote Supervisor Adapter II Technical Update for Linux users that comes in the Remote Supervisor Adapter II option package.

- Be sure to stop any system-management application (for example, IBM Director, or Universal Manageability [UM] Services) before installing the Remote Supervisor Adapter II device drivers. For information about IBM system-management applications, see your server documentation.

Installing the device drivers

Use the information in this section to install the Remote Supervisor Adapter II device drivers for the Red Hat Linux or SuSE Linux operating system.

The binary Red Hat Package Manager (RPM) file (ibmusbasm-*xx.x-y*.i386.rpm, where *xx.x* is the RPM version and *y* is the build number of the RPM) contains the binary device drivers. Additionally, the source RPM file (ibmusbasm-*xx.x-y*.src.rpm,

where *xx.x* is the RPM version and *y* is the build number of the RPM) contains the open source code for the Remote Supervisor Adapter II device drivers for Red Hat Linux and SuSE Linux.

Preliminary operations

If you are replacing a previously installed Remote Supervisor Adapter with a Remote Supervisor Adapter II, you must complete the following tasks before installing Remote Supervisor Adapter II device drivers:

- Remove the installed Remote Supervisor Adapter device drivers
- Enable USB keyboard and mouse support

Removing device drivers: Complete the following steps to remove previously installed Remote Supervisor Adapter device drivers:

1. To determine whether you have the RPM packages installed, type

   `rpm -qa | grep ibmasm`

2. To remove the binary driver RPM, type

   `rpm -e ibmasm`

3. To remove the source code RPM, type

   `rpm -e ibmasm-src-[redhat/suse]`

Enabling USB keyboard and mouse support: Complete the following steps to enable USB keyboard and mouse support:

1. Turn on or restart the server and watch the monitor screen.

2. When the message `Press F1 for Configuration/Setup` appears, press F1.

   Note: If you have previously set both levels of passwords (power-on and administrator), you must type the administrator password to access the full Configuration/Setup Utility menu. Without the administrator password, limited Configuration/Setup Utility program functions are available.

3. Select **Advanced Setup** and then select **RSA II Settings**.

4. In the **OS USB Selection** field, select **Linux**.

5. Select **Save Values and Reboot RSA II**.

6. If you want to configure the Remote Supervisor Adapter II to use DHCP or a static IP address, do so now; however, this is not required for device driver installation.

Installing RPM

Complete the following steps to install the binary RPM:

1. Open an xterm or other terminal window.

2. Change to the ibmssp directory and locate the *filename*.rpm, where *filename* is the file name for the Remote Supervisor Adapter II USB Interface Daemon for Linux that is listed in the readme file.

3. Type

   `rpm -ivh ibmusbasm-xx.x-y.i386.rpm`, where *xx.x* is the RPM version and *y* is the build number of the RPM.

This RPM copies the device driver, shared library, configuration, startup, and utility programs to their applicable locations. It will start the device driver if the Remote Supervisor Adapter II is installed and the mini-USB cable is connected to the mini-USB connector on the Remote Supervisor Adapter II and to the server USB connector.

The device driver is configured to start when the server is started and to stop when the server is restarted or shut down.

Uninstalling RPM

To uninstall the RPM, type

```
rpm -e ibmusbasm
```

This command unloads the device driver and removes all of the ibmusbasm-related files from the server.

Updating the Remote Supervisor Adapter II firmware code

Note: Be sure you install the Remote Supervisor Adapter II device driver for Linux before you update the Remote Supervisor Adapter II firmware.

You must update the Remote Supervisor Adapter II firmware code for full feature support. The firmware code update is included in the Linux installation kit that you downloaded from the IBM Support Web site.

Complete the following steps to unpack the files and update the Remote Supervisor Adapter II firmware.

Note: After you unpack the files, you can update the Remote Supervisor Adapter II firmware either from the Remote Supervisor Adapter II Web interface or a command-line prompt.

1. Open an xterm or other terminal window.
2. Change to the ibmssp directory.
3. From a shell command-line prompt, type the following command and press Enter:

   "`tar -zxvf` *filename*`.tgz`", where *filename* is the file name for Remote Supervisor Adapter II Firmware Update for Linux that is listed in the readme file.

   The files are automatically extracted to the ibmssp directory.
4. To use the Update Firmware feature of the Remote Supervisor Adapter II Web interface to update the Remote Supervisor Adapter II firmware, see the "Updating firmware" section in the *IBM Remote Supervisor Adapter II User's Guide*. The firmware update packet files that you need are in the ibmssp directory.
5. To update the Remote Supervisor Adapter II firmware from a command-line prompt, complete the following steps:

   a. Type the following command and press Enter:

   ```
   ./lflash -r
   ```

   The system updates the Remote Supervisor Adapter II firmware.

   b. After the Remote Supervisor Adapter II firmware update process is completed, you will see a message similar to the following message:

   ```
   Rebooting RSA...done.
   ```

Using the Configuration/Setup Utility to view and change Remote Supervisor Adapter II settings

The Configuration/Setup Utility program is a menu-driven utility program that is part of the BIOS code that comes with your server. You can use this utility program to view and change the following Remote Supervisor Adapter II information:

- MAC address
- DHCP setting
- Current IP address
- Subnet mask
- Select Linux for the operating-system USB support

Complete the following steps to use the Configuration/Setup Utility program to view and change the Remote Supervisor Adapter II settings:

1. If you have not already done so, update the server BIOS code. For more information, see "Updating the server BIOS code" on page 2.
2. Turn on or restart the server and watch the monitor screen.
3. When the message `Press F1 for Configuration/Setup` appears, press F1.

   Note: If you have previously set both levels of passwords (power-on and administrator), you must type the administrator password to access the full Configuration/Setup Utility menu. Without the administrator password, limited Configuration/Setup Utility program functions are available.

4. Select **Advanced Setup** and then select **RSA II Settings**. The RSA II Settings window opens.
5. Select the values you want to change. If you want to change the **DHCP Control** setting, the values are:
   - **Try DHCP server. If it fails, use static IP config.** (default)
   - **DHCP Enabled**
   - **Use Static IP**
6. If you make changes, select **Save Values and Reboot RSA II**.

Note: If you plan to use DHCP, record the MAC Address of the Remote Supervisor Adapter II and give it to your network administrator. Your network administrator will give you the IP address.

Using the Advanced Settings Utility to configure Remote Supervisor Adapter II settings

You can use the Advanced Settings Utility to directly configure the Remote Supervisor Adapter II. This command-driven utility is included in the Linux installation kit that you downloaded from the IBM Support Web site.

You can perform the following tasks using the Advanced Settings Utility:

- Configure the Remote Supervisor Adapter II Ethernet settings
- Configure the Remote Supervisor Adapter II serial connection settings

Note: Be sure to install the Remote Supervisor Adapter II device drivers *before* using the Advanced Settings Utility. To install the device drivers, see "Remote Supervisor Adapter II device drivers for Linux" on page 3.

Unpacking the utility files

Complete the following steps to unpack the Advanced Settings Utility files:

1. Open an xterm or other terminal window.
2. Change to the ibmssp directory.
3. From a shell command-line prompt, type the following command and press Enter:

   "`tar -zxvf` *filename*.`tgz`", where *filename* is the file name for Remote Supervisor Adapter II Advanced Settings Utility for Linux that is listed in the readme file.

   The files are automatically extracted to the ibmssp directory.

Using the asu command

The Advanced Settings Utility uses the **asu** command. You can use the following modes with the **asu** command:

Notes:

1. In the following list of commands, *setting* is the Remote Supervisor Adapter II setting that you want to view or change and *value* is the value that you are placing on the setting.
2. If *value* contains spaces, enclose the value string with quotation marks (").

- To see all of the **asu** command modes and options, type the following command:

  `./asu`

- To change a value, type the following command:

  `./asu set` *setting value*

- To show the current value, type the following command:

  `./asu show` *setting value*

- To show all possible values, type following command:

  `./asu showvalues` *setting value*

You will need to install a code patch to update the asu command files before using the **asu** command. Complete the following steps to install the code patch:

1. Open an xterm or other terminal window and change to the ibmssp directory.
2. Type

   `./asu patchadd` *filename*.`def`, where *filename* is the file name of the *.def file in the ibmssp directory.

Configuring the Ethernet settings

The Remote Supervisor Adapter II requires configuration to enable remote access to the adapter through the adapter Ethernet and serial connectors.

For detailed information about using the ASM Web interface for remote access, see the *IBM Remote Supervisor Adapter II User's Guide*.

You can use the Advanced Settings Utility to configure the Remote Supervisor Adapter II Ethernet settings.

Note: If you have an accessible, active, and configured Dynamic Host Configuration Protocol (DHCP) server on your network, the host name, IP address, gateway address, and subnet mask are set automatically. You can use the Configuration/Setup Utility program that is part of the server BIOS

code to select DHPC server settings. For more information, see "Using the Configuration/Setup Utility to view and change Remote Supervisor Adapter II settings" on page 6. You can also configure the DHCP setting using the Advanced Settings Utility. To use the utility, continue with the following procedure.

If you have an enabled DHCP server and you want to configure the serial connector, go to "Configuring the serial connection."

Complete the following steps to configure the Ethernet settings if you do not have a DHCP server on your network:

1. If necessary, open an xterm or other terminal window and change to the ibmssp directory.

2. To view a list of all settings and their assigned values, from a shell command-line prompt, type the following command and press Enter:

   `./asu show all`

3. From the following list, select the items that you want to set:
   - To enable the network interface on the Remote Supervisor Adapter II, type the following command and press Enter:

     `./asu set RSA_Network1 Enabled`

   - To set the IP address, type `./asu set RSA_HostIPAddress1`, type the IP address of the Remote Supervisor Adapter II, and press Enter.

   - To set the subnet mask, type `./asu set RSA_HostIPSubnet1`, type the value for the subnet mask, and press Enter. The default value is 255.255.255.0.

   - To set the gateway IP address, type `./asu set RSA_GatewayIPAddress1`, type the IP address of the gateway, and press Enter.

   - To enable DHCP, type `./asu set RSA_DHCP1 Enabled`, and press Enter.

   - To set the data-transfer rate, type `./asu set RSA_LANDataRate1 "10M Ethernet"` for 10 Mbps data-transfer rate or `./asu set RSA_LANDataRate1 "100M Ethernet"` for 100 Mbps data-transfer rate, and press Enter.

   - To set duplex mode, type `./asu set RSA_Duplex1 Half`, `Full`, or `Auto`, and press Enter.

4. To exit the command prompt, type `exit`.

Configuring the serial connection

You can use the Advanced Settings Utility to configure the Remote Supervisor Adapter II serial connection. The serial connector connects to a modem for dial-out support only.

Complete the following steps to configure the Remote Supervisor Adapter II serial connection for access to a modem:

1. Open an xterm or other terminal window and change to the ibmssp directory.

2. To view a list of all of the settings and assigned values, type the following command and press Enter:

   `./asu show all`

3. You can select from the commands in the following list:
   - To change the modem baud rate, type the following command and press Enter:

     `./asu set RSA_ModemBaudRate1` *value*, where *value* is a number from 2400 to 57600 in increments of 2400 (for example, 2400, 4800, 7200, 9600, ...57600). The default is 57600.

Note: Make sure that the baud rate matches the baud rate of the device you are connecting to the serial connector on the Remote Supervisor Adapter II.

- To change the modem parity, type the following command and press Enter:

  `./asu set RSA_ModemParity1` *value*, where *value* is None, Odd, Even, Mark, or Space. The default is None.

- To change modem stop bits, type the following command and press Enter:

  `./asu set RSA_ModemStopBits1` *value*, where *value* is either 1 or 2. The default is 1.

4. To exit the command prompt, type `exit`.

Appendix. Notices

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