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7135-110 RAIDiant Array — UPDATED Installation Instructions

Special Notices

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Note: The information in this document has **not** been verified for AIX 4.1.

About This Document

These instructions are equivalent to Chapter 3 of the 7135-110 RAIDiant Array for AIX Installation Guide and Reference (SC23-2728-01), "Installing the RAIDiant Array". They supersede the section "How to Install the RAIDiant Array Software" in Chapter 3 of the 7135 RAIDiant Array for AIX Installation and Reference (SC23-2728-00). Please read very carefully and follow the section which best describes your installation. You will also require the new level of the 7135 RAIDiant Array Installation and Service Guide (SY33-0181-03), which explains the new 7135 RAIDiant Array Service Aids.

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- First Time Installation of RAIDiant Array Software
- Upgrade Existing 7135 to Dual Active
- New 7135 on Dual Active System

  Note: Use the "New 7135 on Dual Active System" section when attaching a 7135 to a new host on which AIX and the RAIDiant Array software have been preinstalled.
- Installing New 7135 and Upgrade to Dual Active
- Install 7135 Software Update on Dual Active System (PTFs)

Important Notes for Active Passive Configurations

If you wish to remain using Active Passive configurations of your 7135 hardware, **you must not install** the new RAIDiant Array Software and should **not** refer to the following documentation.

- 7135 RAIDiant Array for AIX Installation and Reference (SC23-2728-**)
- 7135 RAIDiant Array Installation and Service Guide (SY33-0181-03) level 3 or higher.

Active Passive configurations are **supported only** for the 1.3 GB and 2.0 GB disk drives. In order to install the 2.2 GB or 4.5 GB disk drives on the 7135, you **must upgrade the 7135 to dual active,** using the new RAIDiant Array software (including download of the new array controller microcode).

Warnings

When adding or replacing physical drives in a dual active RAIDiant array, the physical drive microcode must be downloaded to each new drive using Service Aids before running the RAIDiant Array diagnostics (problem determination or system verification) **unless** the warranty label on the drive carrier has a date code of 1995 onwards.

If your 7135 is attached using SCSI-2 Differential Fast/Wide Adapters, verify that the latest microcode has been loaded onto them. First, determine the device names of the installed adapter with the following command:

```
lsdev -C | grep ascsi
```

For each adapter listed by this command, run the following command to to list the adapter attributes:

```
lscfg -vl <ascsi#>
```

where <ascsi#> is one of the devices returned by the first command.

Then look through the output for an attribute titled "ROS Level and ID". It should have a value of 70 or higher if you are running in a single host environment, or 72 or higher for multi-host configurations. If an adapter microcode update is required, contact your IBM service representative.

| Note: In order to run the Graphical Disk Array Manager, AIXwindows and Motif version 1.2 (APARs IX38671 and IX38685) must be loaded and running on your host system.

| Note: During heavy host activity and resource usage, it is recommended that the Graphical Disk Array Manager only be used for viewing the 7135 RAIDiant Array configuration. Quiesce (stop) activity on the host system before using the graphical Disk Array Manager to modify the 7135 RAIDiant Array configuration.

First Time Installation of RAIDiant Array Software

Use this section if you are installing 7135 system code and 7135 hardware for the first time.

Warning: Do not run diagnostics to the 7135 at any stage during the installation of RAIDiant Array Software.

Prerequisites

- Back up system (mksysb).
- Ensure at least 8 MB free space in /tmp directory.
- 7135 is **not** connected to the RISC system.
- Ensure no SCARRAY files exist on the host. (lslpp -l scarray.obj)

Actions

1. Make sure no one is currently using the system and that file system backup is complete.
2. Insert the scarray.obj device driver and RAIDiant Array software tape into the tape drive.
3. From smit, select:

   Software Installation & Maintenance
   Install / Update Software
   Install / Update Selectable Software (Custom Install)
   Install From All Available Software Packages

4. Select the input device (default tape drive), using F4 to list the devices.
5. Select the "SOFTWARE to install" using F4 to display the list of install images on the tape. Then select scarray.ALL. Toggle COMMIT software to "no", and SAVE replaced files to "yes". Press Enter to begin installation process.

   During the installation process, the screen will display messages while the scarray.obj device driver and RAIDiant Array software are loaded onto the system. If the messages indicate that the installation was not successful, try again, or contact your service representative.

```
Type or select values in entry fields.
Press Enter AFTER making all desired changes.

* INPUT device / directory for software              /dev/rmt0
* SOFTWARE to install                                scarray.ALL
  Automatically install PREREQUISITE software?      yes
  COMMIT software?                                  no
  SAVE replaced files?                              yes
  VERIFY software?                                  no
  EXTEND file systems if space needed?              yes
  REMOVE input file after installation?             no
  OVERWRITE existing version?                       no
  ALTERNATE save directory                          ( )
```

6. Shut down the host system.
7. Attach the 7135 hardware to the host system.
8. Restart the host system.
9. Verify the RAIDiant Array software and controller connections (see 7135 RAIDiant Array for AIX Installation and Reference, "How to verify RAIDiant Array installation, and Disk Array Controller Connections.")

   For all 7135s installed, note which of the Disk Array Controllers (dac) are ACTIVE (for use in the next step).
10. Using the 7135 RAIDiant Array Installation and Service Guide, select "Service Aids" to download array controller microcode to all ACTIVE controllers identified in the previous step.

    From diag select:

    Service Aids
    7135 RAIDiant Array Service Aids
    Array Controller Microcode Download

    and follow the instructions.
11. Using the 7135 RAIDiant Array Installation and Service Guide, select Service Aids to update the controller EEPROM values to all controllers identified in step 9.

    From diag select:

    Service Aids
    7135 RAIDiant Array Service Aids
    Update EEPROM

    and follow the instructions.
12. Using the 7135 RAIDiant Array Installation and Service Guide, select "Service Aids" to download physical disk microcode to ALL physical disks on all active controllers as identified in step 9.

From diag select:

Service Aids
7135 RAIDiant Array Service Aids
Physical Disk Microcode Download

and follow the instructions.

Note: If the latest level microcode is already on a disk, you will get a warning message that the correct level is already loaded. No further action is required for that disk.

13. Perform complete power cycle of 7135s and host systems.
14. Perform the command

    ```
    chdev -l dar*
    ```

    (where * is the number of each DAR (Disk Array Router) device on the system). This step puts the array controllers into dual active mode.
15. Verify the RAIDiant Array software and controller connections (see the 7135 RAIDiant Array for AIX Installation and Reference, "How to verify RAIDiant Array installation, and Disk Array Controller Connections.")

    Ensure that all disk array controllers are now active.
16. The installation of the RAIDiant Array Software is now complete.
17. Run diagnostics to each DAC on the system to ensure all paths and hardware are functioning correctly.

Upgrade Existing 7135 to Dual Active

Use these steps if you are upgrading RAIDiant Array software to support Dual Active 7135 controllers.

Warning: Do not run diagnostics to the 7135 at any stage during the installation of RAIDiant Array Software.

Prerequisites

- Back up system (mksysb), and all file systems.
- Ensure at least 8 MB free space in /tmp directory.

Actions

1. Make sure no one is currently using the system, and that file system backups are complete.
2. Remove all devices associated with the RAIDiant Array. The following example is a shell script that removes the appropriate devices:

   ```
   lsdev -Ct array    | cut -d ' ' -f1 | xargs -n1 rmdev -dl
   lsdev -Ct dar      | cut -d ' ' -f1 | xargs -n1 rmdev -dl
   lsdev -Ct dac7135  | cut -d ' ' -f1 | xargs -n1 rmdev -dl
   ```

3. Insert the new scarray.obj device driver and RAIDiant Array software tape into the tape drive.
4. From smit, select:

   Software Installation & Maintenance
   Install / Update Software
   Install / Update Selectable Software (Custom Install)
   Install From All Available Software Packages

5. Select the input device (default tape drive), using F4 to list the devices.
6. Select the "SOFTWARE to install", using F4 to display the list of install images on the tape. Then select scarray.ALL. Toggle COMMIT software to "no", and SAVE replaced files to "yes".

```
Type or select values in entry fields.
Press Enter AFTER making all desired changes.


* INPUT device / directory for software              /dev/rmt0
* SOFTWARE to install                                scarray.ALL
  Automatically install PREREQUISITE software?      yes
  COMMIT software?                                  no
  SAVE replaced files?                              yes
  VERIFY software?                                  no
  EXTEND file systems if space needed?              yes
  REMOVE input file after installation?             no
  OVERWRITE existing version?                       no
  ALTERNATE save directory                          ( )
```

7. Press Enter to begin installation process.

   During the installation process the screen will display messages while the scarray.obj device driver and RAIDiant Array software are loaded onto the system.

   If the messages indicate that the installation was not successful, try again, or contact your service representative.

8. Shut down the host system.
9. Restart the host system.
10. Verify the RAIDiant Array software and controller connections (see the 7135 RAIDiant Array for AIX Installation and Reference, "How to verify RAIDiant Array installation, and Disk Array Controller Connections.")

    For all 7135s installed, note which of the Disk Array Controllers (dac) are ACTIVE (for use in the next step).

11. Using the 7135 RAIDiant Array Installation and Service Guide, select Service Aids to download array controller microcode, to all ACTIVE controllers identified in the previous step.

    From diag select:

    Service Aids
    7135 RAIDiant Array Service Aids
    Array Controller Microcode Download

    and follow the instructions.

12. Using the 7135 RAIDiant Array Installation and Service Guide, select Service Aids to update the controller EEPROM values to all controllers identified in step 10.

    From diag select:

    Service Aids
    7135 RAIDiant Array Service Aids
    Update EEPROM

    and follow the instructions.

13. Using the 7135 RAIDiant Array Installation and Service Guide, select Service Aids to download physical disk microcode to ALL physical disks on all active controllers as identified in step 10.

    From diag select:

    Service Aids
    7135 RAIDiant Array Service Aids
    Physical Disk Microcode Download

    and follow the instructions.

    Note: If the latest level microcode is already on a disk, you will get a warning message that the correct level is already loaded. No further action is required for that disk.

14. Perform complete power cycle of 7135s and host systems.

15. Perform the command

    ```
    chdev -l dar*
    ```

    (where * is the number of each DAR (Disk Array Router) device on the system). This step puts the array controllers into dual active mode.

16. Verify the RAIDiant Array software and controller connections (see the 7135 RAIDiant Array for AIX Installation and Reference, "How to verify RAIDiant Array installation, and Disk Array Controller Connections"). Ensure that all disk array controllers are now active.

17. The installation of the RAIDiant Array Software is now complete.

18. Run diagnostics to each DAC on the system to ensure all paths and hardware are functioning correctly.

New 7135 on Dual Active System

Use these steps if you are installing new 7135 hardware on an existing dual active system.

Note: Use this section when attaching a 7135 to a new host on which AIX and the RAIDiant Array software have been preinstalled.

Warning: **Do not** run diagnostics to the 7135 at any stage during the installation of RAIDiant Array Software.

Prerequisites

- Ensure new 7135 hardware is correctly attached to the host system, in the required configuration, using the 7135 RAIDiant Array Installation and Service Guide (SY33-0181-03).
- No users should be using the system, as installation requires that the system will be power cycled.

Actions

1. Verify the RAIDiant Array software and controller connections (see the 7135 RAIDiant Array for AIX Installation and Reference, "How to verify RAIDiant Array installation, and Disk Array Controller Connections"). For newly installed 7135s, note which of the Disk Array Controllers (dac) are ACTIVE (for use in the next step).

2. Using the 7135 RAIDiant Array Installation and Service Guide, select "Service Aids" to download array controller microcode to the new ACTIVE controllers identified in the previous step.

   From diag select:

   Service Aids
   7135 RAIDiant Array Service Aids
   Array Controller Microcode Download

   and follow the instructions.

3. Using the 7135 RAIDiant Array Installation and Service Guide, select "Service Aids" to update the controller EEPROM values on all new controllers identified in step 1.

   From diag select:

   Service Aids
   7135 RAIDiant Array Service Aids
   Update EEPROM

   and follow the instructions.

4. Using the 7135 RAIDiant Array Installation and Service Guide, select "Service Aids" to download physical disk microcode to ALL physical disks on new active controllers as identified in step 1

   From diag select:

Service Aids
7135 RAIDiant Array Service Aids
Physical Disk Microcode Download

and follow the instructions.

Note: If the latest level microcode is already on a disk, you will get a warning message that the correct level is already loaded. No further action is required for that disk.

5. Perform complete power cycle of 7135s and host systems.
6. Perform the command

   ```
   chdev -l dar*
   ```

   (where * is the number of each DAR (Disk Array Router) device on the system). This step puts the array controllers into dual active mode.
7. Verify the RAIDiant Array software and controller connections (see the 7135 RAIDiant Array for AIX Installation and Reference, "How to verify RAIDiant Array installation, and Disk Array Controller Connections"). Ensure that all disk array controllers are now active.
8. The installation of the 7135 on a system with the Dual Active RAIDiant Array Software is now complete.
9. Run diagnostics to each DAC on the system to ensure all paths and hardware are functioning correctly.

Installing New 7135 and Upgrade to Dual Active

Use this section if you are installing new 7135 hardware and upgrading SCARRAY.OBJ to dual active.

1. Install and attach 7135 to existing system, following the 7135 RAIDiant Array Installation and Service Guide, and the READI & REACT Software Guide for the IBM 7135 RAIDiant Array Model 110 (SC23-2572-01).
2. Follow the procedure to upgrade an existing system to Dual Active software.

Install 7135 Software Update on Dual Active System

Use this section if you are installing a 7135 software PTF to update a dual active system.

Prerequisites

- Back up system (mksysb).
- Ensure at least 8 MB free space in /tmp directory.

Actions

1. Make sure no on is currently using the system and that file system backups are complete.
2. Remove all devices associated with the RAIDiant Array. The following example is a shell script that removes the appropriate devices:

```
lsdev -Ct array   | cut -d ' ' -f1 | xargs -n1 rmdev -dl
lsdev -Ct dar     | cut -d ' ' -f1 | xargs -n1 rmdev -dl
lsdev -Ct dac7135 | cut -d ' ' -f1 | xargs -n1 rmdev -dl
```

3. Insert the new scarray.obj device driver and RAIDiant Array software tape into the tape device.
4. From smit, select

   Software Installation and Maintenance
   Install / Update Software
   Install / Update Selectable Software (Custom Install)
   Install From All Available Software Packages.

5. Select the input device (default tape drive), using F4 to list the devices.
6. Select "SOFTWARE to install", using F4 to display the list of install images on the tape. Then select scarray.ALL. Toggle COMMIT software to "no", and SAVE replaced files to "yes".

```
Type or select values in entry fields.
Press Enter AFTER making all desired changes.


* INPUT device / directory for software              /dev/rmt0
* SOFTWARE to install                                scarray.ALL
  Automatically install PREREQUISITE software?      yes
  COMMIT software?                                  no
  SAVE replaced files?                              yes
  VERIFY software?                                  no
  EXTEND file systems if space needed?              yes
  REMOVE input file after installation?             no
  OVERWRITE existing version?                       no
  ALTERNATE save directory                          ( )
```

7. Press Enter to begin installation process. During the installation process the screen will display messages while the scarray.obj device driver and RAIDiant Array software are loaded onto the system.

   If the messages indicate that the installation was not successful, try again, or contact your service representative.

8. Shut down the host system.
9. Restart the host system.

10. Verify the RAIDiant Array software and controller connections (see the 7135 RAIDiant Array for AIX Installation and Reference, "How to verify RAIDiant Array installation, and Disk Array Controller Connections.")

11. The remainder of the installation instructions have been installed on your system in the file /usr/lpp/scarray/inst_<ptf#> /README, where <ptf#> is a PTF number of the form UXXXXXX for each PTF you have just installed. If you did not make a note of those PTF numbers, you can determine them either by reviewing the SMIT install output or by executing the following command:

    ```
    lslpp -h scarray.obj
    ```

    and noting the PTF numbers in the first column which contain today's date in the fifth column. Use your favorite browser or editor, or execute the following command to view the file(s):

    ```
    pg < /usr/lpp/scarry/insta_<ptf#>/README
    ```

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