Precautions and Alerts - *SRCU31, SRCU31A, SRCU31L and SRCU31L-A*

WARNING –USING THIS SOFTWARE IS NOT A TRIVIAL UPGRADE TO EXISTING RAID INSTALLATIONS!

1. For any NEW installations with only one Intel RAID card installed, it is recommended that the new RAID software stack be utilized.

2. For any NEW installations with more than one Intel RAID card installed, both cards must use the same versions of firmware, drivers and utilities. This will ensure full RAID compatibility, physical drive portability and functionality of all volume date.

3. For any EXISTING field installations with the current software stack, customers have the choice to:

a) Keep the existing field installations on the current software. This is low-risk and recommended approach if the customer is satisfied with the solution.

b) Upgrade the existing field installation to the new software. Because the RAID meta data format is not the same, the data attached to the RAID array must be backed up and restored. This involves backing up the data array, destroying the current RAID array, installation of the new RAID arrays with the new software, and then restoring the data onto the new RAID array. There is a risk of data loss on the RAID array if the data is not correctly backed up previous to the upgrade, as the process requires the RAID array to be 'reset'. Customers should only proceed with this major upgrade if they are comfortable with this backup/restore process.

Install the Operating System

Installing UnixWare

This section discusses installation issues related to the UnixWare operating systems (UnixWare 7.1.1). For a successful installation, study the SCO UNIX system manuals thoroughly. The required Intel RAID Controller SRCU31A or SRCU31L-A disks can be created from the Intel RAID Controller SRCU31L-A system CD-ROM.

General Installation Notes

This section identifies the minimum hardware and software required to successfully install the Intel RAID Controller SRCU31A or SRCU31L-A the accompanying RAID Software Suite.

Minimum Hardware Requirements

- Computer with CD-ROM drive (not attached to the Intel RAID Controller SRCU31A or SRCU31L-A). Computer must be on the supported hardware list (for example, Intel STL2 server board).

- One available 32-bit, 33 MHz, PCI compatible slot.
- PCI 2.2 compliant System BIOS.
- SCSI hard disk drive(s) (the minimum required to meet desired RAID level).

Minimum Software Requirements

- RAID Software Suite CD-ROM
- 20 MB of hard disk space
- RAID Driver Installation Diskette for UnixWare (see Section 2.1 for instructions to create this diskette)
- SCO UnixWare 7.1.1 OS software

Installing the Intel RAID Controller SRCU31A or SRCU31L-A as an Additional Controller

Two cases are discussed below.

No Intel RAID Controller SRCU31A or SRCU31L-A Has Yet Been Configured for UnixWare

In this case, the Intel RAID Controller SRCU31A or SRCU31L-A driver must be installed from the UnixWare BTLD-Disk by means of the UnixWare desktop and the options “System Setup,” “Application Setup.” Alternatively, this procedure can be carried out from the UnixWare shell: “pkgadd -d /dev/ dsk/f0t” (Intel RAID Controller SRCU31A or SRCU31L-A driver disk in drive 0).

An Intel RAID Controller SRCU31A or SRCU31L-A Has Already Been Configured for UnixWare

In this case, you only have to add an additional entry for the new Intel RAID Controller SRCU31A or SRCU31L-A. This is carried out by the command.

```
/etc/scsi/pdiadd -d DRQ -v IRQ -m MEM srch
```

For DRQ use 0 (not necessary for PCI boards). For IRQ write the IRQ number that Intel RAID Controller SRCU31A or SRCU31L-A uses. MEM corresponds to the DPMEM address of the Intel RAID Controller SRCU31A or SRCU31L-A (which is displayed in the BIOS message of the Intel RAID Controller SRCU31A or SRCU31L-A after power up). In both cases, you have to carry out a cold boot to use the new Intel RAID Controller SRCU31A or SRCU31L-A under UnixWare.

Example: `/etc/scsi/pdiadd -d 0 -v 12 -m c8000 srch`

Then reboot of the UnixWare system. No kernel link is required because the driver will be dynamically loaded.

Installing an Operating System onto a Host Drive or Single Disk

NOTE

When installing UnixWare, create only one RAID device (host drive) on which the operating system is to be installed.

1. Create and configure one RAID device from the BIOS of Intel RAID Controller SRCU31A or SRCU31L-A StorCon (accessed by pressing <Ctrl> + <G>).
2. Insert UnixWare 7.1.1 installation diskette 1 of 2 which was included with your OS user's manual. Installation begins.

   During the installation UnixWare prompts you to insert a Host Bus Adapter (HBA) diskette. Insert the Intel RAID Controller SRCU31A or SRCU31L-A installation diskette. If you do not have the Intel RAID Controller SRCU31A or SRCU31L-A installation diskette for the operating system that you are installing, then create it before continuing. See Chapter 2 for instructions to create this disk.

3. During the installation of UnixWare, you will be prompted to install the Network Information Services (NIS) package. By default the installation will configure your system as an NIS client. See your system administrator for configuration of the NIS services.

NOTE

Installation of this service may take an extended period of time.

If you do not plan on using the NIS or there is not an NIS server present on your network that you are installing this system onto, defer installation of NIS at this time by pressing <F8> at the NIS configuration screen.

4. After completing the OS installation, proceed to the next paragraph to complete the Intel RAID Controller SRCU31A or SRCU31L-A installation.

Installation of the RAID Software Suite for UnixWare

1. Ensure that the minimum configuration requirements have been met. See the Computer System Requirements and the Minimum Software Requirements sections.
2. Login into the UnixWare server with administrative (ROOT) rights.
3. Insert the RAID Software Suite CD-ROM in the CD-ROM drive and mount the CD-ROM.
   - Create a directory to mount the file. For example, type "mkdir cdfiles" at the prompt.
   - Mount the CD-ROM to the folder by typing:

```
mount -F cdfs -r /dev/cdrom/cdrom1 /cdfiles
```

Coordinates of SCSI Devices

Host Adapter Number (HA)

The host adapter number assigned to the Intel RAID Controller SRCU31A or SRCU31L-A is derived from the PCI slot number of the Intel RAID Controller SRCU31A or SRCU31L-A. Therefore, if there is only one Intel RAID Controller SRCU31A or SRCU31L-A installed in the PCI bus computer system, the host adapter number is 0. If there are two Intel RAID Controller SRCU31A or SRCU31L-As installed, the Intel RAID Controller SRCU31A or SRCU31L-A with the lower PCI Slot number is assigned host adapter number 0 and the Intel RAID Controller SRCU31A or SRCU31L-A with the higher PCI slot number is assigned host adapter 1.

NOTE

After a cold boot, the Intel RAID Controller SRCU31A or SRCU31L-A BIOS displays a couple of messages, each beginning with the controller's PCI slot number, for example, "[PCI 0/3] 4 MB RAM detected." The number after the "/" is the slot number of the controller. This will help determine the order of the Intel RAID Controller SRCU31A or SRCU31L-As and which host adapter number is assigned to them by UnixWare.

UnixWare Bus Number, Target ID and LUN

Target IDs and LUNs for “Non-Direct Access Devices” (devices like streamers, tapes and CD-ROMs and therefore not configurable via StorCon), are directly assigned to the SCSI ID and the channel of the Intel® RAID Controller SRCU31A or SRCU31L-A. Host drives are assigned in increasing order to the free coordinates (bus number and target ID;LUN is always 0).

Configuration Example

In the PCI computer are two Intel® RAID Controller SRCU31A or SRCU31L-A’s (HA 0 = 1st Intel RAID Controller SRCU31A or SRCU31L-A, HA 1 = 2nd Intel RAID Controller SRCU31A or SRCU31L-A), each with one SCSI channel.

1 Hard Disk as host drive no. 0 on HA0

1 Hard Disk as host drive no. 0 on HA1
1 Streamer SCSI ID 2, LUN 0 on SCSI channel A of HA0
1 DAT SCSI ID 2, LUN 0 on SCSI channel A of HA1

The resulting HA, Bus, Target ID and LUN are indicated in Table 13.

Table 13. UnixWare Bus Number, Target ID and LUN

HA	Bus	Target ID	Lun	Device
0	0	0	0	1st hard disk, host drive no. 0 (boot drive)
0	0	2	0	Streamer
0	1	3	0	CD-ROM
1	0	0	0	Hard disk, host drive no. 0
1	0	2	0	DAT

Additional Information

- During the installation of the Intel® RAID Controller SRCU31A or SRCU31L-A driver, additional tools are copied into the "/etc" directory. Before you can use them you have to create a special device file named "/dev/ rsrch" by means of "link." This device file has to be placed on a device of an Intel RAID Controller SRCU31A or SRCU31L-A host drive.
- With "RAIDSYNC" from the "/etc" directory, you can determine the coordinates of an Intel RAID Controller SRCU31A or SRCU31L-A host drive. Usually the first host drive has the coordinates "c0b0t0d0."
- A special device file (character device) is "/dev/rdsk/c0b0t0d0s0." In this case, "/dev/rsrch" can be generated with:
  `ln /dev/rdsk/c0b0t0d0s0 /dev/rsrch` (c0 = HA, b0 = Bus number, t0 = Target ID 0, d0 = LUN 0, s0 = UnixWare partition).
- All new SCSI devices are automatically recognized and a corresponding special device file is generated.
- Host drives must be partitioned and a file system/file system(s) must be created. You can do this with:
  `diskadd cCbBtTdD`
- When using Direct Access Devices with exchangeable media (for example, removable hard disks) that are not reserved for the raw service, media has to be inserted either when the system is booted, or with StorCon (mount/unmount). Otherwise the device will not be available under UnixWare.
- The Intel® RAID Controller SRCU31A or SRCU31L-A UnixWare driver supports Direct Access Devices (for example, hard disks, removable hard disks) as SCSI-raw devices. This is especially important if you use removable hard disks which you want to exchange with other controllers. How to reserve a device for the SCSI-raw service is described in the "space.c" file on the Intel RAID Controller SRCU31A or SRCU31L-A BTLD disk (example and documentation).
- Multi-processor support: The Intel RAID Controller SRCU31A or SRCU31L-A device drivers for UnixWare 7.1.1 support multi-processor systems.

For Detailed instructions please refer to the Users Guide.pdf located on the RAID distribution CD and on :

http://support.intel.com/support/motherboards/server/