# BOLETIN DE SOPORTE TECNICO DE PERIFERICOS

## (Serie DISCOS)

| Número | Fecha | Asunto |
|---|---|---|
| BSTD-4/99 | 22 Noviembre, 1999 | Instalación de discos MAE3xxx y MAF3xxx en entornos UNIX. |

**Soporte Técnico de Periféricos**
**Departamento de Integración y Soporte**
**FUJITSU ICL ESPAÑA S.A.**

## INTRODUCCIÓN

Este boletín describe el proceso de instalación de los discos duros Fujitsu MAE3xxx y MAF3xxx en los siguientes entornos UNIX:

1. DEC OpenVMS V6.* y V7.*
2. DEC OSF/1 V3.* y V4.*
3. HP9000 con HPUX 10.* y 11.*
4. IBM RS6000 AIX 3.2.5 and 4.*.*
5. Sun Solaris 2.*
6. Sun Solaris 1.1.*
7. Silicon Graphics con Irix 6.*.
8. Linux

## NOTAS

DEC OpenVMS

- Si el código de arranque del sistema Alpha es V7.7 o superior, los discos pueden ser de arranque. En caso contrario, sólo pueden utilizarse como discos de datos.

Solaris 1.1.*

- Debido a una limitación del sistema, el número máximo de bloques accesibles en el disco MAE3182 es 33,537,600 (16 GB aproximadamente). A su vez, el modelo MAF3364 no se ha certificado debido a que no se puede acceder a más de la mitad de la capacidad del disco.

# Fujitsu MAE/MAF disk drives on DEC OpenVMS

This document applies to the Fujitsu MAE/MAF disk drives when configured under OpenVMS V6.* and V7.*. If the Alpha boot code is V7.7 or above then these drives can be bootable, otherwise they can only be used as data devices.

The disk drive is installed at a unique SCSI I.D. which can be established using the **show dev<cr>** or **show cnfg all<cr>** command at the startup phase to output a device inventory.

In the example below the disk drive is configured at SCSI I.D. 3 on the primary disk controller.

1. Boot the DEC system, log in under the system manager and, if using windows, start a terminal window.

2. The disk drive can be initialised under the operating system:

   **$ ini dka300: fujitsu<cr>**

3. The disk drive can now be mounted and made available to all of the users:

   **$ mou/share dka300: fujitsu<cr>**

4. To check that the disk drive is mounted correctly use the command below which will output a complete status:

   **$ show device dka300:/full<cr>**

# Fujitsu MAE/MAF disk drives on DEC OSF/1

This document applies to the Fujitsu MAE/MAF disk drives when configured under OSF/1 V3.* and V4.*.

The disk drive is installed at a unique SCSI I.D. which can be established using the **show dev<cr>** or **show cnfg all<cr>** command at the startup phase to output a device inventory.

In the example below the disk drive is configured at SCSI I.D. 3 on the primary disk controller.

1. Boot the DEC system, log in under root and, if using windows, start a terminal window.

2. Edit the file /etc/disktab to add the following 10 line entry at the end of the file. Insert into the file the required two line header, dependant on the disk drive, followed by the 8 line partition data, which is identical for each drive:

```
MAE3091|MAE3091|Fujitsu MAE 9.1 GByte disk drive:\                    MAE3091
        :ty=winchester:dt=scsi:ns#425:nt#4:nc#10486:\

MAE3182|MAE3182|Fujitsu MAE 18.2 GByte disk drive:\                    MAE3182
        :ty=winchester:dt=scsi:ns#425:nt#8:nc#10500:\

MAF3364|MAF3364|Fujitsu MAF 36.4 GByte disk drive:\                    MAF3364
        :ty=winchester:dt=scsi:ns#420:nt#19:nc#8917:\

        :oa#0:pa#131072:ba#8192:fa#1024:\                              All drives
        :ob#131072:pb#262144:bb#8192:fb#1024:\
        :oc#0:pc#-1:bc#8192:fc#1024:\
        :od#0:pd#0:bd#8192:fd#1024:\
        :oe#0:pe#0:be#8192:fe#1024:\
        :of#0:pf#0:bf#8192:ff#1024:\
        :og#393216:pg#-1:bg#8192:fg#1024:\
        :oh#0:ph#0:bh#8192:fh#1024:
```

3. Write the header label to the disk drive:

```
# disklabel  -r  -w  /dev/rrz3a  MAE3091<cr>          MAE3091
# disklabel  -r  -w  /dev/rrz3a  MAE3182<cr>          MAE3182
# disklabel  -r  -w  /dev/rrz3a  MAF3364<cr>          MAF3364
```

4. Make a file system on the whole disk drive:

```
# newfs  -c 20 /dev/rz3c<cr>                          MAE3091
# newfs  -c 20 /dev/rz3c<cr>                          MAE3182
# newfs  -c 12 /dev/rz3c<cr>                          MAF3364
```

5. Create a directory and mount the disk drive:

```
# mkdir  /fujitsu<cr>
# mount  /dev/rz3c  /fujitsu<cr>
```

6. Check that the disk drive has been mounted correctly:

```
# df  -k<cr>
```

# Fujitsu MAE/MAF disks on HP9000 series HPUX 10.*/11.*

This document applies to the Fujitsu MAE/MAF disk drives when configured on the HP9000 series systems under HPUX 10.* and 11.*.

| User Cylinders | Tracks | Sectors/Track | 512 Byte Blocks | Drive |
|---|---|---|---|---|
| 10486 | 4 | 425 | 17,826,240 | MAE3091 |
| 10500 | 8 | 425 | 35,700,480 | MAE3182 |
| 8917 | 19 | 420 | 71,161,520 | MAF3364 |

The disk drive is installed at a unique SCSI I.D. which can be established using the **search<cr>** command at the console command monitor stage or **ioscan -fC disk<cr>** at a terminal window, to output a SCSI bus inventory.

1. Boot the HP system then log in under root.

2. If required, the disk drive can be formatted and reinitialised. Note that this may take a long time.

   **# mediainit -v /dev/rdsk/cxtyd0<cr>**

   | | |
   |---|---|
   | cx | Controller number, usually 0 |
   | ty | Drive number. y is the SCSI I.D. of the drive |

3. Make the file system on the disk drive.

   **# newfs /dev/rdsk/cxtyd0<cr>**

   | | |
   |---|---|
   | cx | Controller number, usually 0 |
   | ty | Drive number. y is the SCSI I.D. of the drive |

4. The disk drive can now be mounted and made available.

   **# mkdir /fujitsu<cr>**
   **# mount /dev/dsk/cxtyd0 /fujitsu<cr>**

   | | |
   |---|---|
   | cx | Controller number, usually 0 |
   | ty | Drive number. y is the SCSI I.D. of the drive |

# Fujitsu MAE/MAF disk drives on IBM RS6000 AIX

This document applies to the Fujitsu MAE/MAF disk drives when configured under AIX 3.2.5 and 4.*.*.

The disk drive is installed at a unique SCSI I.D. which can be established using the command **lsdev -C -s scsi<cr>** at a terminal window when AIX is running, to output a hardware inventory of all the SCSI devices configured onto the system.

1. Boot the IBM RS6000, log in under root and, if using windows, start a terminal window.

2. Type **lsdev -C -s scsi<cr>** to check that the disk drive is configured and marked as 'available'. The device name will be hdisk*. The value of '*' is numeric and provides the disk drive with a unique physical name under the operating system.

3. If the version of AIX is 4.2 or greater then the system utility smit or smitty is entered to enable command tag queuing to improve the disk drives performance.

   Go into Devices
   Go into Fixed Disk
   Go into Change/Show Characteristics of a disk
   Select hdisk* from ‘2’ above
   Set the Queue type to be ordered
   Set the Queue depth to be 64
   Select OK
   Exit four times using PF3 or the mouse

4. The system utility smit or smitty is entered to create a volume group and then to create a file system on the disk drive.

5. A volume group is created by following the basic procedure below:

| | |
|---|---|
| Go into Physical & Logical Storage (3.2.5) | System Storage Management (4.*.*) |
| Go into Logical Volume Management | Logical Volume Manager (4.*.*) |
| Go into Volume Groups | |
| Add a Volume Group on hdisk* | |
| Exit four times using PF3 or the mouse | |

6. A file system is created by following the basic procedure below:

   Go into File Systems
   Go into Add / Change / Show / Delete File Systems
   Go into Journaled File System
   Add a Journaled File System on hdisk*
   The SIZE of file system [in 512-byte blocks] is as follows:

| | |
|---|---|
| MAE3091 | 17,826,200 |
| MAE3182 | 35,700,000 |
| MAF3364 | 71,157,660 |

   Exit four times using PF3 or the mouse

7. The Mount a File System option can be selected to make the disk drive available to the users.

8. The List All Mounted File Systems option can be selected to verify that the above completed correctly.

# Fujitsu MAE/MAF disk drives on Sun Solaris 2.*

This document applies to the Fujitsu MAE/MAF disk drives when configured under Solaris 2.*.

| User Cylinders | Spare Cylinders | Tracks | Sectors/Track | 512 Byte Blocks | Drive |
|---|---|---|---|---|---|
| 10484 | 2 | 4 | 425 | 17,826,240 | MAE3091 |
| 10498 | 2 | 8 | 425 | 35,700,480 | MAE3182 |
| 8915 | 2 | 19 | 420 | 71,161,520 | MAF3364 |

The disk drive is installed at a unique SCSI I.D. which can be established using the **probe-scsi-all<cr>** command at the startup phase to output a SCSI bus inventory.

1. Boot the Sun system using **boot -rv<cr>** to configure the new disk drive, then log in under root.

2. Enter **format<cr>** and select the new disk drive from the table that will be output.

3. For all of the disk drives, they will be auto-configured in terms of physical geometry and logical mapping. Confirm that the disk is to have a Sun label written onto it with **y<cr>**.

4. On completion of the above, exit from the format program by entering **q<cr>**.

5. Make the file system on the disk drive by entering the command below then confirming with a **y<cr>** that a newfs is to be performed. The value of '*' is the SCSI I.D. of the disk drive.

   **# newfs /dev/dsk/c0t*d0s2<cr>**

6. The disk drive can now be mounted and made available to the users by entering the commands below. The value of '*' is the SCSI I.D. of the disk drive.

   **# mkdir /fujitsu<cr>**
   **# mount /dev/dsk/c0t*d0s2 /fujitsu<cr>**

# Fujitsu MAE/MAF disk drives on Sun Solaris 1.1.*

This document applies to the Fujitsu MAE/MAF disk drives when configured under Solaris 1.*. Note, due to a Solaris 1.1.* limitation, the maximum number of blocks that can be addressed on the MAE3182 is 33,537,600. Also, the MAF3364 has not been certified as over half its capacity cannot be accessed.

| User Cylinders | Spare Cylinders | Tracks | Sectors/Track | 512 Byte Blocks | Drive |
|---|---|---|---|---|---|
| 10484 | 2 | 4 | 425 | 17,826,240 | MAE3091 |
| 10498 | 2 | 8 | 425 | 35,700,480 | MAE3182 |

The disk drive is installed at a unique SCSI I.D. which can be established using the **probe-scsi-all<cr>** command at the startup phase to output a SCSI bus inventory.

1. Boot the Sun system then log in under root.

2. Enter **format<cr>** and select the new disk drive from the table that will be output.

3. The type suboption will automatically be entered. Select 'other' drive type then, a number of queries will be output, the majority of which are replied to by entering **<cr>** to set up the default. The queries below have data entered.

| Query | MAE3091 | MAE3182 |
|---|---|---|
| Enter number of data cylinders: | **10484** | **10498** |
| Enter number of heads: | **4** | **8** |
| Enter number of data sectors/track: | **425** | **425** |
| Enter disk type name: | **"MAE3091"** | **"MAE3182"** |

4. Select the partition suboption by entering **p<cr>** and then select the required partition, a, b, c, d, e, f, g or h.

| | | | |
|---|---|---|---|
| Enter new starting cyl [0]: | | **0** | a |
| | | **1233** | b |
| | | **2466** | c |
| | **0** | **3699** | d |
| | **2467** | **4932** | e |
| | **4934** | **6165** | f |
| | **7401** | **7398** | g |
| | **9868** | **8631** | h |
| Enter new #blocks [0, 0/0/0]: | | **1233/0/0** | |
| a-c | | | |
| | **2467/0/0** | **1233/0/0** | |
| d-g | | | |
| | **616/0/0** | **1233/0/0** | h |

5. On completion of the above, select the label suboption by entering **l<cr>** and confirm with a **y<cr>** then exit from the format program by entering **q<cr>** twice.

6. Make the file system on the disk drive by entering the command below then confirming that a newfs is to be performed.
The value of '*****' is the system assigned I.D. of the disk drive and '**+**' is the partition identifier.

**# newfs /dev/rsd*+<cr>**

7. Each partition on the disk drive can now be mounted and made available to the users by entering the commands below.

The value of '*****' is the system assigned I.D. of the disk drive and '**+**' is the partition identifier.

**# mkdir /fujitsu+<cr>**
**# mount /dev/sd*+ /fujitsu+<cr>**

# Fujitsu MAE/MAF disk drives on Silicon Graphics Irix 6.*

This document applies to the Fujitsu MAE/MAF disk drives when configured under Irix 6.*.

The disk drive is installed at a unique SCSI I.D. which can be established using the 'Command Monitor' at the startup phase and entering **hinv -t<cr>** to output a hardware inventory.

1. Boot the Silicon Graphics system and log in under root.

2. Type **fx -x<cr>** and enter **<cr>** to all of the device entries until the drive# query is output when the SCSI I.D. of the disk drive is entered.

3. If required, the disk drive can optionally be formatted by entering **format<cr>** then enter **<cr>** to the first query to enable disk formatting with the default parameters. Enter **yes<cr>** to start the format.

4. Select the **exit<cr>** option then enter **yes<cr>** to write a label to the disk drive. Note, a warning/informational error might be output when the label is written to the disk drive.

5. Make the file system on the disk drive by entering the command below. The value of '*' is the SCSI I.D. of the disk drive.

   **# mkfs /dev/rdsk/dks0d*s0<cr>**

6. The disk drive can now be mounted and made available to the users by entering the commands below. The value of '*' is the SCSI I.D. of the disk drive.

   **# mkdir /fujitsu<cr>**
   **# mount /dev/dsk/dks0d*s0 /fujitsu<cr>**

# Fujitsu MAE/MAF disk drives on Linux

This document applies to the Fujitsu MAE/MAF disk drives when configured under Linux.

The disk drive is installed at a unique SCSI I.D. which needs to be established using the host system or controller BIOS.

In the example below the disk drive is configured at SCSI I.D. 0 on the only configured SCSI controller.

1. Boot the Linux system and log in under root.

2. Use the **dmesg<cr>** command to output the log of the boot process. This will output the assigned device mnemonic of the Fujitsu disk drive. It is recommended that this is piped to more as the output could be many screens. In the example below the device mnemonic is 'sda' and the partition number is 1 giving a full device name of 'sda1'.

   **# dmesg | more<cr>**

3. Create then write the header and partition information to the disk drive:

   **# fdisk /dev/sda<cr>**

| | | |
|---|---|---|
| n | | Add new partition |
| p | | Primary partition |
| 1 | | Partition 1 |
| 1 | | First cylinder |
| 1109 | | MAE3091 last cylinder |
| | or | |
| 2222 | | MAE3182 last cylinder |
| | or | |
| 4429 | | MAF3364 last cylinder |
| w | | Write to disk |

   On completion of the write to disk the actual number of sectors and disk size is output.

| No. Sectors | Disk Size | |
|---|---|---|
| 17,826,240 | 8,704 Mbyte | MAE3091 |
| 35,700,480 | 17,431 Mbyte | MAE3182 |
| 71,161,520 | 34,746 Mbyte | MAF3364 |

4. Make a file system on the whole disk drive:

   **# mkfs /dev/sda1<cr>**

5. Create a directory and mount the disk drive:

   **# mkdir /fujitsu<cr>**
   **# mount /dev/sda1 /fujitsu<cr>**

6. Check that the disk drive has been mounted correctly:

**# df <cr>**

The actual number of 1024 byte blocks will be output.

| No. 1024 Byte Blocks | |
|---|---|
| 8,589,226 | MAE3091 |
| 17,133,470 | MAE3182 |
| 33,860,425 | MAF3182 |