FIELD-READY

TranzStor
– 8X –

USER MANUAL

Z Microsystems

⚡ WARNING ⚠️

TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE. ALSO, DO NOT USE THIS UNIT'S POLARIZED AS PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLETS UNLESS ALL THREE PRONGS CAN BE FULLY INSERTED

1. Use the power cable supplied with the product to help prevent interference with radio and television reception. The use of cables and adapters may cause interference with electronic equipment in the vicinity of this unit.

TranzStor
8X

2. Changes or modifications not expressly approved by Z Microsystems could void user's warranty.

⚡ CAUTION ⚠️
RISK OF ELECTRIC SHOCK - DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK OF UNIT). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

⚡ This symbol warns the user that insulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any part inside this unit.

⚠️ This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore it should be read carefully in order to avoid any problems.

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TABLE OF CONTENTS

SECTION	PAGE

ABOUT MANUAL

This Manual is also available on the Z Microsystems website (www.zmicro.com). We recommend you read this manual carefully and follow the instructions in the Installation chapter for verification of system functions and control settings.

SAFETY PRECAUTIONS

DANGER:

To avoid shock hazard:

- *Do not penetrate the 8X with any screw longer than .18". Damage will occur.*
- *Do not connect or disconnect the 8X during an electrical storm.*
- *The power cord plug must be connected to a properly wired and grounded power outlet.*
- *Any equipment to which the 8X will be attached must also be connected to properly wired and grounded power outlets.*

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PRODUCT DESCRIPTION

From the TranzStor family of low-profile, platform-independent network storage solu-
tions comes the TranzStor 8X SC (SCSI Controller). Featuring an Ultra 160 (or Ultra 320)
SCSI to SCSI RAID controller and 8 hot-swappable TranzPak 7 hard drive modules. The
TranzStor 8X SC RAID array provides data intensive, mission critical applications with the
high-end availability, performance and fault-tolerance they require.

Packed in a tough, lightweight, compact aluminum enclosure, this fail proof hot-plug stor-
age installs easily into any industry standard 7" (4U) RETMA rack or transit case slot. De-
signed specifically to work under extreme conditions, this ultra-rugged low-profile modular
system utilizes hot-pluggable and removable TranzPak 7 hard drives to offer portability in
complex deployed computing environments. Each TranzPak 7 drive holds up to 400 GB
of storage capacity and features an extruded aluminium body and a die cast cam locking
front panel, solid protection for your deployed media investment.

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INSTALLATION

This portion of the Operations chapter is for quick reference only. For a more detailed description of RAID configurations, see the Controller Manufacturer's user manual.

Shipment Contents:

a 8X Raid Enclosure (Power Supplies and TP7s installed)

b (6) Screw, SEM, Phillips, 10-32 x 1.00", SS, 01-92220

c (4) Screw, Pkh, Phillips, 10-32 x 0.375Lng, SS, 01-92087

d (16) Washer, 10 Flat SS, 01-91872

e (8) Nut, Locking, 10-32, SS, 01-92151

f (4) Screw, 10-32 x 0.75 Pan Phillips, 01-92112

g (8) Screw, 10-32 x 0.50 Pan Phillips SS ISEM, 01-91622

h (8) Screw, 10-32 x 0.1875 Pan SS, 01-91827

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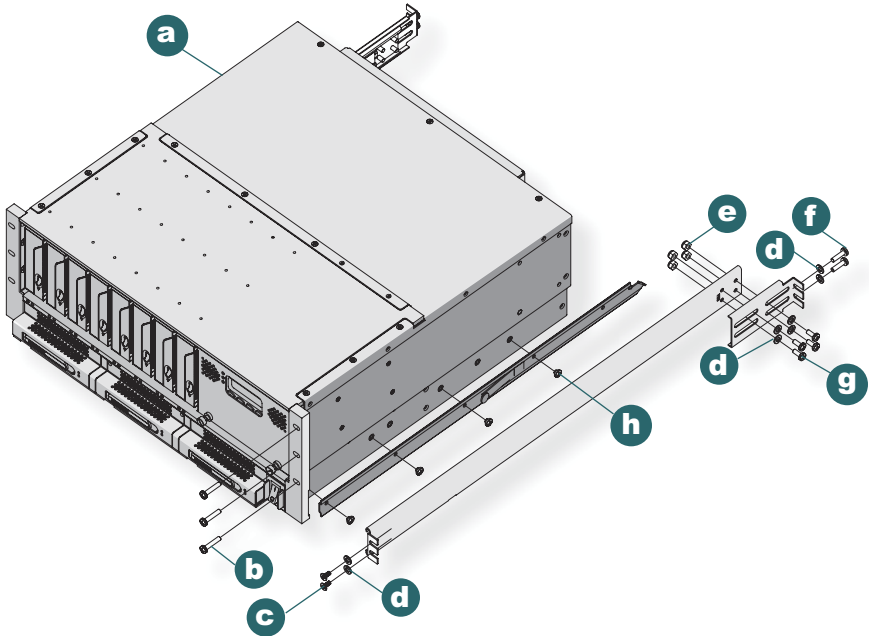
i Null Modem Cable (DB9F to DB9F)

j IEC Power Cable

k Rack Slides

l SCSI LVD/SE External Terminators (Quantities will vary depending on RAID Controller Model)

m Raid Controller Manual

n Warranty & Service Plan

o 8X User Manual

p Electronic Documentation

7
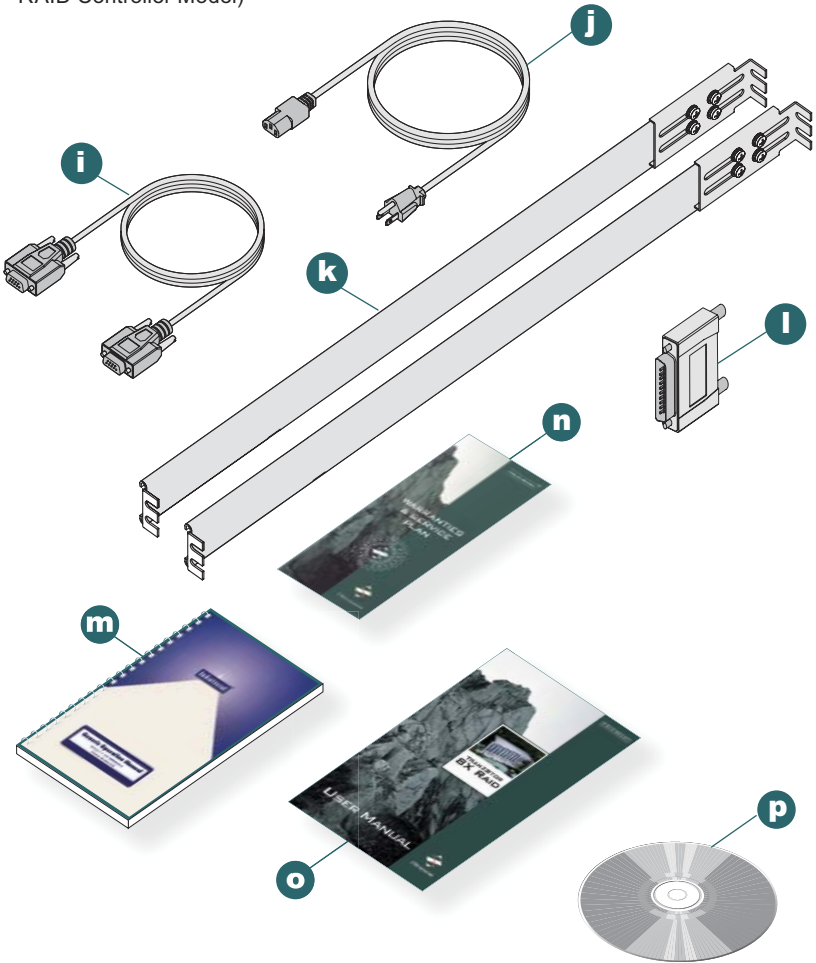
REQUIRED TOOLS

• Phillips Head Screwdriver

• 3/8" ratchet

PREPARATIONS

In preparation to install the 8X, take the following precautionary steps:
Turn off the electrical power to the host computer.

INSTALLATION PRECAUTIONS

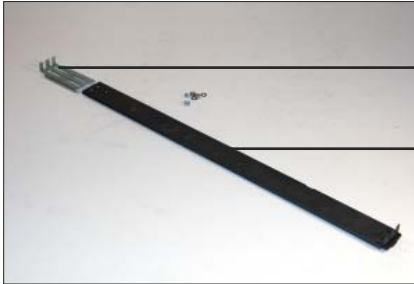When mounting the 8X, there is a maximum of .18" screw penetration on the underside and side screw hole locations.

NOTE: *For the fastest and easiest installation of the 8X, follow these steps in the sequence they are presented.*
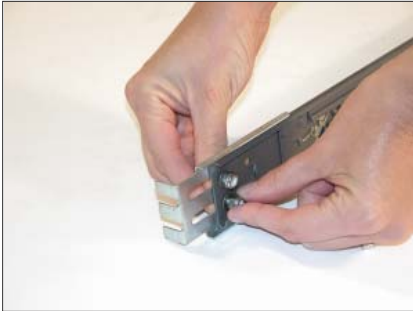
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STEP 1: RAIL INSTALLATION

The 8X RAID will arrive with the slides unattached.

Slide Extension Bracket

Outer Slide Member

To attach the slides to the extension brackets, use two panhead phillips screws (part# 01-91622), two flat washers (01-91872), and two lock washers (01-92151).

Insert the screws through the slots of the extension bracket and into the holes in the outer slide member. Secure loosely with flat and lock washers. Do not tighten. Repeat with the second slide assembly.

Positioning the slide assembly on the inside of the rack, secure the front of the slide assembly to the front of the rack using a flat Phillips head screw (part #01-92087) in the top position.
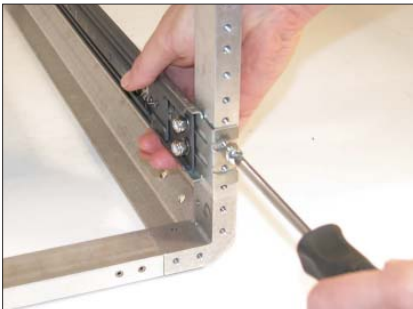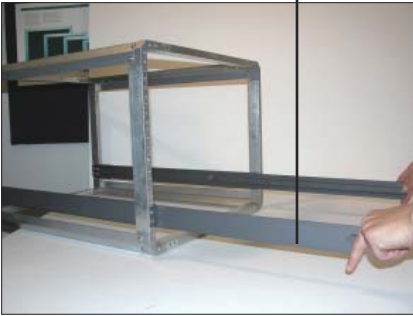
Secure the rear of the slide assembly to the rear of the rack using two panhead Phillips head screws (part #01-91622).

Tighten the slide assembly screws using a Phillips screwdriver and 3/8" ratchet. Repeat rail installation for other side.
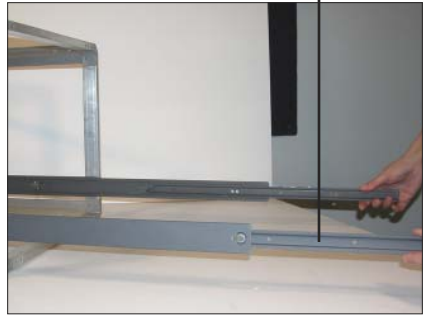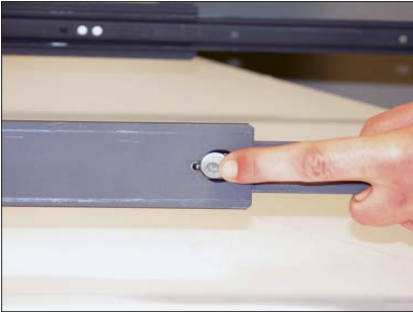
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Middle Slide Member

Inner Slide Member

Once both slide assemblies are installed in the rack, extend the middle members of the slide assemblies out of the rack.

Extend the inner members of the slide assemblies out as far as they will go.

Press the slide locking tab on the outer sides of the slides...

and remove the inner members of the slide assemblies.

Lay the inner members along either side of the 8X RAID, placing the pointed end of the members toward the rear of the unit. This is how the inner members will be attached to the 8X RAID.
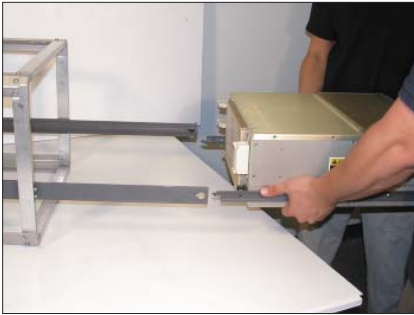

Attach the inner members to the sides of the 8X RAID using 10-32 x 3/16" panhead Phillips head screws (part# 01-91827).

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STEP 2: 8X RAID INSTALLATION

CAUTION: When attaching the inner members of the slide assemblies to the sides of the 8X RAID, ensure screw penetration does not exceed 3/16" length. Damage may result if screw length exceeds 3/16" length. Use 10-32 x 3/16" screws only (part# 01-91827).

Hold the 8X RAID up to the extended rails with the rear of the 8X RAID to the rear of the rack. Insert the inner member (attached to the 8X RAID) into the middle member of the slide.
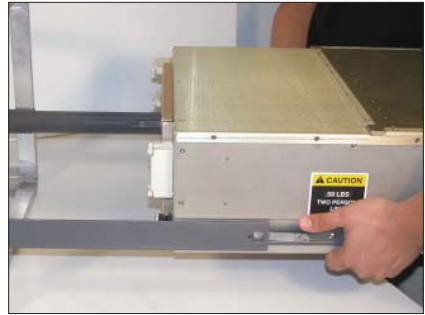
Slide the unit in until the slide action stops.

Simultaneously press the slide locking tab in and push the unit all the way back into the rack.

Secure the front of the 8X RAID to the rack with three 8-32 x .75" panhead Phillips screws on each side. See image above.

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STEP 3: CABLE CONNECTIONS

The picture below shows the rear of a TranzStor 8X RAID unit and the connection points for these cables. TranzStor 8X configurations may vary.

1. Terminate external SCSI connectors
2. Connect SCSI Adapter to Host Computer's SCSI adapter using a 68 pin external SCSI cable.
3. Connect Serial CTRL A to the Host Computer's COM 1 port using the modem cable.
4. Connect power cable.

Install LVD/SE Terminators

SCSI Adapter

Serial CTRL A   AC Power Plug

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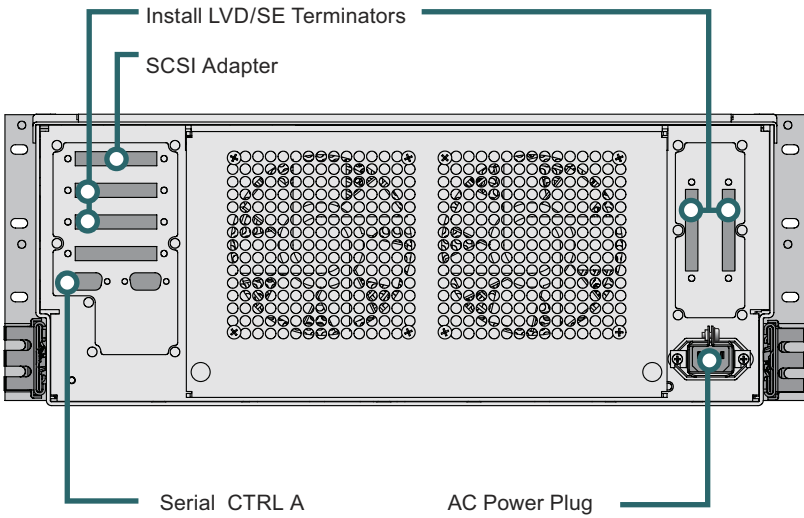
STEP 4: POWER UP TRANZSTOR 8X

Before powering the TranzStor 8X, make sure all of the connections are tightened securely at the rear of the unit.

Then press the power switch on the front of the 8X.

Power Switch, Front

After turning on the power switch, the controller will beep. Watch the amber activity lights. All of the drives' activity LEDs will illuminate briefly, and then extinguish.
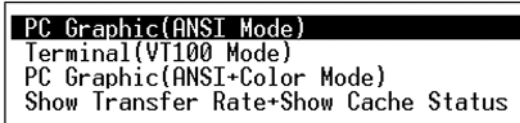
STEP 5: ESTABLISH SERIAL CONNECTION

From Accessories/Comunications/ select Hyperterminal. Create description, select COM Port and fill in Port Settings as follows:
• Bits per seconds: 38400
• Data bits: 8
• Parity: None
• Stop bits: 1
• Flow control: None

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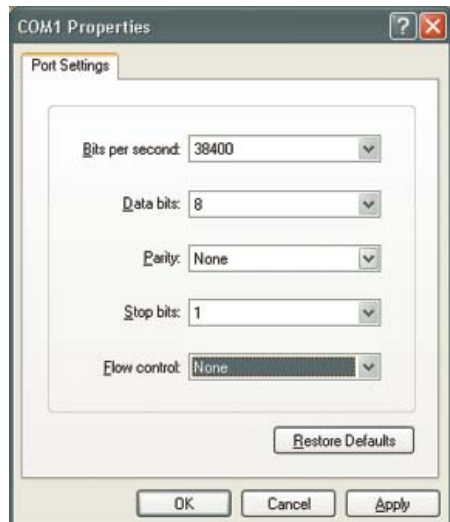
STEP 6: VERIFY CHANNEL SETTINGS

If you're not at the "Main Menu", select "PC Graphic (ANSI Mode)" and press "Enter". This will take you to the "Main Menu".

```
PC Graphic(ANSI Mode)
Terminal(VT100 Mode)
PC Graphic(ANSI+Color Mode)
Show Transfer Rate+Show Cache Status
```

Verify that your channel settings match the image below. If your channel settings do NOT match, you can not continue with the Quick Guide set-up. Please refer to the troubleshooting section of this manual.

```
──────── < Main Menu > ────────
 Quick installation
 view and edit Logical drives
 view and edit logical Volumes
 view and edit Host luns
 view and edit scsi Drives
 view and edit Scsi channels
```

Chl	Mode	PID	SID	DefSynClk	DefWid	S	Term	CurSynClk	CurWid
0	Drive	7	NA	80.0MHz	Wide	L	On	80.0MHz	Wide
1	Drive	7	NA	80.0MHz	Wide	L	On	80.0MHz	Wide
2	Host	0	NA	80.0MHz	Wide	L	Off	Async	Narrow
3	Host	0	NA	80.0MHz	Wide	L	Off	Async	Narrow

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STEP 7: BEGIN QUICK INSTALL WIZARD

Create logical drive.

```
┌─────────── < Main Menu > ───────────┐
│ Quick installation                   │
│ ┌─────────────────────────┐   s      │
│ v│ Create Logical Drive ?  │ es       │
│ v│                         │          │
│ v│      Yes       No       │          │
│ v└─────────────────────────┘          │
│ view and edit Configuration parameters│
│ view and edit Peripheral devices      │
│ system Functions                      │
│ view system Information               │
│ view and edit Event logs              │
└───────────────────────────────────────┘
```

Select top option. See controller user manual for other RAID options.

```
┌─────────── < Main Menu > ───────────┐      ┌──────────────┐
│ Quick installation                   │      │RAID 5 + Spare│
│ view and edit Logical drives         │      │RAID 5        │
│ view and edit logical Volumes        │      │RAID 3 + Spare│
│ view and edit Host luns              │      │RAID 3        │
│ view and edit scsi Drives            │      │RAID 1 + Spare│
│ view and edit Scsi channels          │      │RAID 1        │
│ view and edit Configuration parameters│     │RAID 0        │
│ view and edit Peripheral devices      │     │NRAID         │
│ system Functions                      │     └──────────────┘
│ view system Information               │
│ view and edit Event logs              │
└───────────────────────────────────────┘
```

Initialization will begin, and will continue for up to two hours, depending on the drive capacity (about 2 hours for a 146 GB drive).

```
┌─────────── < Main Menu > ───────────┐
│ Quick installation                   │
│ view and edit Logical drives         │
│ view and edit logical Volumes        │
│ view an ┌──── Initializing ──────────────────┐
│ view an │         Notification               │
│ view an ├────────────────────────────────────┤
│ view an │[2181] LG:0 Logical Drive NOTICE: Starting Initialization │
│ view an │                                    │
│ system  │                                    │
│ view sy └────────────────────────────────────┘
│ view and edit Event logs              │
└───────────────────────────────────────┘
```

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Once the initialization is complete, the progress counter will disappear.

LG	ID	LV	RAID	Size(MB)	Status	O	#LN	#SB	#FL	NAME
0			NONE							
1										
2	[2182] Initialization of Logical Drive 0 Completed									
3										
4			NONE							
5			NONE							
6			NONE							
7			NONE							

Press the "ESC" key.

Esc
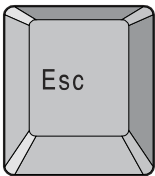
Select "System Functions,"
then "Reset the Controller,"
and finally "Yes" to reset.

```
──────── < Main Menu > ────────
Quick installation
view and edit Logical drives
view and edit logical Volumes
view and edit Host luns
view and edit scsi Drives
view and edit Scsi channels
view and edit Configuration parameters
view and edit Peripheral devices
system Functions
v
v  Mute beeper
   change Password
   Reset controller
S
C  Reset Controller ?

      Yes      No
```

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STEP 8: ADD NEW LOGICAL DRIVE

After the TranzStor 8X system reboots, rescan the SCSI bus on the host computer by right-clicking on the SCSI controller in the device manager.

NOTE: *The following screens are Win2K screens, and may appear differently with different operating systems.*
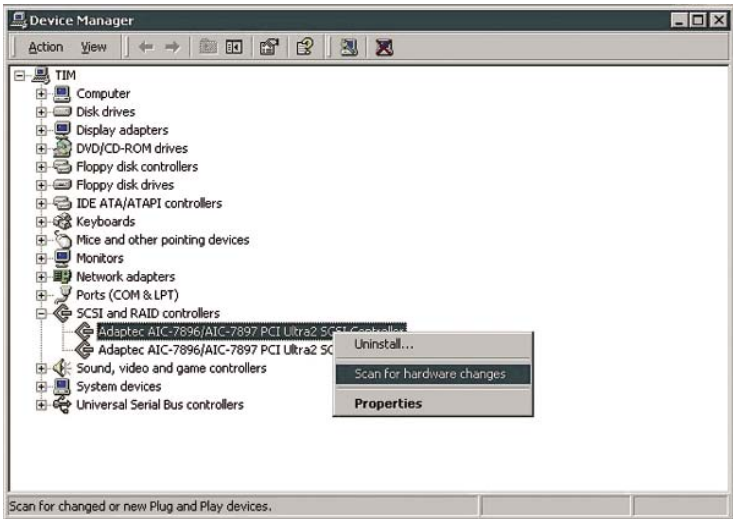
Go to Administrative Tools>Computer Management>Disk Management. Click on "Disk Management" to start up Write Signature and Upgrade Wizard. Follow the steps in the Wizard.


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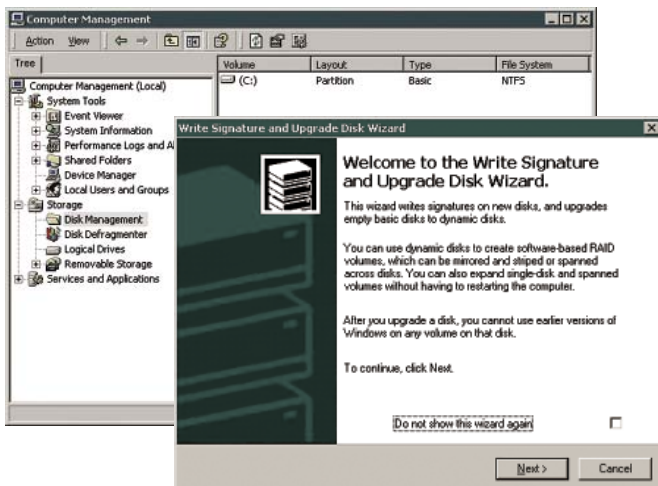
The host OS should find a new disk with unallocated space and start up the Create Volume Wizard automatically. If the Wizard doesn't start up automaically, right-click on unallocated disk and select "create volume".
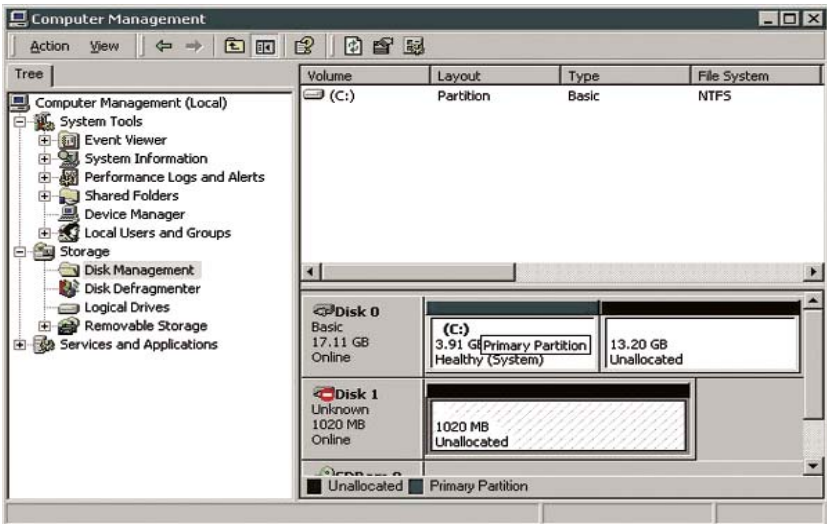

NOTE: If the Disk symbol is shown as "unallocated" (has a red negative symbol over the drive symbol), there is no signature written to the drive. To do so, right click on the disk, and write a signature for the drive in the window that appears. Click "OK". The red negative sign will be gone and the drive will be useable.

The wizard will take the user through the remaining options to create a logical volume, assign a new drive letter and format the partition with your file system of choice.
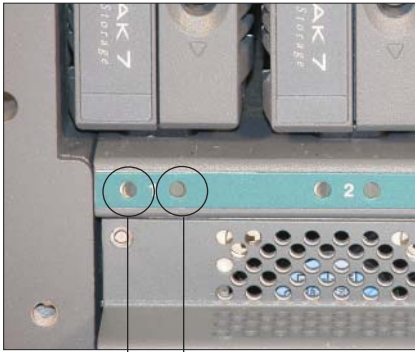

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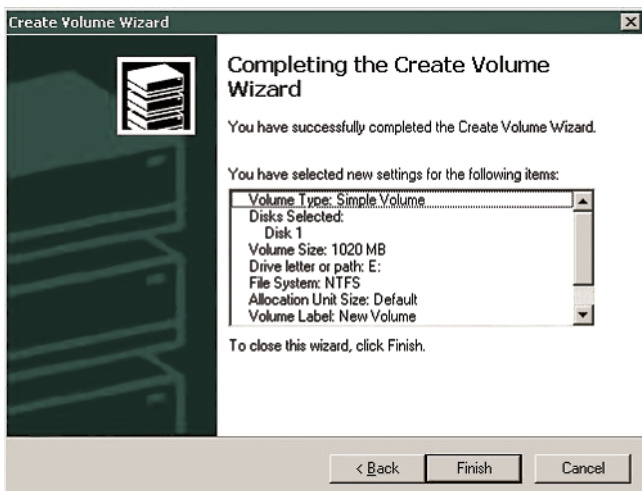
Once complete, the new drive can be found in the same file location as the first available drive under "My Computer".

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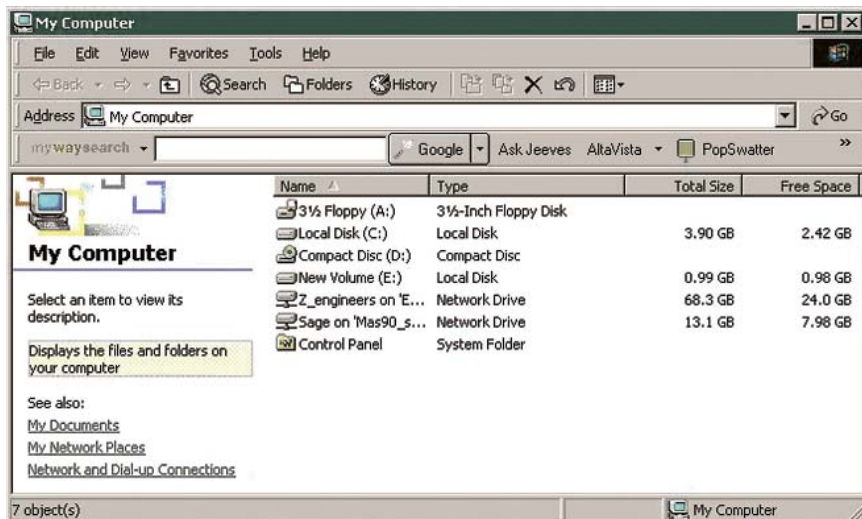
STATUS INDICATORS

The drives are numbered one through eight. Each drive has two dedicated status indicator LEDs just below the drive. The following indicators apply to the drives only:

Green= When the drive is plugged into the TranzStor 8X, the green light indicates the drive has power.
Yellow= The yellow light comes on when the drive is accessed by the controller, indicating activity on the drive.

Power Activity

System Power Indicator
Drive Status Indicator
Alert Indicator

The System Power Indicator= illuminates when power to the system is detected.
The Drive Status Indicator= illuminates when a drive is active.
The Alert Indicator= illuminates when the system detects an error condition. See the controller manufacturer's user manual to troubleshoot problems with the controller.

NOTE: For operation of the RAID Controller, refer to the Infortrend SR2500F User's Manual.

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TP7 DESCRIPTION

Red - SCSI Drive

Sliding Locking catch

Locking handle

High tensile extruded
aluminium alloy thermo-
conductive body

High tensile diecast alu-
minium alloy rear panel

High tensile diecast alu-
minium alloy front panel

Rear Connector

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INSERTING THE TP7

With the handle in the open position, hold the TranzPak 7 by the main body and insert it partially into the docking bay. (Be sure that it is sliding on the black guides).

Using your thumb push the TranzPak 7 gently into the bay until you can feel it touching off on the rear connector.

Check that the locking catch is aligned with the locking indent in the slide rail and press the handle towards body...

until it snaps the locking handle in place. Check that all TranzPak 7 disk modules are aligned across the face of the 8X.

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REMOVING THE TP7

Slide the locking catch to the right to allow locking handle to spring open.

Locking handle springs open.

Pull handle gently forward to eject the TranzPak 7 off of the rear connector.

Continue to gently pull handle to slide the TranzPak 7 forward. The TranzPak 7 should slide over the grounding contacts until it is half way out.

Take the TranzPak 7 by the main body and pull straight out.

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REMOVING THE DOOR ON THE CONTROLLER

To remove the controller door, turn the thumbscrews on the face of the door counterclockwise.

The door will come loose.

The door can be removed by lifting it down and off of the hinge.

⚠️ *NOTE: For information regarding removal of the RAID Controller, refer to the Infortrend SR2700F User's Manual.*

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REPLACING THE DOOR ON THE CONTROLLER

To install the controller door, seat the hinges up into the hinge slots at a 45 degree angle.

Rotate the bottom of the door down to align the thumbscrews with the screw holes.

Simultaneously press and turn the thumbscrews on the face of the door clockwise. Tighten the thumbscrews.

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MAINTAINING THE 8X

WARNING: Be sure to turn off the power before you perform any maintenance on the RAID.

CLEANING THE TRANZSTOR 8X

Unplug the 8X from the power outlet before cleaning.
To clean the surface of the 8X, lightly dampen a soft, clean cloth with water or mild deter-gent and wipe the surface of the 8X gently.

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REPLACING THE FAN ASSEMBLY

With your fingers, turn the two thumb-screws (locations shown above) counter clockwise until the screws loosen.

Rotate the fan assembly upward on the hinge and then down.

Lift the fan assembly away from the Tranz-Stor 8X chassis.

To install the new fan assembly, place the two hinges into the hinge slots (shown in the next photo) at a 45 degree angle.

The image above shows a hinge being inserted into the hinge slot.

Seat the assembly down and secure it in place by simultaneously pressing and turn-ing the thumbscrews clockwise. Tighten the thumbscrews.

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TROUBLESHOOTING

Configuring the Channels After Accidental Reset

If the controller is reset accidentally to factory default settings, follow these steps to recover.

NOTE: Optimal setup for the RAID controller is 0=Drive, 1=Drive, 2=Host, 3=Host. Only follow these steps if these parameters are not already setup.

1. Select "view and edit channels".
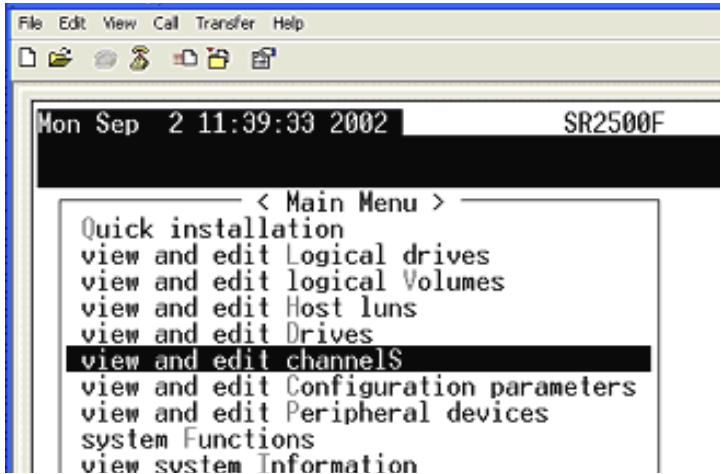
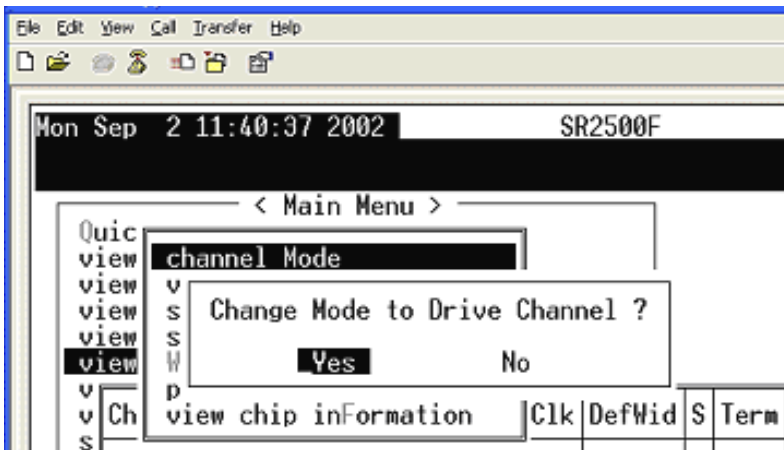2. Now select "Chl 0" and then "channel Mode", and then select "Yes".
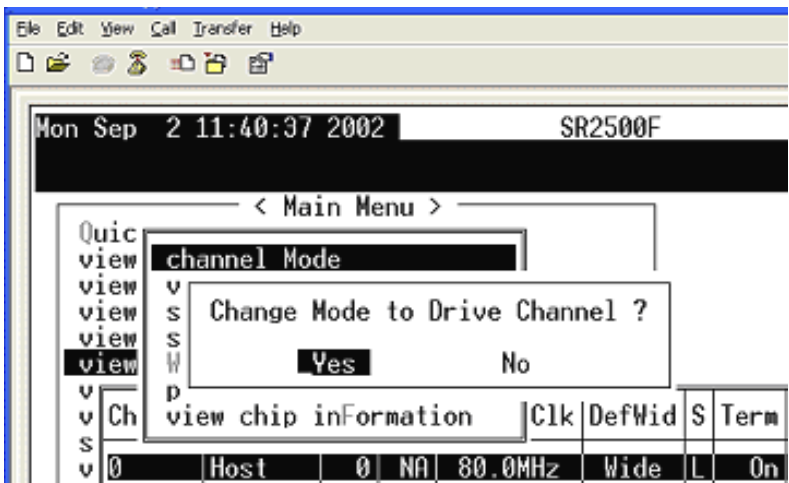
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3. At this point you will be asked if you want to reset the controller. Select "No".

4. Now select "Chl 1" and then "Channel Mode", and then "Yes".

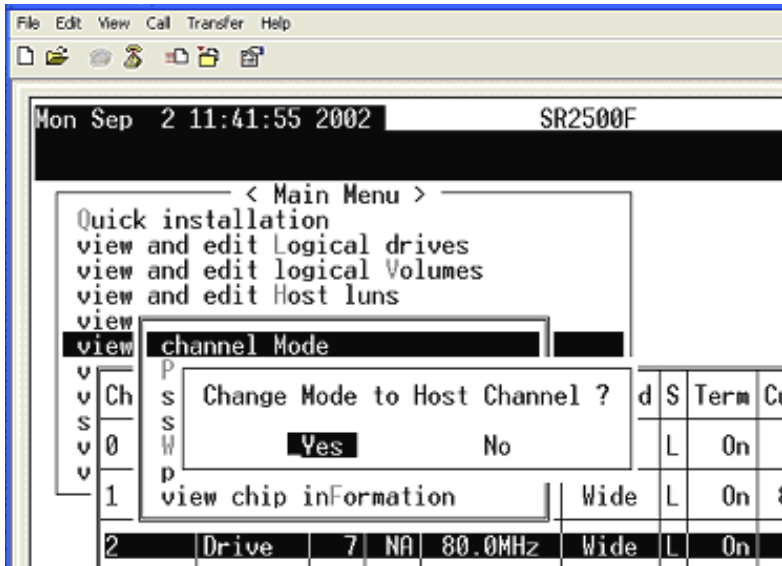5. At this point you will be asked if you want to reset the controller. Select "No".

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6. Now select "Chl 2" and then "Channel Mode", and then "Yes".

7. When asked to reset the controller select "No".

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8. Now select "Chl 2" and then "scsi Terminator", and then "Yes".
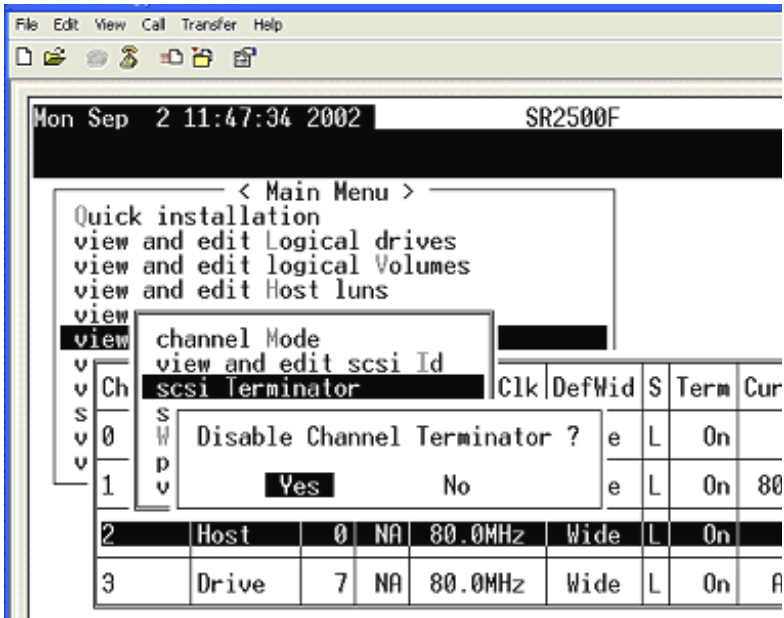
9. When asked to reset the controller select "No".
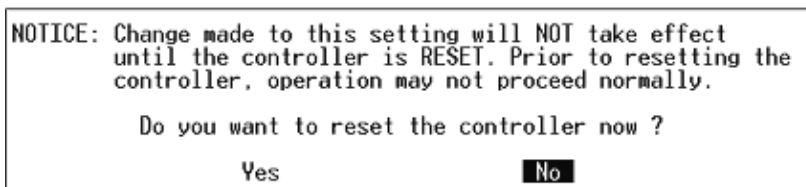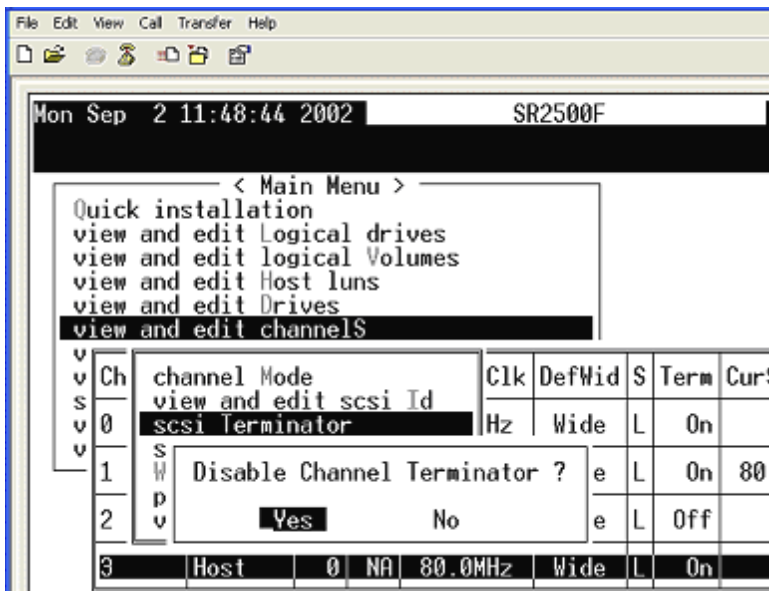

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10. Now select "Chl 3" and then "channel Mode", and finally "Yes".
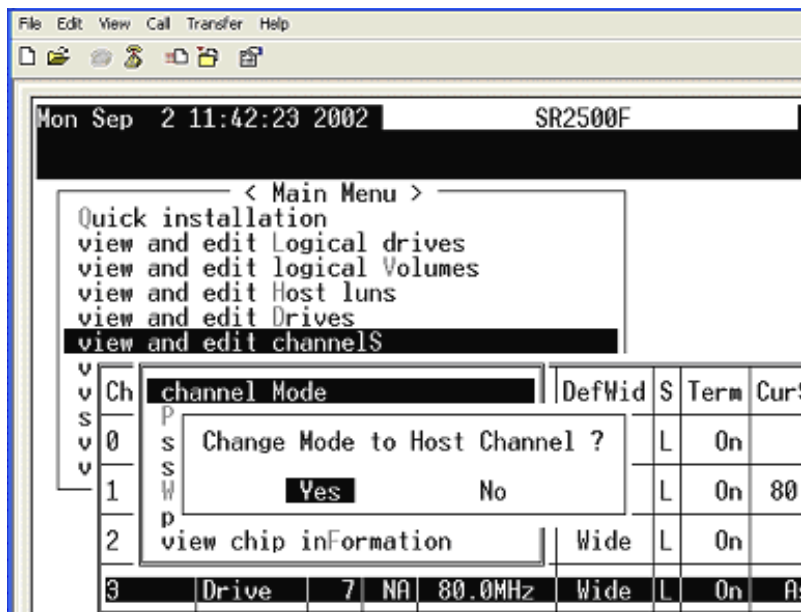
11. When asked to reset the controller select "No".

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12. Now select "Chl 3" and then "scsi Terminator" and then "Yes".

11. This time, when asked if you want to reset the controller, select "Yes".

Drive Failures

With a functioning drive, the Attention and Busy LEDs flash while the controller is booting (after the system is powered on). If no amber activity LED is flashing when the power is turned on, please begin the following troubleshooting procedure.

1. If the drive(s) fails during the initial setup of the RAID, turn off power to the RAID and reboot. Allow the system to come up again and verify that the drives show activity.

2. Ensure the drives are seated securely in the 8X. Remove the failed drive and re-install it to ensure a good connection.

3. Ensure that the power indicators on the front of the 8X are green for the drive(s) that is failing.

4. If the indicator shows a green light, ensure the drive terminations are secure at the rear of the 8X.

5. If Steps 1-4 do not restore activity to the drive, the "Auto Detect Drive Failure" function should be enabled. Follow these steps:

A. Configure the global parameters for the spare drive. To do so, select "view and edit Configuration parameters", and then "Drive-side Parameters".

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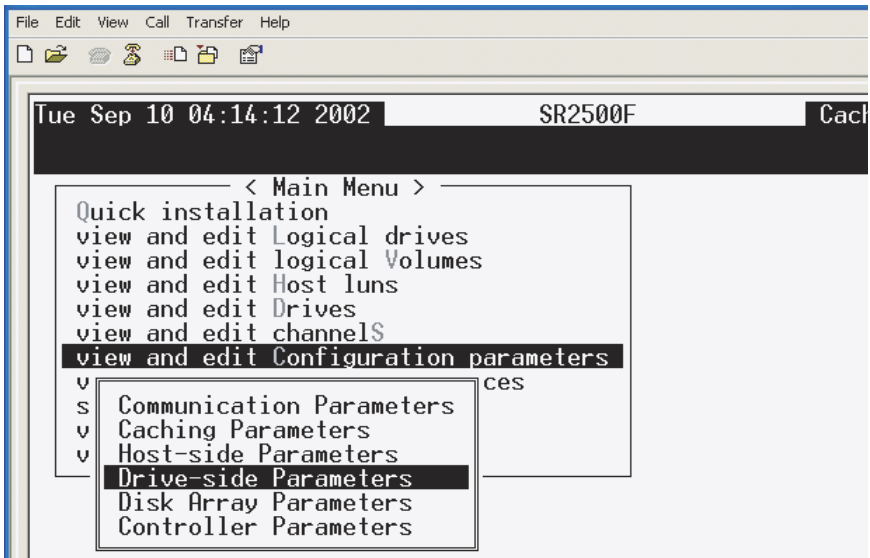
B. Now select "Auto-Assign Global Spare Drive". When asked "Enable Auto-Assign Global Spare?" select "Yes".
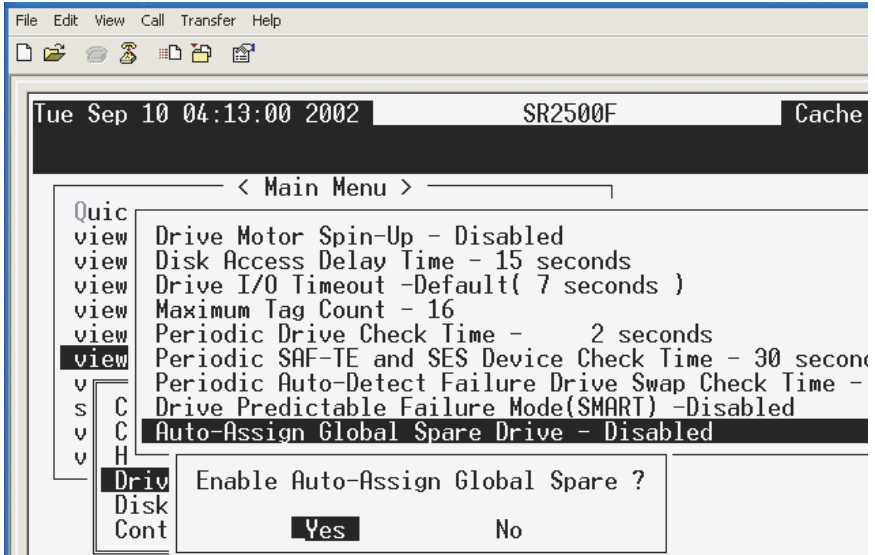
C. Finally, select "Drive Predictable Failure Mode(SMART)" and then "Detect Only". When asked "Set Drive SMART Action Mode?" select "Yes".

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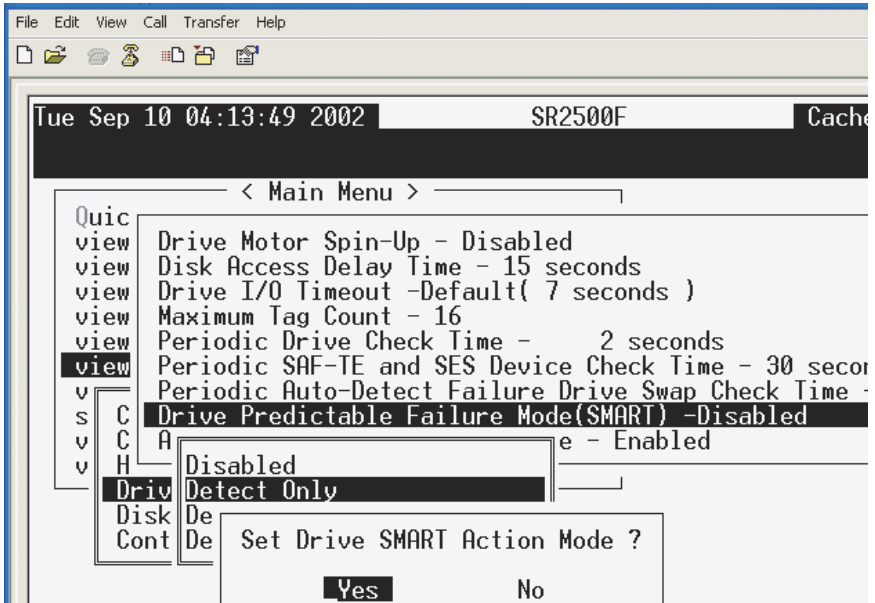
D. Now select "Periodic Auto-Detect Failure Drive Swap Check Time".
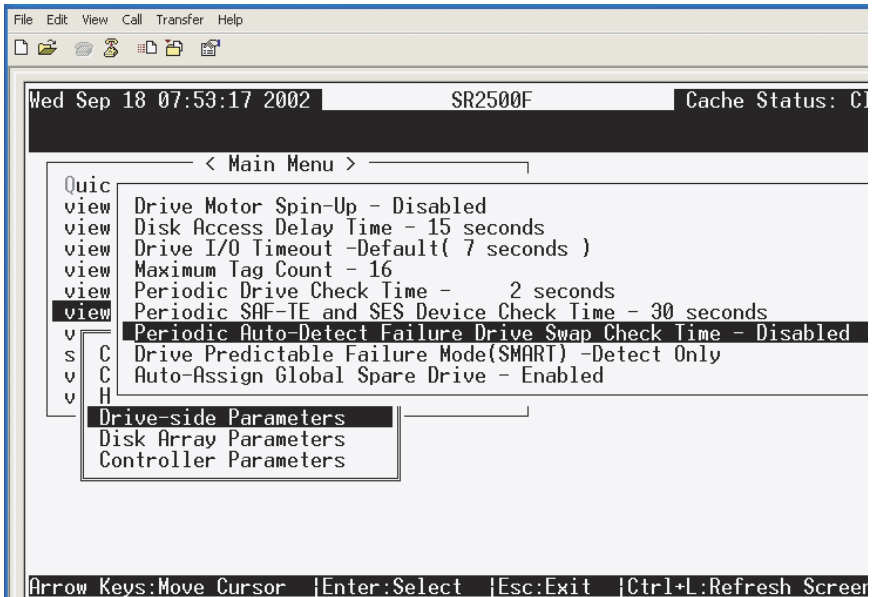
E. Select "5 seconds" from the drop-down menu.

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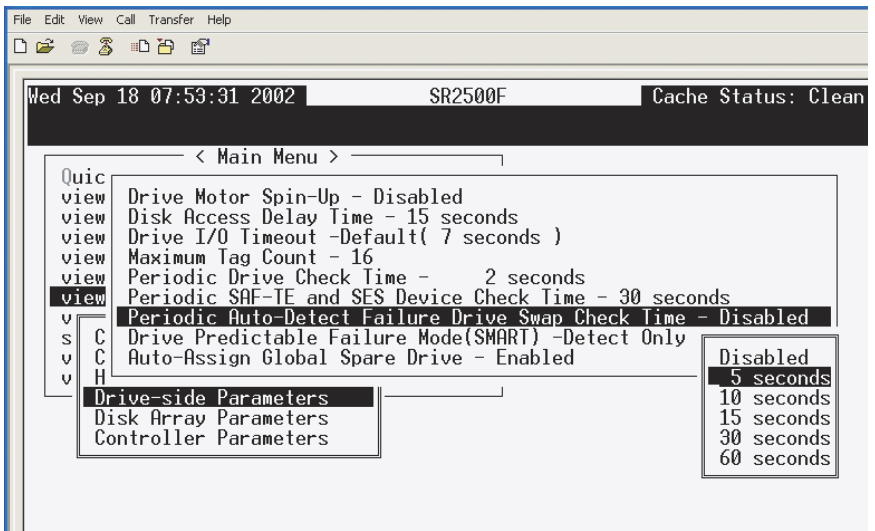
F. When asked "Set Periodic Auto-Detect Failure Drive Swap Check Time?", select "Yes".
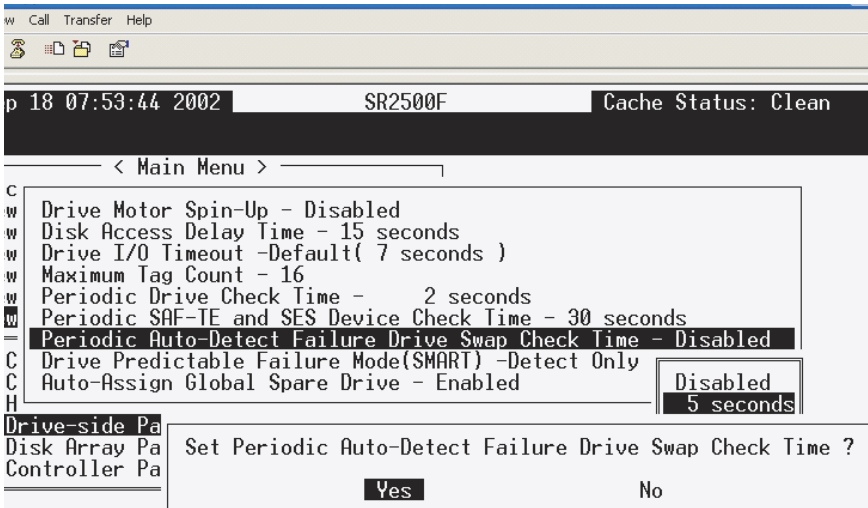
G. Press "Esc" once to return to the previous menu.

H. Now select "Controller Parameters" followed by "SDRAM ECC".
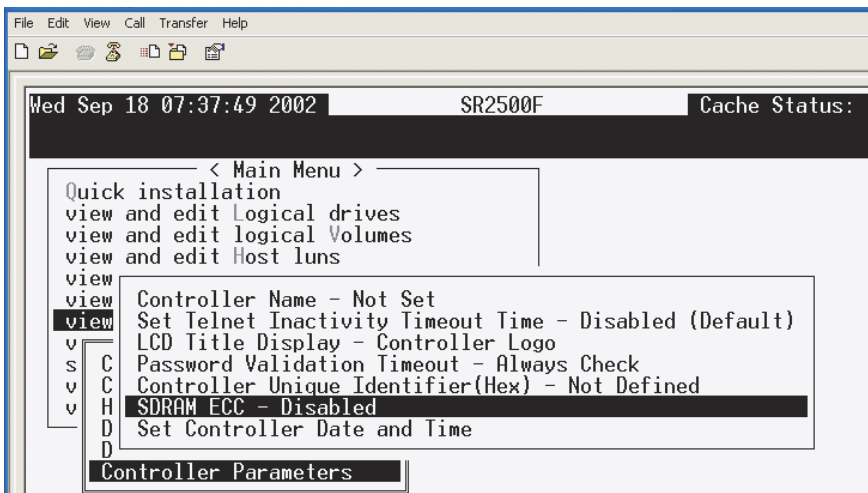
I. When asked "Enable SDRAM ECC Functionality?" select "Yes".
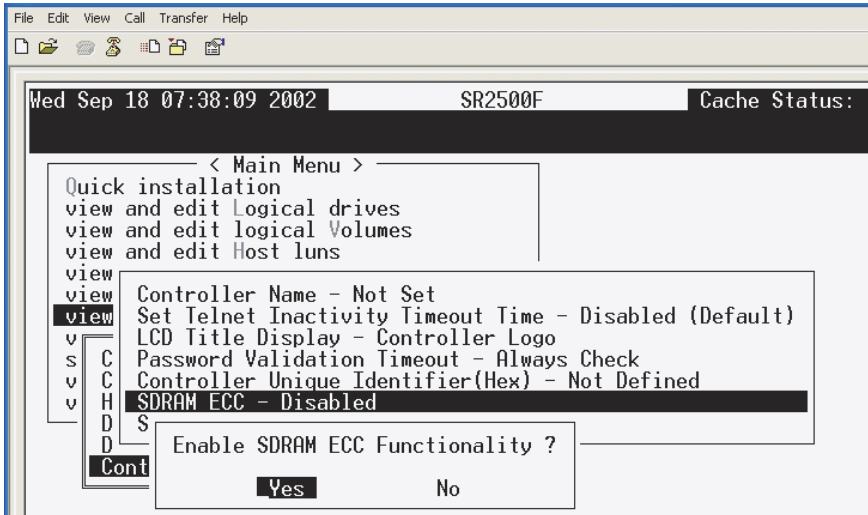
J. When asked "Do you want to reset the controller now?" select "Yes".
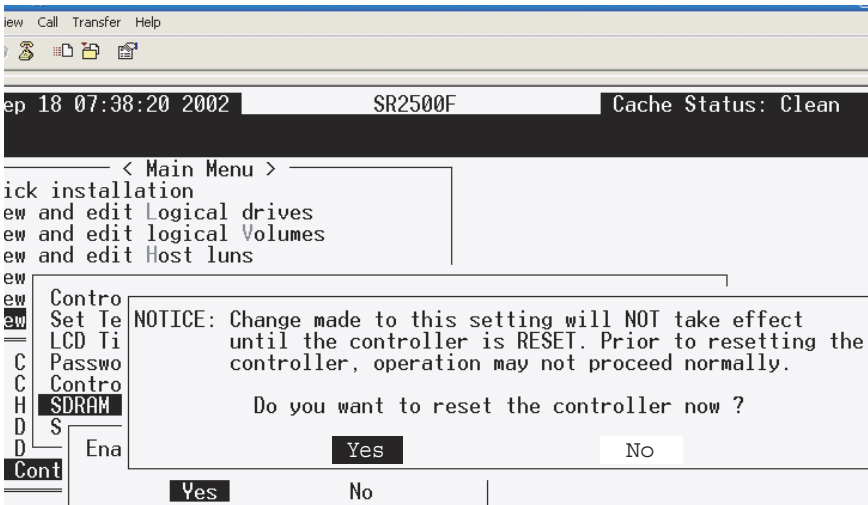
If the drive is still failing after attempting these troubleshooting steps, call the Z Microsystems' Customer Service Department for further assistance.

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MECHANICAL OUTLINE FOR 8X

WARNING: There is a maximum of .18" screw penetration on the
underside and side screw hole locations. Only use screws provided.
Use of longer screws may result in damage to internal components.

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MECHANICAL OUTLINE FOR 8X

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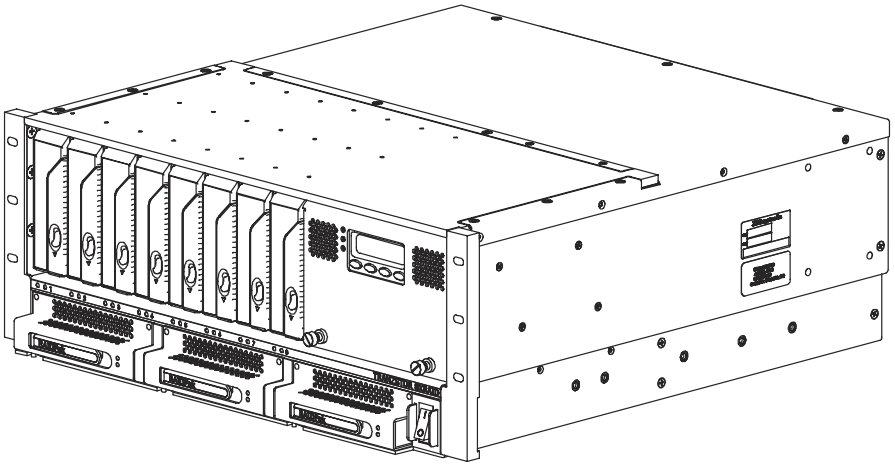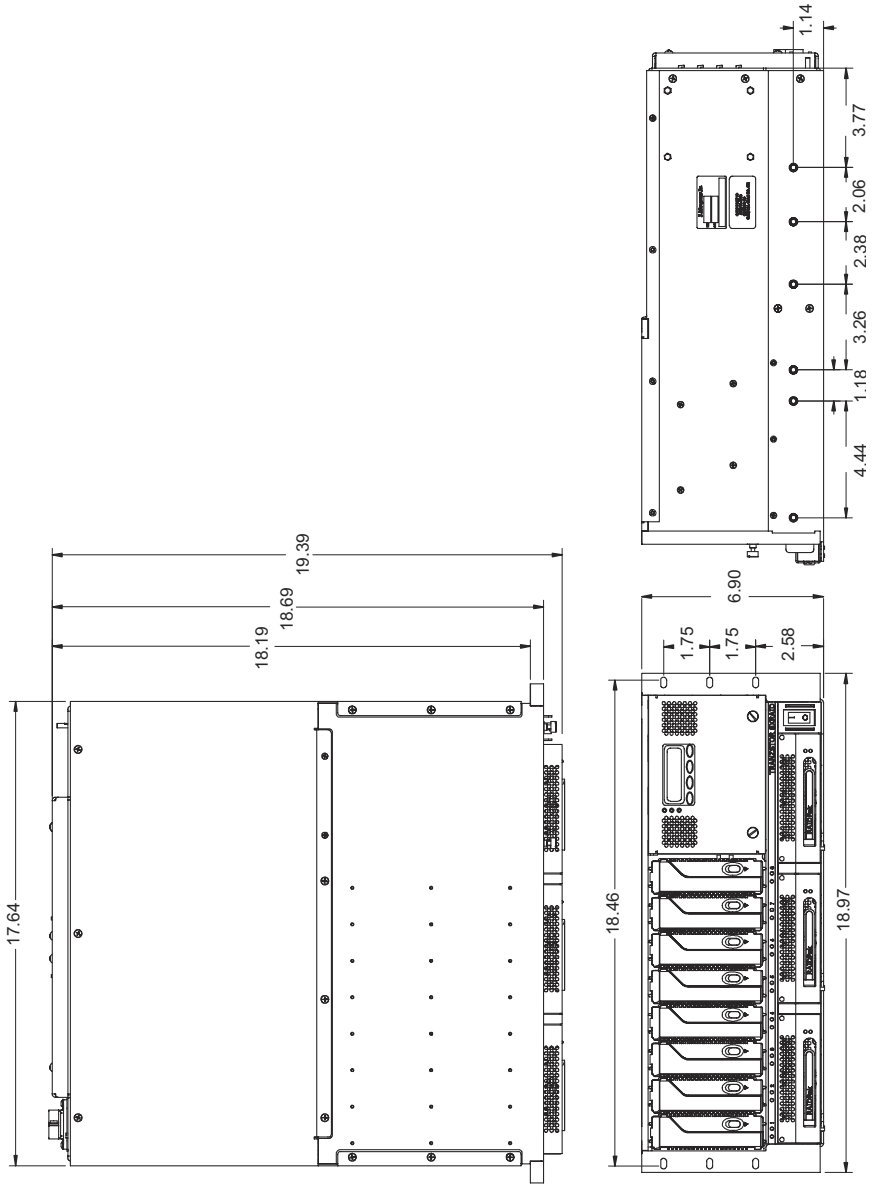
SPECIFICATIONS

General Display Specifications	
Enclosure	
Materials	Aluminium 5052 H32, 6061 T6, A380
System Capabilities	Eight Storage bays
Storage Capacity	Up to 3200 GB (each drive ranges from 73-400 GB)
Base Options	Split-SCSI Bus
Dimension (H x W x D)	6.9" H, 18.97" W, 19.39" D
Net Weight	51 lbs. (with eight TP7 drives @ 2.5 lbs. each)
Power Requirements	90-264 VAC, 1.90A, 47-63 Hz
Environmental*	
Operating Temp	+5º to + 45º C
Non Operating Temp	-20º to + 60º C
Operating Humidity	5% to 95% Non condensing
Non Op. Altitude	-1,300 to 40,000 ft.
Operating Altitude	-1,300 to 10,000 ft.
Fungus	Non Nutrients / contaminants
Rliability	
MTTR	<20 minutes
Regulatory	
Safety	UL 1950 (used as a guideline)
EMI	FCC Class A
Connectors	Micro-D 68 pin SCSI Bus
Quality/Workmanship	IPC / ISO 9001:2000 and applicable section of MIL-HDBK-454

* Units are designed and built to meet the following environmental levels.

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REPLACING PARTS

If the Z Microsystems Technical Support Engineer determines that the product needs to be replaced, a Customer Service Representative will issue a Return Material Authorization (RMA) number.

An RMA number is required to return a product to Z Microsystems, regardless of the reason for the return.

The Z Microsystems Customer Service Department/RMA Request Form will ask the customer to provide the following information:

• model number of the defective product

• serial number of the defective product

• problem with the defective product

• return "ship to" address

• the name and address of the company department to which we will send the invoice (if product is out of warranty or is different from the "ship to" address.

• phone number and e-mail address of contact

• purchase order number

You will be given an RMA number and will be asked to send the product to:
Z Microsystems
ATTN.: (RMA#) It is very important to reference the RMA#
5945 Pacific Center Dr., Suite 505
San Diego, CA 92121

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WARRANTIES

Standard Warranty

-no charge-
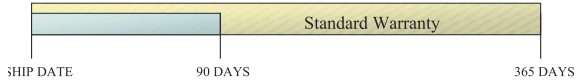
Z Microsystems' one-year Standard Warranty includes a 90-day AirSpare Service Plan. This means that if any standard Z Microsystems' product fails within the first 90 days after shipping, the customer will receive a new replacement.

All non-standard* products are covered for one year under Z Microsystems' Standard Warranty that includes free parts and labor. However, the 90-day AirSpare Plan can be purchased as an additional option for non-standard products.

1-90 days - Z AirSpare Service

• 91-365 days - Free Parts and Labor

• 9-5 EST telephone technical assistance

• Online technical help

• Email product updates

*a non-standard product is a prototype or a product specifically designed or engineered per a customer's specification

To return a defective product a customer can call the Z Microsystems Customer Service Department at 1-858-657-1000, ext. 232, or fill out the RMA Request Form on our website. Please see the section in this manual titled, "Replacements" for details on how to replace a part.

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Z Extended Warranty

| Standard Warranty | 1 yr Extended | 2 yr Extended |
| SHIP DATE | 365 DAYS | 2nd Year | 3rd Year |

Z Microsystems' Extended Warranty Plan provides one and two year extended warranty options under which a Standard Warranty is extended from the end of the first year of the Standard Warranty period.

The One-Year Extended Warranty period will begin on the day the Standard Warranty expires and the Two-Year Extended Warranty begins when the One-Year Extended Warranty expires.

1-90 days - Z AirSpare Service

91-365 days - Free Parts and Labor

• 9-5 EST telephone technical assistance

• Online technical help

• Email product updates

2nd year - Free Parts and Labor

• 9-5 EST telephone technical assistance

• Online technical help

• Email product updates

3rd year - Free Parts and Labor

• 9-5 EST telephone technical assistance

• Online technical help

• Email product updates

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Z Preferred Warranty

Airspare	Preferred Service	2nd yr Preferred Service
SHIP DATE 90 DAYS	365 DAYS	2nd YEAR

Z Microsystems provides a Preferred Service Plan under which Z Microsystems will repair or replace and return a defective product to the customer within one week of Z Microsystems' receipt of the defective product.
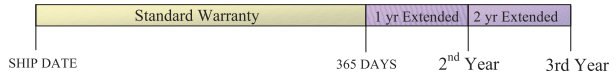
1-90 days - Z AirSpare Service

91-365 days - Free Parts and Labor

- 9-5 EST telephone technical assistance

- Online technical help

- Email product updates

- Guaranteed One Week Turnaround

2nd year - Free Parts and Labor

- 9-5 EST telephone technical assistance

- Online technical help

- Email product updates

- Guaranteed One Week Turnaround

3rd year - Free Parts and Labor

- 9-5 EST telephone technical assistance

- Online technical help

- Email product updates

- Guaranteed One Week Turnaround

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Z Airspare Warranty

Z Microsystems provides an AirSpare Service Plan that will replace a defective product, within the first year of the warranty period, with a new product the following business day.* The AirSpare Service Plan does not cover special order items. A product may be deemed a special order item at the discretion of the Customer Service Department. Z Microsystems, at its discretion, may offer the AirSpare Service Plan to a customer who purchases a special order item at the one-year rate.

*Z Microsystems cannot guarantee next day delivery if contacted after 2:00 PM Pacific Time. Calls on Fridays or before holidays will receive a new product the following business day.

1st Year - 24 hour replacement
- 9-5 EST telephone technical assistance
- Online technical help
- Email product updates

2nd Year - 24 hour replacement
- 9-5 EST telephone technical assistance
- Online technical help
- email product updates

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Z On-Site Service

Z Microsystems also provides on site service and consultation to customers who require Z Microsystems' technical expertise.

Disclaimer

Z Microsystems warrants that every product is free from defects in materials, workman-ship and conforms to Z Microsystems' stringent specifications.

Z Microsystems calculates the expiration of the warranty period from the date the product is shipped. This means that the ship date on your invoice is your product ship date unless Z Microsystems informs you otherwise. During the warranty period, Z Microsystems will provide warranty service under the type of warranty purchased for the product.

Replacement parts will assume the remaining warranty of the parts they replace. If a product does not function as warranted during the warranty period, Z Microsystems will repair or replace the part (with a product that is as a minimum functionally equivalent) without charge.

If the product is transferred to another user, the warranty service is available to that user for the remainder of the warranty period.
Z Microsystems' warranties are voided if the covered product is damaged due to an ac-cident or abuse. The warranty is voided if the product is shipped in sufficient packaging.

Under no circumstances is Z Microsystems liable for any of the following:
       1. Third-party claims against you for losses or damages,

       2. Loss of, or damage to, your records or data, or

       3. Economic consequential damages (including lost profits or savings) or
         incidental damages, even if Z Microsystems is informed of their possibility.

Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights that vary from jurisdiction to jurisdiction.

Warranty does not take effect until full payment is received by Z Microsystems.

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CUSTOMER SUPPORT

NOTE: For image problems, run
AUTO SETUP again before
consulting this section. In most
cases, AUTO SETUP can fix
the problems. See the Auto
Setup section for details.

NOTE: If possible, stay by the computer.
The Z Microsystems Technical
Support Representative may
wish to go through the problem
over the telephone.

If you are unable to correct the problem yourself, contact:

Z Microsystems at:
(858) 657-1000
Fax: (858) 657-1001
Website: www.zmicro.com
Before calling, please have available as much of the following information as possible:

1. Model and serial number from the label on the monitor

NOTE: More help, late-breaking
news and details of the
latest accessories for these
products may be found on the
worldwide web at:
http://www.zmicro.com

2. Purchase P.O.

3. Description of problem

4. Computer type and model

5. System configuration (hardware fitted, etc.)

6. System BIOS version number

7. Operating System and version number

8. Display driver version number

9. Video Adapter Type

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CUSTOMER FEEDBACK

We value feedback on our products, their performance, problems found, and welcome all constructive suggestions. Please send such productive information in writing to:
Customer Service
Z Microsystems
5945 Pacific Center Blvd., Suite 505
San Diego, CA 92121
or www.zmicro.com

Z Microsystems, Inc.
5945 Pacific Center Blvd., Suite 505
San Diego, CA 92121
Phone: (858) 657-1000
Fax: (858) 657-1001
Website: www.zmicro.com
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