

Pre-Release Notice for

DG/UX R4.20 ix86, In-Service Diagnostics

Contains:

DG/UX R4.20 ix86 In-Service Diagnostics Rev 8.0

085-001564-00

July, 1997

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## 1.0 INTRODUCTION

This pre-release notice supports the release of the DG/UX R4.20 ix86 In-Service Diagnostic Media which contains:

This product consists of the following parts:

Part Description	Part Number
-----	-----
1. DG/UX R4.20 ix86 In-Service Diagnostics Pre-Release Notice	085-001564-00
2. DG/UX R4.20 ix86 In-Service Diagnostics Pre-Release Media	See section 4 of this release notice

## 2.0 PRODUCT DESCRIPTION

The following is a brief description of each of the major components released with the DG/UX R4.20 ix86 In-Service Diagnostics.

In-Service Diagnostics (DG/UX R4.20 ix86 ISD)

A diagnostic support system with a set of diagnostics and tools for maintaining the intel based product family. This diagnostic package contains the ISD test manager, the ISD User Interface, Core Component Test, Memory Test, Async Test, Sync Test, Disk Test, Network Test, File System Test, Tape Test, Unix Domain Socket Test, Network Socket(TCP/IP)Test, and JukeBox Test

## 3.0 DOCUMENTATION

### 3.1 Manuals:

This section contains information on the titles and changes in the DG/UX R4.20 ix86 In-Service Diagnostics release documentation set.

Please refer to Key Chart below for symbols used to show manuals that are new, revised, or have had no changes since the last master release of these diagnostics.

Status	Part Number	Name
-	014-002512-01	Using AViiON Diagnostics and the AV/Alert Diagnostic Support System

Status Key: A = "Added", R = "Revised", - = "No Change"

## 3.2 Documentation Changes:

None

## 4.0 SOFTWARE

## 4.1 Media:

The Diagnostic Media Package contains the DG/UX R4.20 ix86 In-Service Diagnostics Rev 8.00

Media parts designated below is for the cdrom media package.

Status Key: A = "Added", R = "Revised", - = "No Change"

Status	Part Number	Description
-----	-----	-----
A	068-003246-00	CD-ROM

## 4.2 Organization/Files:

CD Medium:

The following list outlines the files contained on the media along with a brief description of what is in each file.

File	Contents
----	-----
0	DGISD table of contents
1	DGISD root directory files
2	DGISD user directory files

## 5.0 IN-SERVICE DIAGNOSTICS (ISD)

### 5.1 ENVIRONMENT

The DG/UX R4.20 ix86 In-Service Diagnostics should be used on all Data General Intel based AViiON servers, that run DG/UX R4.20.

To run ISD the system must be powered up with DG/UX running at init 1 or higher. ISD will normally be loaded on system disks. New releases of ISD are located via sysadm. The distribution of ISD for the AV 20000 system will be CD only .

This release requires that at least DG/UX R4.20 to be installed on the machine.

This release is not for use with DG/UX R4.10, R4.11, or R4.12.

### 5.2 PREREQUISITES:

#### Hardware Requirements:

Intel x86 based system only, that run DG/UX R4.20

### 5.3 USER REQUIREMENTS:

The ISD User Interface Program(UI) can be brought up in either Motif or ASCII mode. If the non-X windows ASCII mode is used, it is recommended that the user be adept at using the sysadm feature of DG/UX or the Interface Description Interpreter(IDI), this will be helpful in traversing through the layers of the ISD interface. See the IDI man pages for navigation tips.

## 5.4 ENHANCEMENTS AND CHANGES

### 5.4.1 Enhancements

None.

### 5.4.2 Changes

None.

## 5.5 NOTES AND WARNINGS

## 5.5.1 Notes:

PM : Performance Monitor.

A word of caution about setting PM resource usage at 100%. ISD will be unrestrained in its use of system resources at 100% which can produce effects that seem to be problems but are not. The following example shows how setting the CPU parameters to 100% could lead to seemingly problematic system behavior.

Suppose a user sets up an ISD test run of the Tape Test and Memory Test with the PM parameters CPU, IO, and MEM set to 100%. On a lightly loaded system, the response time to the user will appear to be normal. A sar -u 5 5 will show the system running mostly at 100%cpu utilization but the user response will be fine. If the same thing is done for a system where there are added file systems, lots of extra disks, complex network, etc., the system response will be very unacceptable. The tests may start taking soft errors as they are timing out before reporting in with the test manager. This is "normal" or expected behavior as too much is asked of the system - its overloaded. You will have to find the correct balance for your system which is resource and configuration dependent. With the performance parameters, you can use ISD to stress the system stand-alone or use it as a background low profile system exerciser.

o Device Recognition

Typically the ISD Test Manager daemon is run when the system is (re)started at system boot time or at an explicit init level change. If a device is brought on line after boot, the Test Manager will not have seen the device. The sizer will have to be re-run by selecting the resize ISD option from the ISD user interface (or stop and restart the tm in prescribed way)

o Network Testing:

LAN Testing on networks that have Virtual TermServer Controllers attached locally may cause Operating System outages or test failures. The network can be run in configurations that do not have VTC's on the same local network.

LAN errors are to be expected on busy networks and/or on controllers which use unreliable protocols.

o OpStar Jukeboxes:

OpStar Jukeboxes will be unavailable if their JB scheduler is running.

Consult OpStar documentation to shutdown OpStar.

For example, the commands:

```
cd /  
sh /etc/rc2id/s211.mmmmd stop
```

That will stop all the schedules and disable the Opstar file systems.

If the Test Manager (tm) is already running, it will have to be restarted so that the jukeboxes appear available for testing.

5.5.2 Warnings:

SysAdm install problem prevents any software installation via tape drive. To install ISD, use the CD-Rom drive or install ISD via network. For further details see NSQA-000039606.

Some errors may occur when ISD tries to do a MI call, in addition some inventory status may not be complete or accurate. All these issues do not threat regular ISD functionality and will be addressed in the upcoming ISD.

Dynamic update status may cause the GUI interface to core. ISD recommends to use the Ascii version of ISD while this problem is being resolved.

o Network Test:

Consider a network which has several nodes on it. There may be cases where DG/UX with ISD is running on one node and Windows NT is running on another node. If they are on the same subnet, current rev ISD Network Test may get errors of type fault code 08-14-xxxx.

xxxx represents the error number returned by the system when the error occurred.

These will be addressed with later revisions of ISD.

## 5.6 CD-ROM PRE-INSTALLATION / INSTALLATION INSTRUCTIONS

This section provides the steps required to register, create and mount your CD-ROM disk for installing ISD.

- a. Log in to your DG/UX system as root.
- b. Insert the ISD Diagnostics media in your CD-ROM drive.
- c. Register the CD-ROM device.
  - # admpdisk -o list
  - # admpdisk -o register 'device address '

\*Notes:

- 1. change device path to appropriate designation.
  - 2. make sure to use single quotes when specifying the CD-ROM device.
- d. Make a directory (/+ release, not the generic directory: /cdrom as} stated in sysadm) to mount the CD-ROM on.
    - # mkdir /+release
  - e. Mount the CD-ROM disk.
    - # mount -o ro /dev/dsk/+release /+release

The following is a brief set of instructions for installing the In-Service Diagnostics from CD-ROM. In this section the In-Service Diagnostics create a Logical Disk Partition and register your CD-ROM drive. While creating a Logical Disk Partition isn't required, it's good System Administration practice to create one when installing new software packages. Detailed installation instructions are included in the Customer Documentation: "Using AViION Diagnostics and the AV/Alert Support System".

- a. Log in to your DG/UX system as root.
- b. Insert the ISD Diagnostics media in your CD-ROM drive.
- c. Should your system have In-Service Diagnostics running, it must be stopped prior to this installation. Stop the currently running In-Service Diagnostics
  - # /usr/sbin/init.d/rc.dgisd stop



5.6.1 Installation

- a. Install the new release of ISD under sysadm.  
# sysadm installpackage
- b. Release Medium [/dev/rmt/0]

For CD-ROM the device will be /+release/isd\_8.0

In-Service Diagnostics 8.0\_x86 of xx/xx/xx from Data General Corporation  
Package Name(s): [all] newline. (xx/xx/xx indicates when the release  
was created)

You selected the following packages:

dgisd

Is this correct ? [yes]

(NOTE: Use the default values for the remainder of the prompted  
questions)

(NOTE: The following will be displayed on the screen during the  
installation process.

Loading Package dgisd .....

Package load finished .....

Package setup for dgisd is complete .....

List file names while loading ? [no] newline

Ok to perform operation ? [yes] newline

(NOTE: At this point in time the ISD installation is complete and  
the user can quit out of sysadm)

- c. For additional information, please refer to the detailed  
instructions which are included in the "Using AViION  
Diagnostics and the AV/Alert Support" manual.

## 5.6 CD-ROM PRE-INSTALLATION / INSTALLATION INSTRUCTIONS (continued)

### CD-ROM Removal

This section provides the steps required to unmount, and deregister your CD-ROM disk after installing ISD.

You will need to deregister the CD-ROM after Rebooting DGUX to be able to remove the CD-ROM media from the CD-ROM drive.

- a. Shut down and reboot your DG/UX system.
- b. Log in to your DG/UX system as root.
- c. # umount /+release
- d. Deregister the CD-ROM device.  
# admpdisk -o list  
# admpdisk -o deregister 'device address'

#### \*Notes:

1. change device path to appropriate designation.
2. make sure to use single quotes when specifying the CD-ROM device.

## 5.7 INSTALLATION OF ISD INTO A CLUSTERED SYSTEM

These instructions will guide you through a normal cluster installation.

Step 1. Ensure that `isd_tm` is not running on any node in the cluster.

```
ps -ef | grep tm , and do a dg_kill -9 pid, where pid was
the process id of isd_tm returned from the ps
```

Step 2. Pick a node from which to perform the install.

This would be the one with the drive which the install media will be loaded. These instructions will make ISD runnable from any node in the cluster (provided it is running the same revision of DG/UX as the node you are installing from).

Step 3. Follow the pre-installation instructions for the appropriate ISD media (See sections 5.6.1 or 5.7.1).

After selecting to install the ISD package, you will get a Pre-Release Area: [PRIMARY] prompt. Select the area which corresponds to the /usr partition in use by your node (similar to R411MU01).

At the prompt for "which client to set up", choose ALL

If there is no partition currently set up for DGISD, then you will be prompted to allow creation of a partition. At the modify this info prompt, you should NOT use the default for the physical disk to be used. Instead, use a physical disk which is on the shared bus.

Use the default values for completing the remainder of the prompt questions during the installation.

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Step 4. ISD is now installed on the node you ran install from. To complete the process, and make ISD runnable from other nodes, type

```
admfilesystem -o unmount /usr/opt/dgisd
admfilesystem -o mount /usr/opt/dgisd
```

## 6.0 USING IN-SERVICE DIAGNOSTICS (ISD)

### 6.1 Starting the test manager

You must start the Test Manager daemon before you can start the ISD User interface. To start the Test Manager daemon, enter

```
# isd_tm
```

It is only necessary to restart the test manager daemon upon installation or in the event that something abnormal occurs on the system.

To start the User Interface (gui version) you must set the DISPLAY environment variable to the X11 display you wish to use. (NOTE: X11 must be installed on the system in order to use it.)

```
# DISPLAY=(my workstation):0.0
# export DISPLAY
```

You can now start the GUI user interface.

```
# isd_ui &
```

or

You can now start the ASCII user interface.

```
# isd_uia
```

Refer to the manual for more specific information.

### 6.2 ISD Suggested Test Setups

Customer environment, new machine, no applications loaded:

Run ISD with the standard default test selections listed by ISD and select the disk and tape tests.

Boost all three performance parameters to 100%.

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Customer Environment, system under production load:

Run ISD with the standard default test selections listed by ISD.

Run with performance parameters at the default of 50% or less depending on system load. Monitor closely with sar -u 5 5.

Set failure mode to terminate testing on the first failure.

Test, development or Manufacturing Environment:

Where test is desired on a configuration without applications running.

Run ISD with \* for the test selections i.e. select all.

Add file system to make a total of 10 provided you have at least 5 disks otherwise run with the default file systems. The number can vary depending on the number of disks and the disk load you want to impose. You could have a 20 disk Clariion setup as a volume or 20 which will vary the IO load markedly.

Prompt the disk tests for read/write mode.

Set failures to failure mode of no termination.

### 6.3 ISD Functionality

#### Test Selection

To select, deselect, and control tests, use the Current Tests menu.

#### Logs

To view, search, and delete ISD logfiles, use the Logs menu.

#### Leaving the User Interface

To leave the user interface, select the Files menu and then select the Exit option. If you want to terminate the tm daemon, select Files and Kill TM before selecting Exit.

For more detailed information please refer to the following manpages entitled isd\_intro, isd\_tm and isd\_ui.

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## 6.4 Network Test Configuration

The purpose of this section is to describe some things to do prior to running the ISD Network Test. The following list summarizes the test requirements:

At minimum a two controller network is established for sending and receiving test packets. For testing purposes, let's define the minimum network as the controller cables being connected to a hub. See Figure A. below.

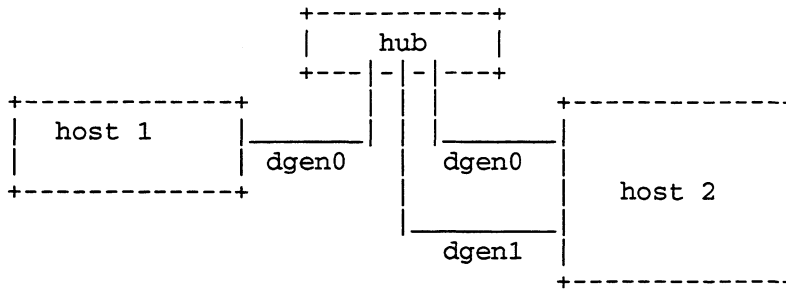


Figure A.

The Operating System is at init level 3 or 4.

The test can be run on one or all of the controllers.

### Operating System Configuration Requirements

During OS installation or kernel build, an option is provided for configuring devices. When configuring the devices, the OS will assign conical names to the controllers. One way to determine the network names assigned to the controllers is to list the /dev/net directory (ls -l /dev/net).

Additional setup procedures for networks are described in customer doc 093-701051 (Managing TCP/IP on the DG/UX System). The basic requirements are that each device be given a host name (e.g. host1, host2, host2-alt, ...) and IP address (e.g. 28.222.3.2). Once the host name and IP address are assigned, a network interface must be added. These operations can be done through the sysadm interface.

#### Add Hosts

Networking-> TCP/IP-> Databases-> Hosts-> Add

#### Add a Standard Interface

Networking-> TCP/IP-> Interfaces-> Add

Note: IP addresses are regulated. Care should be taken when assigning addresses to devices that are directly or indirectly connected to external routers.

- end of release notice -



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