User's Guide

Duralink Server Manager

adaptec®

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691 South Milpitas Boulevard
Milpitas, CA 95035

Printed in Singapore
STOCK NO.: 511824-00, Rev. A KM 1/98

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Server Manager

User's Guide

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Getting Started

The Duralink™ Server Manager is a Java-based enhancement to the Duralink Port Aggregation program, providing easy-to-use monitoring and status control of network ports and interface cards (NICs). This program uses a web browser running over HP OpenView®as its interface to enable simple point-and-click navigation, for a real-time display of system operations and diagnostics. If the server has more than six Adaptec NICs installed, Duralink Server Manager can only display the first six on the Status Graphing screen.

System Requirements

- Windows NT 4.0 or greater.
- An installed version of HP OpenView 5.01 for Windows NT® with an installed version of SNMP agent (refer to OpenView manual for system requirements etc.).
- A color display and video adapter capable of 256 or more colors.
- A Web Server running on the OpenView Management Console. (Microsoft® Peer Web Service or Internet Information Service, or Netscape Enterprise Server)
- A Web Browser (preferably Internet Explorer 3.02 or Netscape Navigator 3.02, Internet Explorer 4.0 and Netscape Communicator 4.x are not currently supported).

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Installation & Configuration

This section covers procedures required to install and configure the Duralink Server Manager to operate from HP OpenView. The following steps must be performed to ensure correct installation.

- Installing the Server Manager.
- Configuring the Web Server.
- Configuring the Web Browser.
- Setting up the SNMP Server.
- Setting up OpenView Remote Consoles.

Note: It is assumed that HP OpenView will be installed prior to the procedures in this chapter.

Installing the Server Manager

Before installing or uninstalling the Duralink Server Manager, first stop all processes that may cause unnecessary CPU delays or hinder the installation. If you had previously installed the Duralink Server Manage, the *Adaptec Discovery* daemon and the *SnmpServer* are the only Server Manager background processes. To stop these processes, use the ovstop updateDb and the ovstop SnmpServer commands.

1. Insert the Adaptec Web Management diskette into the floppy drive.
2. Click on the **Start** bar and click **Run**.
3. Type a:\setup to run the setup disk for the *Server Manager.*
4. Follow the instruction provided in the setup routine.

Note: Setup will install the Adaptec Web Component in the same directory that OpenView was installed in. Do not change this target directory. It is usually <drive>:\OpenView. This path (drive and directory name) will be referred to as $OV in the subsequent text.

5. If the Network Node Manager (NNM) is running, exit from the application.
6. After setup is complete, ensure that the *ovwdb* daemon is running, then run the command: ovw -fields.

   This command adds the *isAdaptecDevice* field into the OpenView database.

   Next, register the applications with the OpenView Process Management Daemon by running the following commands (these only need to be run when the Server Manager is first installed):

   ```
   ovaddobj  $OV\lrf\AdptDiscovery.lrf
   ovaddobj  $OV\lrf\SnmpServer.lrf
   ovstart  updateDb
   ovstart  SnmpServer
   ```

7 If you choose to stop NNM services and then start them (via OpenView's application menu), the ovstart commands covered in step 6 are not required.

The following components are installed:

- **Adaptec Discovery**— This must reside in the $OV\bin directory. This application is automatically launched by OpenView, searches the OpenView database for Adaptec devices, and sets the database Object Properties accordingly.
- **SNMP Server**— Application that provides the interface between the Java Applets(running on the browser) and the OpenView API. It must run on the OpenView Management Console.
- **Duralink Console**— Application that places the Duralink icon and symbol on submaps depending upon the detection of the isAdaptecDevice field in the OV database.
- **Menu Registration files**— The following registration files are installed in the $OV\lrf directory.
  - **AdptDiscovery.frf**: Local Registration File required to start the application that searches the database for Adaptec Devices. Must reside in the $OV\lrf directory.
  - **AdptField.lrf**: The field registration file used by OpenView to define the field *isAdaptecDevice*, indicating that a server has responded to the Adaptec OID and is manageable by DSM. This file must reside in the *$OV\fields\C* directory.
  - **MIB definition file (*duralink.mib*)**: This file is installed in the *$OV\AdaptecWeb* directory.
  - **Trap configuration file (*DTrap.conf*)**: Refer to *Configuring OpenView to Receive Duralink Traps* on page 2-9 of this manual for information on traps.
  - **SnmpServer.lrf**: Local Registration File required to start the application that provides the interface between the Java Applets and the OV SNMP API. This must reside in the directory $OV\lrf directory.
  - **Duralink.srf**: Symbol Registration File that defines the icon used for launching the Web Browser to manage Duralink Consoles. Must reside in the directory $OV\symbols\C.

  - **DuralinkConsole.arf**: Application Registration File that informs the OpenView process which application to launch when the Duralink Console icon is selected. This file must reside in the directory $OV\registration\C.
  - **AdptMgmtPage**: Application Registration File that provides another mechanism to launch the web browser. The menu item will be enabled whenever a device that has the isAdaptecDevice field set is selected. This file must reside in the directory $OV\registration\C.

- **Java Applets (applets, web pages, and images)**— These components are installed on the OpenView Management Console. They are downloaded by the web browser and will run on that machine.
- **Hostname Server**— Application that runs on remote Open View consoles. This application will retrieve the hostname that is selected by the local OpenView map. It is not necessary to install this component on the Management Console. It is done for convenience so that Remote Consoles can copy this file via a remote networked connection.

Configuring the Server to Send Traps

NT Server Configuration

1. From the **Control Panel**, select the **Services** icon.
2. From the **Services** list box, find the **SNMP** and **SNMP Trap Service** entries. The SNMP services must be started and set to *Automatic*. If they have not been started, click on each entry and select set them to *Automatic*. If the two services are not present, you must install them, refer to *Loading Services* on page 2-5.

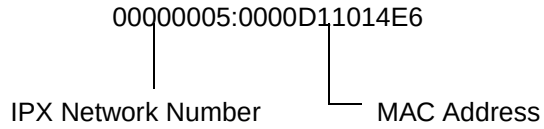
Loading Services

Follow these procedures if the SNMP Services entries are not present in the Services list box, as described above.

1. From the **Control Panel**, select the **Network** icon.
2. Click on the **Services** tab.
3. Click the **Add Service** button, and then click **Have Disk**.
4. Insert the *Windows NT CD* into the CD ROM drive and click **OK**.
5. From the **Network Services** dialog, select **SNMP Service** and then click **Properties**.
6. Type your community name in the **Select Traps** dialog box (default is *Public*).
7. To set a Trap Destination click **Add**, then type the IP address of the HP OpenView console in the dialog box. Click **OK**.
8. Restart the server to initialize changes.

NetWare Server Configuration

1. From the Server Console type: load edit.
2. From the NetWare text editor utility, press **INS** to browse directories.
3. Highlight *volume.sys*, and press **Enter**.
4. Select the *etc* directory and press **Enter**.
5. Select *TRAPTARG.CFG* and press **Enter**. Then, press **Enter** again.
6. If you are using an IPX-only address, enter the IPX number and MAC address of your server. For example, the numbers would be inserted as follows:



7. If you are using an IP Address type the IP Address of your OpenView console under *Protocol UDP*.

8. Save the above changes by pressing **ESC**. Press **ESC** again to exit the editor.
9. At the command prompt, type down, to down the server.
10. Type exit to return to the DOS prompt. Then, type server to restart the server.

Configuring the Web Server

To begin Web Server configuration you must stop and restart the Web Server. Do this by following the procedures described below for your web browser.

Note: The installation process will automatically update the registry if the Microsoft Web Servers are found.

Microsoft Web Server

1. Select the **Internet Service Manager** from the *Start/Programs/Microsoft Peer Web* service or *Internet Information Service*.
2. Single click on **WWW Service** .
3. Click on the **Stop** button, then on the **Start** button.

If Duralink Server Manager was installed Prior to Installing the Microsoft Web Server:

1. Select the **Internet Service Manager** from the *Start/Programs/Microsoft Peer Web* service or *Internet Information Service*.
2. Double-click on **WWW Service** .
3. Select the **Directories** tab. Click the **Add** button.
4. Enter the directory path name (*$OV\AdaptecWeb*) in the directory field.
5. Type /AdaptecWeb in the virtual directory alias field.
6. Click the **Execute** field in the access box so that both **Read** and **Execute** are checked.

Netscape Enterprise Server

1. Log in through the administrator's web site.
2. Select the name of the Web Server (next to the **On/Off** button).
3. Select **View Server Settings** from the left-hand menu.
4. Check the list to see that *AdaptecWeb* is not already configured.
5. Select **Additional Document Directories** from the Content Setting panel.
6. Enter $OV/AdaptecWeb in the *Map to Directory* field. Note that $OV is the path to the directory where OpenView is installed - usually it is *c:\OpenView*.
7. Enter /AdaptecWeb in the *URL* field. Click **OK**.
8. Click **Save** and **Apply** to save the server settings.

Configuring the Web Browser

If you have not already done so, install a Web Browser on your OV Management Server machine. We recommend using Microsoft Internet Explorer 3.02 or Netscape Navigator 3.02.

If you use a proxy server to access the Internet, you will need to configure your browser to bypass the proxy server for the host that is running the OV Management Console.

Microsoft Internet Explorer

1. Select **View->Options** from the toolbar. A pop-up window appears.
2. Click the **Connection** tab.
3. In the Exceptions box, enter the hostname (including any DNS suffix) in the entry box.

Note: If the domain where this host resides is already present in the Exeptions box, no additional changes are required.

4. Select **OK** and then **Exit**.

Netscape Navigator

1. Select **Options->Network Preferences** from the toolbar. A pop-up window will come up.
2. Select the Proxies tab by enabling the **Manual Proxy Configuration** radio button.
3. Click **View**.
4. Enter your hostname in the box labeled **No Proxy for**.

SNMP Server Startup

This application is started by the OpenView Process Management Daemon. Typically, there is no need to manually start the SNMP server. However, in the unlikely event that the server is not running, you can perform the following steps:

1. On the Open View Management console, open an MS-Dos window.
2. Run "SnmpServer" to start the server.

OpenView Remote Console Setup

Note: If there are no OpenView Remote Consoles in your environment, the following steps are not necessary.

1. Open an MS-Dos window, change to the directory where the Hostname Server is installed ($OV\AdaptecWeb\Remote Server).
2. Run "HostNameServer" to start the server.

Configuring OpenView to Receive Duralink Traps

1. Change directory to $OV\AdaptecWeb.
2. Run the following command:

   ```
   xnmevents -replace DTrap.conf
   ```

   The default action that is defined in this file will provide a popup window whenever a Duralink trap is sent by the managed node to the OpenView console. You can modify this actions from the Options\Event Configuration menu on the OpenView tool bar.

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Running Duralink Server Software

This chapter describes how to load and operate the Duralink Server Software from within the OpenView Console.

Duralink Server Software provides access to activities and setup parameters for all installed Adaptec NICs through a Web browser. Activities and system status are viewed in real time through Java applets on the html-based screens.

Note: Consult the HP OpenView documentation when encountering problems with the OpenView console or when using any of the OpenView tools (such as ovw, ovaddobj, ovstart, etc).

Loading the Program

1 Load the OpenView Network Node Manager by clicking on the Network Node Manager icon from the **Programs** menu.

The Openview Network Node Manager is loaded, showing all connections to the server. Refer to Figure 3-1.

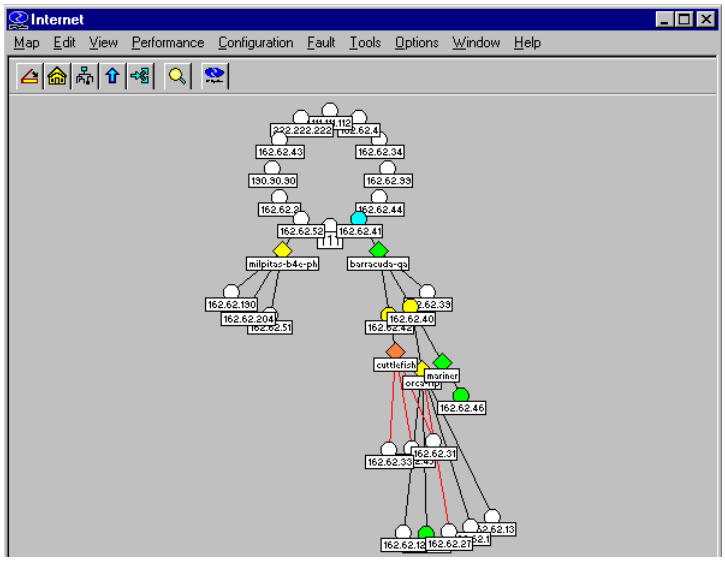


Figure 3-1. OpenView Network Node Manager

Enabling Adaptec NICs

1 From the **Edit** menu, select **Find** then **Object By Attribute**.

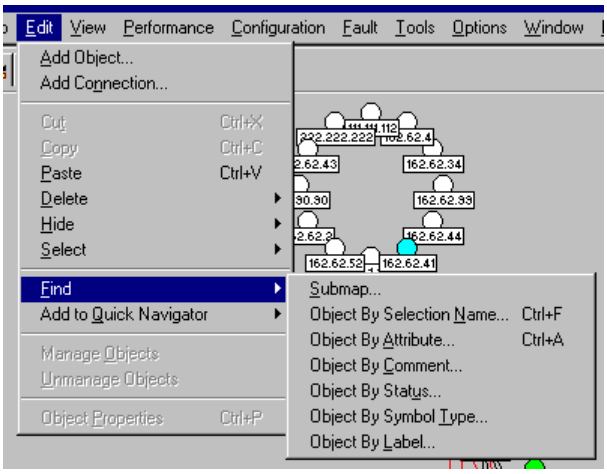
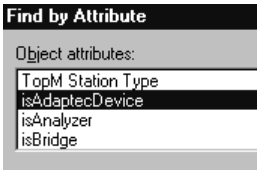


Figure 3-2. Selecting an Object by Attribute

2 Scroll down the Object Attributes list box, highlight **isAdaptecDevice** then click **Apply**.



3 A list of devices containing Adaptec NICs are displayed in the *Located and Highlighted* list box at the bottom portion of the screen. Highlight the server you wish to view and click **Open**. It is important to note that only one server can be selected and viewed at a time.

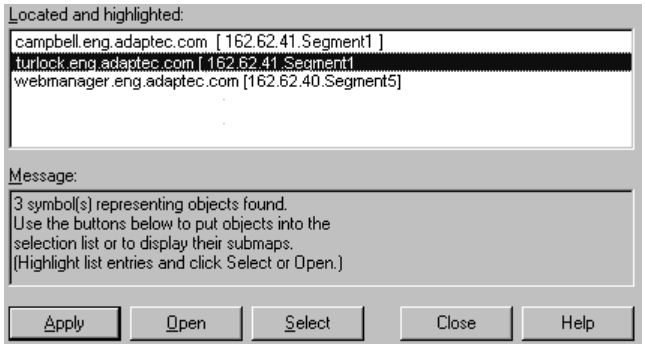


Figure 3-3. Selecting a Device with Adaptec NICs Installed

A map showing the selected device and its connect location is displayed.

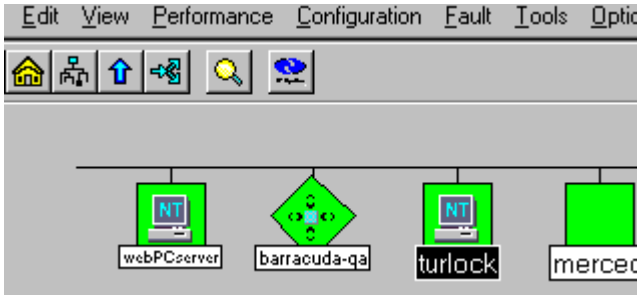


Figure 3-4. Segment Map

4 Double-click on the server you wish to view. The map will expand to display the Duralink Console icon for the selected server.

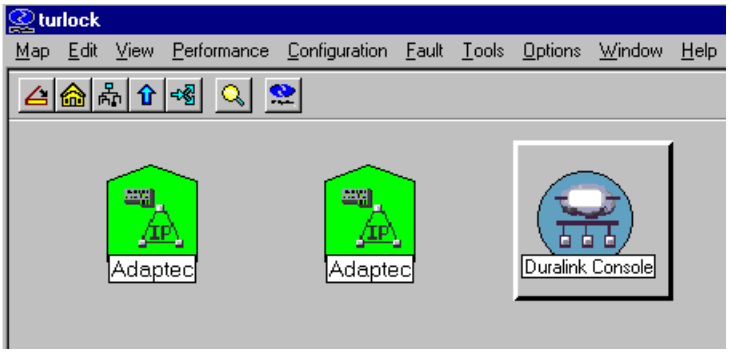


Figure 3-5. Selected Server to View

Note: If the error message **failed: OvwInitSession. Permission Denied** appears in the applet browser window when launching the Duralink Server manager, it indicates the SnmpServer was not started properly. Ensure that the *$OV\conf\ovw.auth* file contains the following line: hostname + [where hostname is the name of the Openview Management Server].

5 Double-click on the Duralink Server icon to load the Duralink Server manager program.

Running the Duralink Server Manager

1 When the Duralink Console is selected, your web browser is loaded automatically and the Duralink main page is displayed.

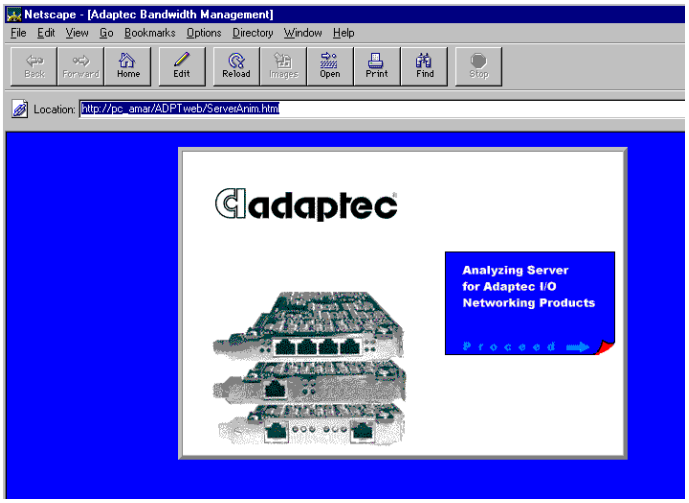


Figure 3-6. Main Program Screen

2 To run the program, click on **Proceed**.

Viewing Port Data

The Duralink Server Manager provides port data from the installed NICs on the selected device. Each NIC Is displayed graphically in the upper portion of the screen. Ports are displayed as open or closed. A closed, or inoperable port is shown with a red X.

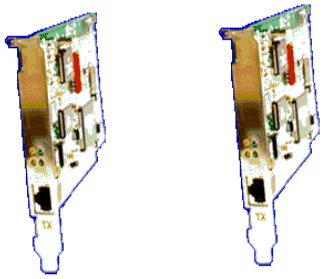


Figure 3-7. Two Adaptec NICs Shown Graphically

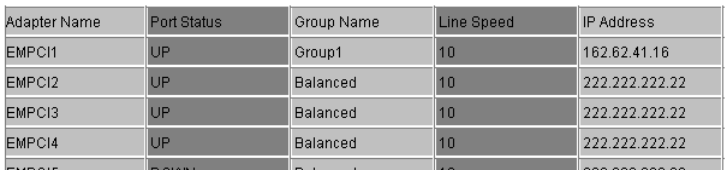
Polling Interval

This page is updated every 10 seconds, meaning that an SNMP request is made to the device at that time. If a status change occurs during that time, the card image and port status table is updated dynamically.

Note: The polling described above may increase the amount of network traffic on the segment due to increased SNMP traffic. To minimize the traffic on your segment, you can change the poll interval by editing the *NetManage.html* file. This file is located in the $OV/AdaptecWeb/Applets directory. Set the variable pollinterval to an adjusted value (defalt is 10,000 milliseconds, or 10 seconds). Initialize the change by selecting **Reload**.

Port Status Table

At the bottom portion of the screen the adapter name, port status, group name, line speed, and the IP address(es) are provided in a table. Refer to figure below.



Adapter Name	Port Status	Group Name	Line Speed	IP Address
EMPCI1	UP	Group1	10	162.62.41.16
EMPCI2	UP	Balanced	10	222.222.222.22
EMPCI3	UP	Balanced	10	222.222.222.22
EMPCI4	UP	Balanced	10	222.222.222.22

Figure 3-8. Port Status Table

- **Adapter Name**— Refers to the installed adapter ports.
- **Port Status**— Displays the operation status of each available port (Up, Down, or Standby).
- **Group Name**— This column shows the user-assigned group name for the grouped ports when using Duralink Port Aggregation. When a stand-alone port is selected, this column will not display any name.
- **Line Speed**—Shows the line speed in Mbps (10 or 100).
- **IP Address**— Displays the assigned IP Address for each port. Grouped ports will carry the same IP address.

Graph Display

You can view graphs of port status performance on a port aggregation group or interface, by clicking on any part of the status line in the Port Status Table. A graph is displayed for each NIC that is assigned to the group in the upper portion of the screen. In the lower portion is a graph that displays combined data of all ports that is assigned to the group or interface.

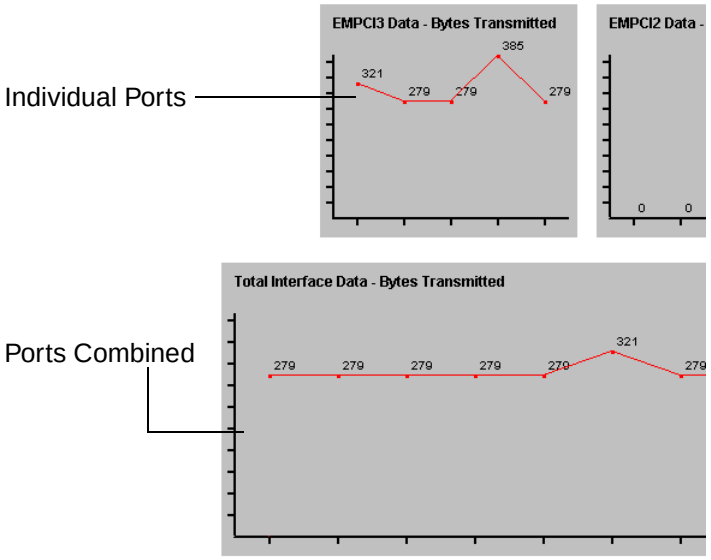


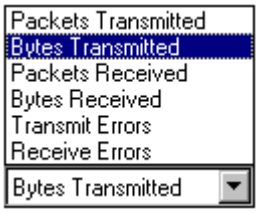
Figure 3-9. Viewing Port Status

A Java-based Graph Controls dialog box appears in the upper portion of the screen. Maximize the box to display the options.

From the Graph Controls dialog box you can set the interval and select the data to be displayed.

- Set the Interval by typing in a time interval in seconds, in the data field. Click **Change**.
- Select the data type to be displayed by clicking on the list box arrow.

A list of data types is displayed.



To set the graph controls, click on the list box to display the options. Any of the items in the list can be selected and displayed in the graph.

Duralink Specifics

The Duralink Server Manager port data table and graph are displayed differently for Duralink Port Aggregation groups than for stand-alone ports. This is because Port Aggregation typically handles more than one port in a single group with a single IP address. Where only one stand-alone port is ever displayed at one time. For more complete information on the Duralink programs refer to the *Duralink Port Aggregation User's Guide*.

Duralink Port Aggregation

Duralink Port Aggregation allows you to assign multiple ports to a group, using a single IP address, and balance the resources of all ports in the group for enhanced performance. Through the Duralink Server Manager, the specific group names are displayed and the shared IP address shown. As shown in Figure 3-10, each port is associated with the group it is assigned to, and will carry the group IP address.

Adapter Name	Port Status	Group Name	Line Speed	IP Address
EMPCI1	UP	Group1	10	162.62.41.16
EMPCI2	UP	Balanced	10	222.222.222.22
EMPCI3	UP	Balanced	10	222.222.222.22
EMPCI4	UP	Balanced	10	222.222.222.22

Figure 3-10. Server With Duralink Port Aggregation Status Table

The graphing portion of the program shows each port of the selected group individually in the upper portion of the screen, as well as a graph of the aggregated group in the lower portion of the screen.

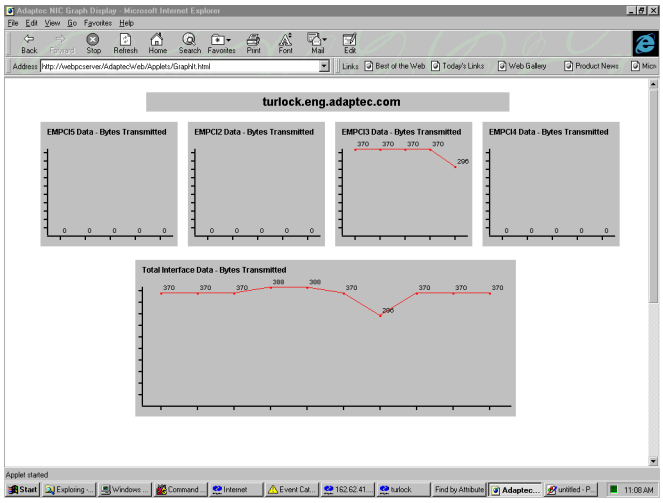


Figure 3-11. Duralink Port Aggregation Status Graphing

Stand-Alone Ports

From within OpenView, only one stand-alone port at a time can be selected. Therefore, only a single stand-alone port can be displayed at a time through the Duralink Server manager.

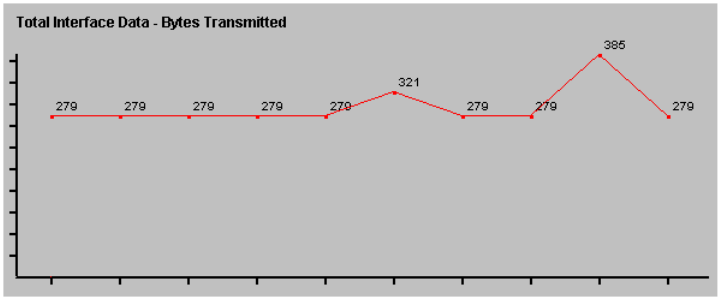


Figure 3-12. Stand-Alone Port Display

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