

Installing, Deinstalling, and Monitoring Domains Using Domain Manager

Introduction

A domain is a subset of network activity that you want to monitor. You use Domain Manager to monitor network traffic in specific domains. For instance, you can monitor RMON statistics for a specific subset of segment traffic, such as IP, IPX, or DECNET.

TrafficDirector is shipped with a number of standard domains already defined. These domains should be sufficient for most network monitoring needs. However, you can also define your own domains at any time, as well as edit previously defined domains by using Domain Editor. Domain Editor is described in Chapter 13, “Customizing Filters and Domains,” in the section called “Defining and Editing Domains Using Domain Editor.”

You must install a domain on an agent before you can use it with that agent. When a domain is installed on an agent, TrafficDirector sends SNMP messages to that agent enabling data collection for the domain.

For example, if a domain is defined as all IP traffic, you might install it both on an agent in New York called NYC and an agent in Paris called PARIS. You could then monitor IP traffic on both segments directly from your TrafficDirector console.

You may want to deinstall a domain to free network resources when you no longer need the segment traffic monitored by the domain. This chapter tells you how to install and deinstall a domain on one or more agents. It also tells you how to monitor the area of network activity the domain represents using Domain Editor.

Installing Domains at Agents

To monitor the traffic that a domain represents on a particular network segment, you need to install a domain at the agent connected to that network segment. For example, if you want to monitor IP traffic on an LAN segment in Columbus, Ohio, you must:

- Step 1** Ensure that an agent is connected on that segment and is operational.
- Step 2** Add the agent to TrafficDirector (see “Adding a New Agent” in Chapter 4).
- Step 3** Install the IP domain on that agent as described in this section.

You can install either a single domain on a single agent or multiple domains on multiple agents in a single operation.

To install domains on selected agents:

- Step 1** Select Domain Manager from the main TrafficDirector window. The Domain Manager window appears.

Step 2 Click on **Install** from the Domain Manager menu. Alternatively, you can select the **Configure** menu and then select Install. The Install Domain window appears. The current list of agents and domains is shown.

Step 3 In the **Enable Groups** area of the window, select the information you want to collect for the installed domains and agents:

- **Statistics** is the information that appears in the Segment Statistics graph:

- Vital Signs
- Size Distribution
- Destination Breakdown
- Error Breakdown

See Chapter 8, "Monitoring and Troubleshooting Single Domains" for information about this tool.

- **Short- and Long-Term History** are statistics used to create Short- and Long-Term History graphs. They are:

- Vital Signs
- Destination Breakdown
- Error Breakdown

Buckets are the points at which data is stored in a buffer. The number of buckets determines how many data samples can be stored in the buffer. When all buckets have been filled, the data samples wrap around and start replacing the data in the oldest buckets. The default number of buckets is 50. The range for number of buckets is from 5 - 744 buckets.

Periods are the time intervals between samples. For example, if your period is 30 seconds, this means the interval between buckets is 30 seconds. The default short-term period is 30 seconds, the default long-term period is 1800 seconds. The period range is from 1 - 3600 seconds.

See Chapter 8, "Monitoring and Troubleshooting Single Domains" for information about this tool.

- **Host** is the information that is included in the **Host List** tool. See Chapter 8, "Monitoring and Troubleshooting Single Domains" for information about this tool.
- **Conversation** is information that is included in the **Host Zoom** tool. See Chapter 8, "Monitoring and Troubleshooting Single Domains" for information about this tool.
- **Data Capture** is used to activate continuous data capture in the agent for packets that satisfy the domain definition. View Packets is a single-domain version of data capture.

Buffer Size is the maximum number of bytes to be saved in this capture buffer, including any implementation-specific overhead. The value must be a decimal number. The default buffer size is 64 KB. The range is 32 to 8192 KB.

Slice Size is the maximum number of bytes of each packet that can be saved in the capture buffer. For example, if a 1500 byte packet is received and **Slice Size** is set to 500, then only 500 bytes of the packet are stored in the associated capture buffer. If you set Slice Size to 0, the capture buffer saves the entire packet. The value must be a decimal number. The default slice size is 128 bytes. The range is 32 to 1600 KB, or 0.

Step 4 Select the **Host Address Mode** you want for the new domains: MAC, NET, or SUBNET. This determines whether the domains collect data for MAC level, NET level, or SUBNET level traffic. Your selection depends on whether you want information from specific hosts, from segments, etc.

The address mode determines the format in which addresses are stored in the Host and Conversation tables, and is applicable only if one or both of these groups are enabled.

Step 5 Enable Logging. Agents record information continuously. These selections let you determine which information is logged, and how often TrafficDirector asks the agent for a report. In order to generate a report, the logging function for that type of report must be turned on during the time interval of the report. Logging is discussed in “Enabling Logging” later in this chapter, and also in Chapter 14, “Logging and Reporting.”

- **Statistics.** Enables the logging of segment statistics at the selected interval. The default is 15 minutes. The range is from 15 minutes to 1 day.
- **Host.** Enables the logging of host activity at the selected interval. The default is 2 hours. The range is from 15 minutes to 1 day.
- **Conversation.** Enables the logging of host conversations at the selected interval. The default is 8 hours. The range is from 15 minutes to 1 day.

Note When you enable any of the logging options for a domain, the resulting log file occupies increasing disk space as time goes on. It is good practice, therefore, not to enable logging options for domains for which you’re certain you’ll never need a report. On the other hand, if you don’t create a log file for a given time period the information is lost and you can never generate a report for that time period.

If you’re not certain you’ll need a report for a given domain, a useful compromise is to set the logging interval to the maximum value. This minimizes the amount of disk space taken up by logged data.

Step 6 Click on **OK** to install the selected domains on the selected agents or **Cancel** to return to the Domain Manager window.

Deinstalling a Domain

When you install a domain, you enable certain statistics groups for that agent/domain combination. If you no longer need to monitor certain groups of statistics in that domain, you can disable those statistics groups for that domain/agent combination.

When you disable statistics groups for the domain/agent combination you don’t delete anything except the reporting groups for the domain/agent combination. The domain definition still exists.

To disable selected statistics groups:

Step 1 Click on Domain Manager from the TrafficDirector main window. The Domain Manager window appears.

Step 2 Click on **Deinstall** from the Domain Manager menu. (Alternatively, you can select the **Configure** menu and then select Deinstall.) The Deinstall Domain dialog box appears.

- Step 3** Select the agents and domains for which you want to disable one or more statistics groups. If you select an agent/domain combination that has not been installed, disabling statistics groups for the combination has no effect.
- Step 4** Disable the appropriate statistics groups of both types.
- Step 5** Click on **OK** to disable the de-selected groups or **Cancel** to quit without disabling the groups.

Monitoring Domain Statistics Using Domain Manager

While Traffic Monitor and Protocol Monitor monitor segments, Domain Manager monitors domains. You can use Domain Manager to:

- Display a sorted list of domains and agents.
- Specify how often to sample the traffic and update the display.
- Configure or reconfigure the domain.
- Launch other tools.

By monitoring the traffic on your network, you can establish a baseline of “normal” or expected performance and note any deviations from that performance that might signal broader network problems. The power of TrafficDirector’s Domain Manager comes from the fact that *you* can select specific domains to include the specific protocols, devices, or applications on the particular segment that you want to monitor, omitting those that are not of interest.

Once a domain is defined, you can use it to collect, view, and analyze network data associated with that domain. As described in the previous section, you must first install the domain on one or more agents (or agent groups) that are connected to the segments you want to monitor.

To use Domain Manager to monitor traffic on selected agent/domain combinations, follow the steps below. The details of the Domain Manager list box, as well as each function, are discussed in the next section.

To use Domain Manager to view RMON statistics:

- Step 1** From the TrafficDirector Main window, select the agent or agent group for which you’d like to see RMON statistics.
- Step 2** Click on the Domain Manager icon from the TrafficDirector Main window. The Domain Manager window appears. The installed domains on that agent or group appear in the list box.
- Step 3** Select the sort criterion and sample rate as described later in this section.
- Step 4** Zero in on the selected agent/domain using the tools available on the **Tools** menu. Set alarms using Watchdog if needed.

The Domain Manager List Box

The area below the Domain Manager selection buttons is the list box. This is where Domain Manager displays the result of your menu and button selections. In this section we provide a summary of the contents of the list box.

List Box Field	What it Displays
Agent	The name of the agent.
Domain	The name of the domain.
Mode	The address type designation (MAC, NET, or SNET).
PktRate	The number of packets per second. If the Statistics group is not enabled for the agent/domain, "---" appears in place of a value.
ErrRate	The rate at which errors are occurring. If the Statistics group is not enabled for the agent/domain, "---" appears in place of a value.
Util%	The average percentage network utilization during the polling period. If the Statistics group is not enabled for the agent/domain, "---" appears in place of a value.
Hosts	The number of hosts in the host table. If the Host group option is not enabled for this agent/domain, "---" appears in place of a count.
Conversations	The number of conversations in the matrix table. If the conversation group option is not enabled for this agent/domain, "---" appears in place of a count.
Packets	The number of captured packets available in the capture buffer. If the Packet Capture group option is not enabled for this agent/domain, "---" appears in place of a count.
Logging	Indicates which logging functions are enabled. S = Segment Statistics, H = Host, C = Conversation.

Changing the Order in Which Domain Manager Displays Data

You can change the order of display of the data in the Domain Manager list box so that entries are sorted by any of these sort variables:

- **Agent name.** The name of each included agent.
- **Domain name.** The name of each included domain.
- **Utilization.** The amount of bandwidth utilized (10 Mbits/sec)
- **Packet rate.** The number of packets per second
- **Error rate.** The number of errors per second.

The default sort variable is Utilization.

To change the sort order of the entries:

- Step 1** From the Domain Manager window, select the **Sort** menu.
- Step 2** Select the desired sort order. The Domain Manager list box immediately reflects this sort order.

Changing the Sample Rate

The sample rate is the interval at which the agent updates the data that appears in the list box. You can change this sample rate to meet your needs.

You have a choice of three sample rates:

- 30 seconds
- 1 minute
- 5 minutes

The default sample rate is 30 seconds.

To change the sample rate:

- Step 1** From the Domain Manager window, select the **Sample** menu.
- Step 2** Select the sample interval you want. The display immediately begins to update at the new sample rate.

Viewing Host Conversations

You can view a tabular listing of host conversations: the source host, destination host, and the packet, byte, and error statistics between each host pair.

To view host conversations:

- Step 1** From the TrafficDirector window, select Domain Manager.
- Step 2** Select the agent and domain for which you want to view the host conversation information.
- Step 3** Select the **Tools** menu, then click on Conversation List. The Host Conversation List window shows these conversations.
- Step 4** To sort the display by different display listings, select the **Sort** menu, then select a sort criterion. Your choices are:
 - **Source to Destination Order.** Lists conversations in order of source host to destination host.
 - **Destination to Source Order.** Lists conversations in order of destination host to source host.
 - **Packets.** Lists conversations in order of number of bytes per conversation.
 - **Errors.** Lists conversations in order of number of errors per conversation.

The default sort value is bytes.

- Step 5** To refresh the display, click on the **Refresh** button or select Refresh from the **Tools** menu.
- Step 6** To get information about the agent, click on the **Agent Info** button or select Agent Info from the **Tools** menu.
- Step 7** To set alarms, select Watchdog from the **Tools** menu.

- Step 8** To view a Conversation Graph of the same agent/domain combination, click on the **Show Graph** button.
- Step 9** To print the contents of the window, select the **File** menu, then click on Print.
- Step 10** To exit the Host Conversations window, select the **File** menu, then click on Exit.

Performing Single-Domain Data Capture (View Packets)

You can use Domain Manager to perform a Data Capture. The captured data is stored in a file and used as a basis for Protocol Decode.

To perform data capture:

- Step 1** On the Domain Manager window, select the **Tools** menu. Then select View Packets. The Data Capture window appears. Notice that this window is an abbreviated version of the Data Capture window since the filters defined for the capture are those of the domain.
- Step 2** Fill in the fields as described for the more general Data Capture window. You can then perform Protocol Decode on the resulting capture file. Notice that you can upload the captured data and go directly to Protocol Decode using this window.

Changing Domain Properties

When you install a domain, you choose certain properties for that domain, such as the period for Long-and Short-term History graphs, or the number of Top N hosts to include. You can change these properties for a selected domain without re-installing the domain.

To change properties for a domain:

- Step 1** Select Domain Manager from the TrafficDirector window.
- Step 2** In the Domain Manager window list box, select the domain for which you want to change properties.
- Step 3** Click on the **Properties** menu from the Domain Manager window. The Properties dialog box appears.
- Step 4** Change the properties as desired. The fields are explained in “Installing Domains at Agents” at the beginning of this chapter.
- Step 5** When you are finished changing properties for the domain, click on **OK** to change the properties or **Cancel** to quit without changing anything.

Launching Other Segment and Domain Monitoring Tools

You can launch other segment and domain monitoring tools directly from Domain Manager. These tools are described elsewhere in this manual. To do so, select the **Tools** menu.

The tools you can launch are:

- **Segment Zoom.** Launches the Segment Zoom tool that lets you “zoom in” for a close-up view of what’s happening in a domain. See Chapter 8, “Monitoring and Troubleshooting Single Domains” for more information.
- **Host List.** Launches the Host List tool, that displays the list of hosts for the selected agent and domain. See Chapter 8 for more information.
- **Conversation List.** Launches the Conversation List tool that lets you see host conversation details.

- **View Packets.** Performs a limited version of Data Capture. To use View Packets, you must have enabled Data Capture when you installed the domain.
- **Watchdog.** Launches the Watchdog tool, a proactive monitoring tool that lets you set alarms and alerts you when an event occurs. See Chapter 12, “Setting Alarms Using Watchdog” for more information.
- **Report Generator.** Launches the report generator, that lets you create various formats of reports on network events and statistics. See Chapter 14, “Logging and Reporting” for more information.

Using Scope to Selectively Monitor Agents and Domains

An agent continually monitors network traffic for all installed domains. However, you will probably want to monitor traffic only for certain agent/domain combinations.

Scope lets you edit the agent/domain combinations that are shown in the Domain Manager list box. For example, you may want to be able to select the IP domain for any agent quickly and easily. You can use Scope to display only the IP domain selections rather than all the configured domains.

Note Scope is an editing function. It determines which agents/domains appear in the Domain Manager list box. It has no effect on any operation.

When you first select Domain Manager from the TrafficDirector window, the list box contains only the domains for the agent or agent group that had been highlighted.

Enabling Duplicate IP Address Detection

To enable a SwitchProbe or a Catalyst 1200 to detect duplicate IP addresses, you must install the special domain “DUPIP” using the Domain Manager. The agent automatically detects a duplicate IP address when the DUPIP domain is installed, and sends duplicate IP traps to the host that installed the domain.

Note When you install the DUPIP domain using Domain Manager, it automatically installs only the Host table (in NET mode), no matter what installation options you choose. Logging options for the DUPIP domain are ignored.

Selecting Individual Agents and Domains

To select the agent/domain combinations that appear in the Domain Manager list box:

Step 1 Click on **Scope** from the Domain Manager window. The Select Scope window appears. The window contains two list boxes:

- **Agent List.** The Agent list displays the name of each defined agent. The the total number of agents is shown.
- **Domain List.** This list includes every domain that is currently defined in the TrafficDirector. The total number of domains is shown.

Step 2 From the Agent List, select the agents you want to appear in the list box on the Domain Manager window.

Step 3 From the Domain List, select the domains you want to appear in the list box on the Domain Manager window. The domains you select must be a subset of the domains that are installed for the selected agent or agent group.

Note Selecting a domain that is not installed on an agent has no effect. The information does not appear in the Domain Manager list box.

Step 4 Click on **OK** to view the selected agents and domains, or **Cancel** to leave the Domain Manager list box display unchanged.

The agents and domains you selected appear in the list box in the Domain Manager window. You can view the traffic information listed for each agent/domain combination, or use the information you see on the Domain Manager window as a basis for further investigation with other TrafficDirector tools. You can change the scope at any time.

Selecting or Deselecting Agents and Domains

To select or deselect a single agent or domain from the Scope list, simply click on the agent name. To select all agents or domains at once, click on the appropriate **Select All** button in the Scope dialog box. To deselect all added agents or domains, click on the appropriate **Clear All** button in the Scope dialog box.

Displaying All Installed Domains for an Agent or Agent Group

To quickly reset the scope to include all of the installed domains for an agent or agent group, click on the **Rediscover** button on the Domain Manager window. The scope now includes the entire set of installed domains, which are displayed in the list box.

The **Rediscover** button can't reset the scope to include all agents if these agents have been subsetting. You must explicitly reselect these agents using the **Scope** function.

Printing the Domain Manager List Box

You may want to print the contents of the Domain Manager list box for your records. To print the contents of the Domain Manager list box as a report, select the **File** menu, then click on **Print**.

Exiting Domain Manager

To exit the Domain Manager window, select the **File** menu, then click on **Exit**.

