Before using this information and the product it supports, read the information in "Notices" on page 27.
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Using Network Performance Insight

This information helps you to understand and use the visualizations that are available to work with Network Performance Insight.

Intended audience

The audience who are network administrators or operations specialist responsible for installing the Network Performance Insight product suite on an enterprise network.

To install Network Performance Insight successfully, you must have a thorough understanding of the following subjects:

• Network Performance Insight 1.2.0 system
• Basic principles of network protocols and network management
• NetFlow concepts
• Administration of RHEL
• IBM® Netcool® Operations Insight
• IBM Tivoli® Network Manager IP Edition
• Jazz™ for Service Management

Organization

Read this summary to help you find the information that you need.

• Chapter 1, “Introduction to visualization dashboards,” on page 1
• Chapter 2, “Traffic Details dashboard,” on page 3
• Chapter 3, “Getting started with network performance monitoring,” on page 11
• Chapter 4, “Monitoring network performance from Network Health Dashboard,” on page 15
• Chapter 5, “Monitoring network performance from Device Dashboard,” on page 21
• Chapter 6, “Monitoring network performance from Event Viewer,” on page 23
• Chapter 7, “Troubleshooting visualizations,” on page 25

Network Performance Insight architecture

IBM Network Performance Insight is a network performance monitoring system.

Network Performance Insight provides comprehensive, flexible, and scalable traffic data management with visualization and reporting to support complex, multi-vendor, multi-technology networks. It offers a range of dashboard views with robust security features that are designed to meet the needs of executive management and converging network and IT operations teams.

Network Performance Insight offers near real-time and interactive view on the traffic data that helps in reduced network downtime and optimized network performance.
Network Performance Insight provides IBM Netcool Operations Insight with comprehensive IP network device performance monitoring and session traffic analysis.

The following diagram shows how data is flowing through the various components in Network Performance Insight:

![Diagram showing data flow through Network Performance Insight components]

**IBM Open Platform with Apache Spark and Apache Hadoop**

IBM Open Platform with Apache Spark and Apache Hadoop (IOP) can be used to help process and analyze the volume, variety, and velocity of data that continually enters your organization every day. Network Performance Insight is installed as a service extension to the installed IBM Open Platform with Apache Spark and Apache Hadoop stack.

The features of IOP that are used in installing Network Performance Insight:

- IBM Open Platform with Apache Spark and Apache Hadoop
- Default support for rolling upgrades for Hadoop services
- Support for long-running applications within YARN for enhanced reliability
- Spark in-memory distributed compute engine for dramatic performance increases
- Apache Ambari operational framework. Apache Ambari is an open framework for provisioning, managing, and monitoring Apache Hadoop clusters. Ambari provides an intuitive and easy-to-use Hadoop management web UI backed by its collection of tools and APIs that simplify the operation of Hadoop clusters.
• Essentially includes the following open source technologies for working with Network Performance Insight:
  – HDFS
  – Kafka
  – Ambari
  – Spark
  – ZooKeeper

  **Note:** Because Zookeeper requires a majority, it is best to use an odd number of machines. For example, with four machines ZooKeeper can only handle the failure of a single machine; if two machines fail, the remaining two machines do not constitute a majority. However, with five machines ZooKeeper can handle the failure of two machines.

**Integrated products**

The products that are needed to work with Network Performance Insight, V1.2.0 are as follows:

**Jazz for Service Management 1.1.3.0**

Dashboard Application Services Hub provides visualization and dashboard services in Jazz for Service Management. It has a single console for administering IBM products and related applications. Visualization for Network Performance Insight is federated into Dashboard Application Services Hub.

Products that are integrated with Network Performance Insight 1.2.0:

**IBM Tivoli Network Manager IP Edition 4.2.0.1**

Tivoli Network Manager provides network discovery, device polling, including storage of polled SNMP data for reporting and analysis, and topology visualization. In addition, Network Manager can display network events, perform root-cause analysis of network events, and enrich network events with topology and other network data.

**Tivoli Netcool/OMNIbus component of IBM Netcool Operations Insight 1.4.0.3**

Netcool Operations Insight is powered by the fault management capabilities of IBM Tivoli Netcool/OMNIbus. In Network Performance Insight v1.2.0, Tivoli Netcool/OMNIbus 8.1.0.8 is an important part of the solution for monitoring the network threshold violations.

**Network Performance Insight services**

Network Performance Insight components are running on microservice architecture that has the software application as a suite of independently deployable, small, modular services in which each service runs a unique process and communicates through a well-defined, lightweight mechanism.

For more information about these services, see *IBM Network Performance Insight: Product Overview*.

**Related information:**

- [IBM Network Performance Insight on IBM Knowledge Center](#)
- [IBM BigInsights 4.2 documentation](#)
- [HDFS Architecture](#)
Service Management Connect

Connect, learn, and share with Service Management professionals: product support technical experts who provide their perspectives and expertise.


Use Service Management Connect in the following ways:

- Become involved with transparent development, an ongoing, open engagement between other users and IBM developers of Tivoli products. You can access early designs, sprint demonstrations, product roadmaps, and prerelease code.
- Connect one-on-one with the experts to collaborate and network about Tivoli and the Network and Service Assurance community.
- Read blogs to benefit from the expertise and experience of others.
- Use wikis and forums to collaborate with the broader user community.

Related information:


Network Performance Insight technical training

For Tivoli technical training information, see the following Network Performance Insight Training website at [https://tnpmsupport.persistentsys.com/updated_trainings](https://tnpmsupport.persistentsys.com/updated_trainings)

Support information

If you have a problem with your IBM Software, you want to resolve it quickly. IBM provides the following ways for you to obtain the support you need:

**Online**


**IBM Support Assistant**

The IBM Support Assistant is a free local software serviceability workbench that helps you resolve questions and problems with IBM Software products. The Support Assistant provides quick access to support-related information and serviceability tools for problem determination. To install the Support Assistant software, go to [http://www.ibm.com/software/support/isa](http://www.ibm.com/software/support/isa)

**Troubleshooting Guide**

For more information about resolving problems, see the problem determination information for this product.

Conventions used in this publication

Several conventions are used in this publication for special terms, actions, commands, and paths that are dependent on your operating system.
Typography conventions

This publication uses the following typography conventions:

**Bold**

- Lowercase commands and mixed case commands that are otherwise difficult to distinguish from surrounding text
- Interface controls (check boxes, push buttons, radio buttons, spin buttons, fields, folders, icons, list boxes, items inside list boxes, multicolumn lists, containers, menu choices, menu names, tabs, property sheets), labels (such as Tip; and Operating system considerations)
- Keywords and parameters in text

**Italic**

- Citations (examples: titles of publications, diskettes, and CDs)
- Words defined in text (example: a nonswitched line is called a point-to-point line)
- Emphasis of words and letters (words as words example: "Use the word that to introduce a restrictive clause."); letters as letters example: "The LUN address must start with the letter L.")
- New terms in text (except in a definition list): a view is a frame in a workspace that contains data.
- Variables and values you must provide: ... where myname represents....

**Monospace**

- Examples and code examples
- File names, programming keywords, and other elements that are difficult to distinguish from surrounding text
- Message text and prompts addressed to the user
- Text that the user must type
- Values for arguments or command options

**Bold monospace**

- Command names, and names of macros and utilities that you can type as commands
- Environment variable names in text
- Keywords
- Parameter names in text: API structure parameters, command parameters and arguments, and configuration parameters
- Process names
- Registry variable names in text
- Script names
Using Network Performance Insight
Chapter 1. Introduction to visualization dashboards

A dashboard is a user interface that helps you visualize data. These dashboards are interactive and display metrics and data. They can pull real-time data from all the sources.

Dashboards are a means of displaying various types of data from different sources onto a single page, which can be useful for tracking status, progress, and activity at a glance.

IBM Network Performance Insight visualization allows built-in and interactive dashboards that cover the entire traffic data representation.

A dashboard provides a simplified view of data in widgets. A widget is a graphical representation of information, which is designed to provide a quick overview of statistics, or other important information. The variety of widgets available to add to dashboards is dependent upon Dashboard Type.

The Flow data that is collected by Network Performance Insight is shown from Traffic Details dashboard. It displays the traffic details at interface level.

Related tasks:

“Monitoring Flow data with Traffic Details dashboard” on page 3

The Traffic Details dashboard displays the network information at an interface level.
Chapter 2. Traffic Details dashboard

You can view the traffic details of a particular interface in your network.

You can launch the Traffic Details dashboard from the following dashboards:

- From Network Health Dashboard.
  The traffic details for an interface are populated in the Network View page, from
  a selected network view.
- From Event Viewer or AEL
  Right-click any event from the Event Viewer or the AEL and select Flow
  Dashboard, to view the traffic details for the event.

Related tasks:

“Launching Traffic Details dashboard from Network Health dashboard” on page 18
The Traffic Details widget displays the details of an interface from a selected
network device.

Chapter 6, “Monitoring network performance from Event Viewer,” on page 23
You can monitor and manage network performance from events that are generated
by Tivoli Netcool/OMNIbus on Web GUI.

Monitoring Flow data with Traffic Details dashboard

The Traffic Details dashboard displays the network information at an interface
level.

About this task

By default, the Traffic Details page displays the data about the top ingress, top
egress, or both flows for an interface.

Procedure

1. Select Traffic Details for Ingress, Egress, or Both from the list.
2. Select any dashboard view from the View list.
   For more information about dashboard views, see "Traffic Details dashboard
   views” on page 4.
3. Click \( \) to select a start date from the Start field.
4. Click \( \) to select start time.
5. Click \( \) to select an end date from the End field.
6. Click \( \) to select end time.
7. Click Update to update the details for selected date and time.
   Two red lines are displayed in the graph that notify the Upper Threshold and
   Lower Threshold limits are crossed. When you hover over the area charts, a
tooltip is flashed giving you the details for that particular source.
   For more information about aggregated data for a specific duration, see Data
   storage section in Network Performance Insight overview. The graphical
   presentation of data is updated for the selected date and time.
8. Click \( \) to refresh the page.
9. Select one or more interfaces from the legend on the right. 
   It displays the top 10 interface details.
10. Optional: Clear the check box for a particular interface. 
    The details for that interface are hidden.
11. Optional: Check the Remaining check box. 
    It displays the details for the remaining traffic on the interfaces.

   **Note:** If the upper limit and lower limit of a threshold is crossed, two extra 
   check boxes for Upper Threshold and Lower Threshold are seen in the legend.

   The table at the bottom displays top 10 interface details. The table displays the 
   following details for an interface:

   **Rank**  Display the number in ascending order.

   **Grouping** 
   Displays the interface for which you are viewing the data. For 
   example, if you select Top Protocols from the View list, the grouping 
   that is displayed is for Protocol. 

   The columns change depending on the view selected. The main 
   grouping keys for the Traffic Details dashboard can be defined as:

<table>
<thead>
<tr>
<th>Grouping Key</th>
<th>Description</th>
</tr>
</thead>
</table>
   | Protocol     | It is a standard that is defined on how a network 
                 conversation is established. It delivers the packets 
                 from the source host to the destination host. |
   | Source       | Each data series in the donut chart represents the 
                 source that is sending the traffic. |
   | Application  | Applications are mapped based on port, protocol, and IP 
                 address or network. |
   | Destination  | Destination can be a host computer to which the 
                 network flow comes from a source computer. |

   **Octets**  Displays the amount of data that is used in KB and Bytes.

   **Percentage** 
   Percentage of traffic on the grouping that occupies the traffic.

   **Note:** If the top 10 interface table is not shown, reduce the zoom percentage 
   of your current browser.

**Traffic Details dashboard views**

Use this information to see the list of views that are available in The Traffic Details 
dashboard.

**Top Sources** 
Displays the details about top Sources for a particular entity. The report 
shows the topmost sources for ingress, egress and both. The table at the 
bottom of the view displays the following details:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Displays the number in ascending order.</td>
</tr>
</tbody>
</table>
Table 2. SOURCE_IP (continued)

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>Identity of the source</td>
</tr>
<tr>
<td>Octets</td>
<td>Displays the amount of data that is used in Bytes, KB, and so on.</td>
</tr>
<tr>
<td>Percentage</td>
<td>Percentage of traffic on the grouping that occupies the traffic.</td>
</tr>
</tbody>
</table>

Top Sources with Application
Displays the traffic details for top Sources and top Applications for a particular entity. The reports show the conversation between top most source and applications for ingress, egress, and both. The table at the bottom of the view displays the following details:

Table 3. SOURCE_IP+ APPLICATION_NAME

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Displays the number in ascending order.</td>
</tr>
<tr>
<td>Application</td>
<td>Name of the application</td>
</tr>
<tr>
<td>Source</td>
<td>Identity of the source</td>
</tr>
<tr>
<td>Octets</td>
<td>Displays the amount of data that is used in Bytes, KB, and so on.</td>
</tr>
<tr>
<td>Percentage</td>
<td>Percentage of traffic on the grouping that occupies the traffic.</td>
</tr>
</tbody>
</table>

Top Applications
Displays the traffic details for top Applications for a particular entity. The reports show the topmost Applications for ingress, egress and both. The table at the bottom of the view displays the following details:

Table 4. APPLICATION_NAME

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Displays the number in ascending order.</td>
</tr>
<tr>
<td>Application</td>
<td>Name of the application</td>
</tr>
<tr>
<td>Octets</td>
<td>Displays the amount of data that is used in Bytes, KB, and so on.</td>
</tr>
<tr>
<td>Percentage</td>
<td>Percentage of traffic on the grouping that occupies the traffic.</td>
</tr>
</tbody>
</table>

Top Applications with Source
Displays the details about top Applications with top Sources for a particular entity. The report shows the conversation between top most applications and sources for ingress, egress and both. The table at the bottom of the view displays the following details:

Table 5. APPLICATION_NAME + SOURCE_IP

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Displays the number in ascending order.</td>
</tr>
<tr>
<td>Application</td>
<td>Name of the application</td>
</tr>
<tr>
<td>Source</td>
<td>Identity of the source</td>
</tr>
</tbody>
</table>
Table 5. APPLICATION_NAME + SOURCE_IP (continued)

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Octets</td>
<td>Displays the amount of data that is used in Bytes, KB, and so on.</td>
</tr>
<tr>
<td>Percentage</td>
<td>Percentage of traffic on the grouping that occupies the traffic.</td>
</tr>
</tbody>
</table>

Top Applications with Destination
Displays the traffic details for top Applications with top Destinations for a particular entity. The reports show the conversation between top most Applications and Destinations for ingress, egress and both. The table at the bottom of the view displays the following details:

Table 6. APPLICATION_NAME + DESTINATION_IP

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Displays the number in ascending order.</td>
</tr>
<tr>
<td>Application</td>
<td>Name of the application</td>
</tr>
<tr>
<td>Destination</td>
<td>Identity of the destination</td>
</tr>
<tr>
<td>Octets</td>
<td>Displays the amount of data that is used in Bytes, KB, and so on.</td>
</tr>
<tr>
<td>Percentage</td>
<td>Percentage of traffic on the grouping that occupies the traffic.</td>
</tr>
</tbody>
</table>

Top Applications with Conversation
Displays the traffic details for top Applications with top Conversations for a particular entity. The reports show the conversation between top most Applications, Sources, and Destinations for ingress, egress and both. The table at the bottom of the view displays the following details:

Table 7. APPLICATION_NAME + SOURCE_IP + DESTINATION_IP

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Displays the number in ascending order.</td>
</tr>
<tr>
<td>Application</td>
<td>Name of the application</td>
</tr>
<tr>
<td>Source</td>
<td>Identity of the source</td>
</tr>
<tr>
<td>Destination</td>
<td>Identity of the destination</td>
</tr>
<tr>
<td>Octets</td>
<td>Displays the amount of data that is used in Bytes, KB, and so on.</td>
</tr>
<tr>
<td>Percentage</td>
<td>Percentage of traffic on the grouping that occupies the traffic.</td>
</tr>
</tbody>
</table>

Top Protocols
Displays the traffic details for top Protocols for a particular entity. The reports show top most Protocols for ingress, egress and both. The table at the bottom of the view displays the following details:

Table 8. PROTOCOL_ID

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Displays the number in ascending order.</td>
</tr>
<tr>
<td>Protocol</td>
<td>Identity of the protocol</td>
</tr>
</tbody>
</table>
Table 8. PROTOCOL_ID (continued)

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Octets</td>
<td>Displays the amount of data that is used in Bytes, KB, and so on.</td>
</tr>
<tr>
<td>Percentage</td>
<td>Percentage of traffic on the grouping that occupies the traffic.</td>
</tr>
</tbody>
</table>

**Top Protocols with Source**
Displays the traffic details for top Protocols with top Sources for a particular entity. The reports show the conversation between top most Protocols with Sources for ingress, egress and both. The table at the bottom of the view displays the following details:

Table 9. PROTOCOL_ID + SOURCE_IP

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Displays the number in ascending order.</td>
</tr>
<tr>
<td>Protocol</td>
<td>Identity of the protocol</td>
</tr>
<tr>
<td>Source</td>
<td>Identity of the source</td>
</tr>
<tr>
<td>Octets</td>
<td>Displays the amount of data that is used in Bytes, KB, and so on.</td>
</tr>
<tr>
<td>Percentage</td>
<td>Percentage of traffic on the grouping that occupies the traffic.</td>
</tr>
</tbody>
</table>

**Top Protocols with Application**
Displays the traffic details for top Protocols with top Applications for a particular entity. The reports show the conversation between top most Protocols with Applications for ingress, egress and both. The table at the bottom of the view displays the following details:

Table 10. PROTOCOL_ID + APPLICATION_NAME

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Displays the number in ascending order.</td>
</tr>
<tr>
<td>Protocol</td>
<td>Identity of the protocol</td>
</tr>
<tr>
<td>Application</td>
<td>Name of the application</td>
</tr>
<tr>
<td>Octets</td>
<td>Displays the amount of data that is used in Bytes, KB, and so on.</td>
</tr>
<tr>
<td>Percentage</td>
<td>Percentage of traffic on the grouping that occupies the traffic.</td>
</tr>
</tbody>
</table>

**Top Protocols with Conversation**
Displays the traffic details for top Protocols with top Conversations for a particular entity. The reports show the conversation between top most applications, sources, and destinations for ingress, egress and both. The table at the bottom of the view displays the following details:

Table 11. PROTOCOL_ID + SOURCE_IP + DESTINATION_IP

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Displays the number in ascending order.</td>
</tr>
<tr>
<td>Protocol</td>
<td>Identity of the protocol</td>
</tr>
<tr>
<td>Source</td>
<td>Identity of the source</td>
</tr>
</tbody>
</table>
Table 11. PROTOCOL_ID + SOURCE_IP + DESTINATION_IP (continued)

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Destination</td>
<td>Identity of the destination</td>
</tr>
<tr>
<td>Octets</td>
<td>Displays the amount of data that is used in Bytes, KB, and so on.</td>
</tr>
<tr>
<td>Percentage</td>
<td>Percentage of traffic on the grouping that occupies the traffic.</td>
</tr>
</tbody>
</table>

Top Protocols with Destination

Displays the traffic details for top Protocols with top Destinations. The reports show the conversation between top most Protocols and top most Destinations for ingress, egress and both. The table at the bottom of the view displays the following details:

Table 12. PROTOCOL_ID + DESTINATION_IP

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Displays the number in ascending order.</td>
</tr>
<tr>
<td>Protocol</td>
<td>Identity of the protocol</td>
</tr>
<tr>
<td>Destination</td>
<td>Identity of the destination</td>
</tr>
<tr>
<td>Octets</td>
<td>Displays the amount of data that is used in Bytes, KB, and so on.</td>
</tr>
<tr>
<td>Percentage</td>
<td>Percentage of traffic on the grouping that occupies the traffic.</td>
</tr>
</tbody>
</table>

Top Conversations

Displays the traffic details for top Conversations for a particular entity. The reports show the topmost conversations for ingress, egress and both. The table at the bottom of the view displays the following details:

Table 13. SOURCE_IP + DESTINATION_IP

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Displays the number in ascending order.</td>
</tr>
<tr>
<td>Source</td>
<td>Identity of the source</td>
</tr>
<tr>
<td>Destination</td>
<td>Identity of the destination</td>
</tr>
<tr>
<td>Octets</td>
<td>Displays the amount of data that is used in Bytes, KB, and so on.</td>
</tr>
<tr>
<td>Percentage</td>
<td>Percentage of traffic on the grouping that occupies the traffic.</td>
</tr>
</tbody>
</table>

Top Conversations with Application

Displays the traffic details for top Conversations and top Applications for a particular entity. The reports show the conversation between top most source, destination, and applications for ingress, egress and both. The table at the bottom of the view displays the following details:

Table 14. SOURCE_IP + DESTINATION_IP + APPLICATION_NAME

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Displays the number in ascending order.</td>
</tr>
<tr>
<td>Application</td>
<td>Name of the application</td>
</tr>
</tbody>
</table>

Using Network Performance Insight
Table 14. **SOURCE_IP + DESTINATION_IP + APPLICATION_NAME** (continued)

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>Identity of the source</td>
</tr>
<tr>
<td>Destination</td>
<td>Identity of the destination</td>
</tr>
<tr>
<td>Octets</td>
<td>Displays the amount of data that is used in Bytes, KB, and so on.</td>
</tr>
<tr>
<td>Percentage</td>
<td>Percentage of traffic on the grouping that occupies the traffic.</td>
</tr>
</tbody>
</table>

**Top Destinations**
Displays the traffic details for top Destinations for a particular entity for a particular entity. The reports show the topmost Destinations for ingress, egress and both. The table at the bottom of the view displays the following details:

Table 15. **DESTINATION_IP**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Displays the number in ascending order.</td>
</tr>
<tr>
<td>Destination</td>
<td>Identity of the destination</td>
</tr>
<tr>
<td>Octets</td>
<td>Displays the amount of data that is used in Bytes, KB, and so on.</td>
</tr>
<tr>
<td>Percentage</td>
<td>Percentage of traffic on the grouping that occupies the traffic.</td>
</tr>
</tbody>
</table>

**Top Destinations with Application**
Displays the traffic details for top Destinations with top Applications for a particular entity. The reports show the conversation between top most Destinations and Applications for ingress, egress, and both. The table at the bottom of the view displays the following details:

Table 16. **DESTINATION_IP + APPLICATION_NAME**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Displays the number in ascending order.</td>
</tr>
<tr>
<td>Application</td>
<td>Name of the application</td>
</tr>
<tr>
<td>Destination</td>
<td>Identity of the destination</td>
</tr>
<tr>
<td>Octets</td>
<td>Displays the amount of data that is used in Bytes, KB, and so on.</td>
</tr>
<tr>
<td>Percentage</td>
<td>Percentage of traffic on the grouping that occupies the traffic.</td>
</tr>
</tbody>
</table>
Chapter 3. Getting started with network performance monitoring

Depending upon your organization’s deployment, you can access the reporting interface through Dashboard Application Services Hub.

Procedure

- Access the reporting interface from Dashboard Application Services Hub as follows:
  1. Open a web browser and enter the following URL for the Jazz™ for Service Management UI and reporting server:
     https://host.domain:port/DASH_context_root
     For example: https://<myserver.ibm.com>:16311/ibm/console
     Where:
     - host.domain is the fully qualified host name or IP address of the Jazz for Service Management UI and reporting server.
     - port is the secure HTTP port number that was specified during installation. The default value is 16311.
     - /DASH_context_root is the context root for the console that was specified during installation. The default value is /ibm/console.
  2. Enter the user ID and password in the Dashboard Application Services Hub login page. Click Log in.
     The Dashboard Application Services Hub Welcome page opens.

Note: Console Integration icon is available only after you install the Device Dashboard.

Click Console Integration icon ( ) on the navigation bar to configure Network Performance Insight system under System Configuration.

- Click Incident ( ) in the navigation bar and select Event Viewer or Active Event List (AEL) under Events.
  Right-click any event from the Event Viewer or the AEL and select Flow Dashboard, to view the traffic details for the event.

Note: The Flow Dashboard option is the launch-in-context tool that is created for Network Performance Insight. For more information, see Configuring launch-in-context integration with Network Performance Insight in Network Performance Insight integrations.

- Click Incident ( ) on the navigation bar and select Network Health Dashboard under Network Availability.
The traffic details for an interface are populated in the Network View page, from a selected network view.

**Related information:**

[Configuring the Device Dashboard](#)

---

**Discovering networks**

Using Network Manager, you can discover your network and schedule regular discoveries to ensure that your network topology stays up to date.

After Network Manager is installed, configure and verify your network discovery to produce the most complete and accurate network topology possible for the devices and technologies in your network. An accurate network topology facilitates efficient root-cause analysis of network problems.

You can configure how your network is discovered, including which kinds of devices you want to discover, and where the boundaries of the discovery must be.

**Configuring the network discoveries**

Network Manager provides tools for discovering your network that uses a phased approach.

**About this task**

You can edit the topology after discovery is complete by using the topology management features in the Network Hop View. Use these tools to configure your network discoveries:

- Use the Discovery Configuration Wizard to perform initial discoveries.
  
  The wizard provides a guided discovery and makes configuration choices for you based on the answers that you provide as you work through the wizard.

- Use the Discovery Configuration GUI to perform subsequent discoveries.
  
  Using the GUI you can configure detailed discovery settings, including scope, seeds, community strings, agent selection, and many other configuration settings.

**Note:** If you are an experienced user of Network Manager, you can also configure a discovery by using the discovery configuration files and the command line.

**Procedure**

1. **Plan for the discovery**

   Before you configure and run a discovery, you must check several system settings, parameters, and requirements.

2. **Configure standard discoveries**

   You can configure discovery by using the Discovery Configuration Wizard, by using the Discovery Configuration GUI, or by using the command line.

3. **Configure specialized discoveries**

   You can configure the system to perform more complex discoveries, such as MPLS and NAT discovery.

**Related information:**

[Configuring network discovery on Tivoli Network Manager](#)

[Getting started with discovery](#)
Setting up network for visualizations

To set up network visualization, follow these administration tasks.

About this task

You can set up Network Views for your operators, and configure users, roles, and groups. Run some of these tasks before you work with your Network Health Dashboard.

Procedure

1. **Administer the GUI framework**
   
   Use the functions of the Dashboard Application Services Hub within Jazz for Service Management to administer pages, folders, views, widgets, and console preference profiles.

2. **Administer network views**
   
   Network Views widget shows logical groupings of devices that you might need to monitor within your network. Create new views or change existing views to help network operators visualize devices.

3. **Administer network view bookmarks**
   
   Network view bookmarks group just those network views that you or your team need to monitor. Create new bookmarks or change existing bookmarks to help network operators visualize just those devices that they need to monitor.

4. **Configure tools and menus**
   
   You can create and edit menus, configure user access to menu items, define the context in which menus are available, and create tools that can be run from the menus.

5. **Editing network topology**
   
   Edit the discovered network topology to manually add and remove devices and connections.
Chapter 4. Monitoring network performance from Network Health Dashboard

IBM Networks for Operations Insight is an optional feature that can be added to a deployment of the base IBM Netcool Operations Insight solution to provide service assurance in dynamic network infrastructures. The capabilities of Networks for Operations Insight include network discovery, visualization, event correlation and root-cause analysis, and configuration and Compliance Management that provide service assurance in dynamic network infrastructures.

Network Health Dashboard is one of the main features in Networks for Operations Insight solution. The Network Health Dashboard is only available if you have Network Manager as part of Netcool Operations Insight.

The Network Health Dashboard monitors a selected network view, and displays device and interface availability within that network view. It also reports on performance by presenting graphs, tables, and traces of KPI data for monitored devices and interfaces.

Traffic Details dashboard can also be launched for the interfaces that are available in the Structured Browser.

The dashboard includes the event viewer, for more detailed event information. You can start the Traffic Details dashboard to display the NetFlow traffic details for the interface that violated a set threshold value.

Related information:

[IBM Networks for Operations Insight]

Getting started with Network Health Dashboard

Perform these tasks using the Network Health Dashboard efficiently.

Procedure

1. **Administer the Network Health Dashboard**
   You can configure and maintain the Network Health Dashboard for users.

2. **Develop custom dashboards**
   You can create pages and place the various widgets that are provided with Network Manager, Tivoli Netcool/OMNibus Web GUI, Network Performance Insight, and other integrated products that are deployed in your Dashboard Application Services Hub environment.

3. **Monitor the network by using the Network Health Dashboard**
   You can use the Network Health Dashboard to determine any network issues, and how to navigate from the dashboard to other parts of the product for more detailed information.
Traffic Details from Network Health Dashboard

Network Health Dashboard displays the traffic details of a particular network.

The Traffic Details widget data is populated from NCIM view that is part of Network Performance Insight database structure, where it joins multiple tables into a single virtual table.

NCIM view represents the subset of data that is discovered from the Tivoli Network Manager and Network Performance Insight Flow tables.

The discovered data by Tivoli Network Manager is mapped with Flow records by using the following fields:

Table 17. Mappings table

<table>
<thead>
<tr>
<th>Flow table</th>
<th>NCIM view</th>
</tr>
</thead>
<tbody>
<tr>
<td>exporter ip</td>
<td>device ip address</td>
</tr>
<tr>
<td>if index</td>
<td>interface index</td>
</tr>
</tbody>
</table>

The following SNMP fields in the Traffic Details widget are populated from the NCIM view:

Note: If the discovered interfaces are not mapped with Network Performance Insight flow data, you can’t see the SNMP fields in the table on Traffic Details dashboard.

Table 18. SNMP fields in Traffic Details dashboard

<table>
<thead>
<tr>
<th>Traffic Details fields</th>
<th>Description</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device</td>
<td>The device name.</td>
<td>The exporter ip from Flow table is mapped to the device name in the NCIM view. This mapping results to the device name populated in the traffic details widget.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index</td>
<td>A unique number that is associated with the physical or logical interface.</td>
<td>The if index from Flow table is mapped to the interface index from in the NCIM view. This mapping results to the index value populated in the traffic details widget.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>The interface name.</td>
<td>The interfaces that are discovered by Tivoli Network Manager are mapped with the collected Network Performance Insight flow data as interface name. This mapping results to the description of the device that is populated in the traffic details widget.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed</td>
<td>The value of the traffic flow through network interfaces, which measures the speed of the data transferred.</td>
<td>The speed from Flow table is mapped to the interface speed from NCIM view. This mapping results to the speed value populated in the traffic details widget.</td>
</tr>
</tbody>
</table>

Related concepts:
Adding Network Performance Insight widget in Network Health dashboard

Dashboards or pages, are an arrangement of one or more widgets in the work area and contain the widgets that are needed to complete tasks. Users whose roles have Editor or Manager access to a dashboard can edit a dashboard's layout and content. You can add multiple widgets in a screen. When you are adding widgets, you can also rearrange the widgets as needed.

About this task

By default, the Network Health Dashboard page displays the Network View, Structure Browser, and Event Viewer widgets.

To view the traffic details from Network Health Dashboard for the first time, you need to add the Network Performance Insight widget.

Procedure

1. Log in to Jazz for Service Management server.

2. Click the Incident icon and select Network Health Dashboard under Network Availability.


4. In the tab bar, click Page Actions icon and select Edit Page.
   The dashboard is changed to show the widget palette and a series of buttons in the tab bar. The menu that is associated with the Edit options icon for each widget is updated so that you can edit its layout and content.

5. Click the NPI folder from the widget palette.
   The NPI folder name is based on the launch-in-context tool that is created for Network Performance Insight. For more information, see Configuring launch-in-context integration with Network Performance Insight in Integrating Network Performance Insight.

6. Click and drag the Traffic Details widget from the palette.
   To assist you in positioning the widget, use the background layout grid. You can change the size of the layout grid and have widgets snap to the layout guide lines through the Layout button in the tab bar.

7. Click Save and Exit to exit the dashboard from the edit mode, after you complete editing.

Related tasks:

“Launching Traffic Details dashboard from Network Health dashboard” on page 18

The Traffic Details widget displays the details of an interface from a selected network device.

Related information:
Launching Traffic Details dashboard from Network Health dashboard

The Traffic Details widget displays the details of an interface from a selected network device.

About this task

Browse from Network Health dashboard to view the specific traffic details of an interface in the Traffic Details page.

By default, the Traffic Details page displays the details for Top Ingress interfaces at Ingress level, Top Egress interfaces at Egress level. Whereas, Top Interfaces and all Top Networks display the traffic details as Both.

Procedure

1. Log in to Jazz for Service Management server.

2. Click the Incident icon ( ) and select Network Health Dashboard under Network Availability.
   The dashboard page populates the configured network devices.

3. Select a view from the Network Views bookmark that you configured from the Network Health Dashboard.
   The other widgets update to show information based on the network view that you selected.
   The Network View dashboard opens in another tab. This dashboard contains Network Views GUI, the Event Viewer, the Structure Browser, and the Traffic Details, and it displays the selected network view.

4. Double-click a network from the Network View.
   For example, double-click All Routers.

5. Click an entity or device from the Network View.
   The selected entity details are displayed on the Structure Browser.

6. Click the Show Interfaces icon ( ) from the Structure Browser.
   List of interfaces for the entity is displayed.

7. Click an interface.
   The traffic details data with the interface details is displayed on the Traffic Details.

8. Select an entity from View list.
   For information on monitoring traffic details, see “Monitoring Flow data with Traffic Details dashboard” on page 3.

9. Optional: Click the Maximize icon ( ) from the upper right of the Traffic Details widget.
   The traffic details dashboard is displayed in full screen mode.

Related tasks:

“Getting started with Network Health Dashboard” on page 15
Perform these tasks using the Network Health Dashboard efficiently.
Related information:

🔗 About the Structure Browser
Chapter 5. Monitoring network performance from Device Dashboard

The Netcool Operations Insight 1.4.0.3 entitled customers can use the Device Dashboard to troubleshoot network issues by navigating the network topology and see performance metric values, anomalies and trends on any device, link, or interface.

Follow these steps to install, configure, and use the Device Dashboard for performance monitoring of Flow traffic and entity metric data.

- **Install and configure Device Dashboard**
- **Troubleshoot network issues by using the Device Dashboard**
  - Launching the Device Dashboard
    - Launching the Device Dashboard from the Event Viewer
    - Launching the Device Dashboard from a topology GUI
    - Launching the Device Dashboard from the Network Health Dashboard
  - Changing Device Dashboard focus
  - Monitoring performance data
- **Configure performance insight widgets**
- **Define static thresholds for anomaly detection**
  - About poll definitions and static thresholds
  - Creating basic threshold poll definitions

**Note:** The data that is entered and saved in the NPI Anomaly Threshold tab is stored in THRESHOLD.STATIC_DEFINITION table.
Chapter 6. Monitoring network performance from Event Viewer

You can monitor and manage network performance from events that are generated by Tivoli Netcool/OMNIbus on Web GUI.

About this task

You can access the events from the following widgets:

- **Managing events in the Event Viewer**
  Use the JavaScript Event Viewer to monitor and manage events. You can access Event Viewers in any page in Dashboard Application Services Hub that hosts an Event Viewer widget.

- **Monitoring events in Active Event Lists**
  The Active Event List (AEL) is an interactive Java applet for displaying alert data from the ObjectServer. Communication between the ObjectServer and the AEL is bidirectional. The AEL presents alert information from the alerts.status table in the ObjectServer to operators. Operators can perform actions against alerts such as changing the results from the alert properties in the alerts.status table from the AEL.

Procedure

1. Log in to Jazz for Service Management server.

2. In the navigation bar, click **Incident ( ) > Events > Event Viewer**.

3. Right-click any event from the **Event Viewer** page and select **Flow Dashboard**.
   The Traffic Details dashboard that is associated with the selected event is displayed in another window.

   **Note:** You can launch the Traffic Details dashboard from Flow thresholds only.

4. Optional: In the navigation bar, click **Incident ( ) > Events > Active Event List (AEL)**.

5. Right-click any event from the Active Event List (AEL) page and select **Flow Dashboard**.
   The Traffic Details report associated with the selected event is displayed in another window.

6. Right-click any event from the **Event Viewer** page and select **Performance Insight > Show Traffic**.
   The Traffic Details dashboard that is associated with the selected event is displayed in another window.

   **Note:** You can launch the Traffic Details dashboard from Flow thresholds only.

Related information:

- **Monitoring events in the Web GUI**
- **Configuring launch-in-context menu**
Event severity levels

A severity level is associated with each generated alert to help you to prioritize and manage alerts in the Event list. Severity levels are color-coded for easy identification.

There are six default severity levels, as shown in the following table.

<table>
<thead>
<tr>
<th>Level</th>
<th>Threshold type</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Clear</td>
<td>Green</td>
</tr>
<tr>
<td>1</td>
<td>Intermediate</td>
<td>Gray</td>
</tr>
<tr>
<td>2</td>
<td>Warning</td>
<td>Blue</td>
</tr>
<tr>
<td>3</td>
<td>Minor</td>
<td>Yellow</td>
</tr>
<tr>
<td>4</td>
<td>Major</td>
<td>Orange</td>
</tr>
<tr>
<td>5</td>
<td>Critical</td>
<td>Red</td>
</tr>
</tbody>
</table>

You can customize the event data and how the event data is displayed.

Related information:
- Customizing event displays in the Web GUI
Chapter 7. Troubleshooting visualizations

Problems that might occur during network visualizations and how to resolve them.

About this task

For all troubleshooting issues in Network Performance Insight dashboards, see Troubleshooting Network Performance Insight.
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