IBM Network Performance Insight 1.1.0
Document Revision R2E1

Release summary

IBM
Note
Before using this information and the product it supports, read the information in "Notices" on page 15.
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About this information

Describes issues of importance to users of IBM® Network Performance Insight, Version 1.1.0 system.

Get familiar with what’s new in the release and access valuable release resources.

Intended audience

The audience for this information is the network administrator or operations specialist. You must have a thorough understanding of the following subjects:

- Basic principles of networks and network management
- Administration of the Linux
- IBM Network Performance Insight
- IBM Netcool Operations Insight
- IBM Tivoli Netcool/OMNIbus
- Jazz for Service Management

Network Performance Insight overview

IBM Network Performance Insight is a flow-based network traffic 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 repair times and optimized network performance.

Network Performance Insight provides IBM Netcool® Operations Insight with network performance monitoring capabilities to address modern network management challenges around application-oriented, software-defined-networks in the enterprise data centers and intranet.

The following diagram shows how data is flowing through the various components in Network Performance Insight:
The flow records that are sent by the configured flow exporters are collected by Collector, segregated, and sent to Inventory or Analytics component based on the information that they contain.

Analytics component performs flow session categorization and aggregation. These results are then stored in Network Performance Insight database.

Additionally, you can control the flow interface to enable collection and perform administrative tasks on the web-based user interface on Jazz for Service Management portal. The dashboards provide up-to-date actionable information to increase insight into network problems and streamline root cause analysis.

The database can be queried to display the results on the Dashboard Application Services Hub portal in the form of specialized report tables, graphs, and charts that are ready for immediate use. The database is designed for high performance.

You can integrate Network Performance Insight with Tivoli Netcool/OMNIbus to take advantage of its fault management capabilities.

Network Performance Insight documentation consists of the following:

- Release summary
- Installing Network Performance Insight
- Configuring Network Performance Insight
- Integrating with Tivoli Netcool/OMNIbus component of Netcool Operations Insight.
- Using Network Performance Insight
- Troubleshooting Network Performance Insight
- References
- Technical notes

**Related information:**

- IBM Network Performance Insight on IBM Knowledge Center
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:

- IBM Network Performance Insight community on developerWorks

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.

Typeface conventions

This publication uses the following typeface 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
Chapter 1. IBM Network Performance Insight release information

Network Performance Insight 1.1.0 is available. Compatibility, installation, and other getting-started issues are addressed in these release notes.

Table 1. Release update

<table>
<thead>
<tr>
<th>Version</th>
<th>Type of Release</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.0</td>
<td>Availability of Network Performance Insight 1.1.0.</td>
<td>December, 2015</td>
</tr>
</tbody>
</table>

CAUTION:
Before attempting an installation of Network Performance Insight you are advised to read these release notes. Failure to consult these release notes might result in a corrupted, incomplete, or failed installation.

Description

IBM Network Performance Insight is a flow-based network traffic performance monitoring system. It provides comprehensive and scalable visibility on network traffic with visualization and reporting of network performance data for complex, multivendor, multi-technology networks.

Understanding network traffic patterns help network operators to effectively manage capacity and troubleshoot performance problems. Network operators gain insight into application bandwidth usage and potential causes of network congestion by observing network patterns overtime. Network Performance Insight provides visualization of predictive analytics and alerting to support daily network operation and long-term network planning.

Network Performance Insight supports the following vendors, versions, and protocols:

<table>
<thead>
<tr>
<th>Flow formats</th>
<th>Vendor</th>
<th>Supported versions</th>
<th>Supported traffic types</th>
<th>Supported protocols</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netflow</td>
<td>Cisco</td>
<td>1, 5, 9</td>
<td>• IPv4</td>
<td>• UDP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Note: See, “RFC 3954” for NetFlow V9</td>
<td>• IPv6</td>
<td></td>
</tr>
<tr>
<td>JFlow</td>
<td>Juniper Networks</td>
<td>5, 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFlow</td>
<td>Acatel</td>
<td>5, 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NetStream</td>
<td>Huawei</td>
<td>5, 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IPFIX</td>
<td>Industry standard.</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Note: See, “RFC 7011”</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Network Performance Insight can compute and present aggregate values in near real-time and at fine-grained or detailed periods that help in mission critical decisions by service providers and networked IT infrastructures.

Network Performance Insight is part of the IBM integrated network and service assurance solution portfolio, comprising performance management and fault management, customer experience, service quality, and business service management.

IBM Network Performance Insight is integrated with IBM Netcool Operations Insight 1.3.1 for effective monitoring and alerting IP networks. Currently, Network Performance Insight 1.1.0 is integrated with IBM Tivoli® Netcool/OMNibus, v8.1.0.5 component of Netcool Operations Insight.

Network Performance Insight value propositions

Improved service delivery
Provides a quick view of network usage with the help of Traffic Overview and Traffic Details dashboards that are available in Network Performance Insight.

Exhaustive network visibility
The available dashboards help to understand network usage and usage patterns to view all information about endpoints and enhanced data slicing facility on longer duration.

Effective capacity planning for ROI
Reduces operational costs and boosts efficiencies by consolidating performance management of systems and enabling proactive problem identification. The traffic data usage reports provide clear data points to differentiate bandwidth spikes, along with information about congestion in network.

User-defined thresholds and alerts
Predefined and custom threshold settings help provide proactive alerts on traffic data violations at interface level. These violations might be due to high usage of applications.

Faster troubleshooting and root cause analysis
Improves visibility into network performance to help minimize service degradations and disruptions, and speed troubleshooting. The usage and trend analysis of the reports remove network bottlenecks, blind spots with seamless navigation among the dashboards and performance monitoring protocols to allow the total problem resolution.
Supported products and components

Provides information on the products that are supported or integrated with Network Performance Insight and the base components that are associated with Network Performance Insight.

Network Performance Insight system components.

Collector
Collects metric data from network resources. The Collector component collects flow session data from flow-enabled devices, refines the data, and transforms the data to a structured format as flow records. The records are then sent to the Analytics component for aggregation and other processing.

Analytics
It aggregates the raw flow data and then moves the data to a centralized database. It also processes calculations and detects real-time threshold violations. Analytics loads the data into the database at every 1 min, 30 min, and 1-day intervals. Analytics provides these basic functions:
- Categorizes, aggregates, and ranks the data that is sent by the Collector.
- Transfers both raw and aggregated data to the database.
- Detects and alerts real-time threshold violations. A threshold is a value that is compared against metrics to determine whether the metrics exceed or drop below a specific constraint. Currently, only burst threshold is supported. Burst threshold ignores the natural network bursts by evaluating how long in a row the violations occurred per resource. Burst thresholds can be set and reset multiple times.

Inventory and DNS
- Manages the Flow interfaces.
- Resolves DNS names for reporting and distributes the interface metadata that is related to inventory.
Storage

Traffic flow profiling requires advanced database technology to handle high flow volumes in large enterprise and service provider infrastructures. Network Performance Insight uses a fast database with efficient management of memory usage. Network Performance Insight has an indigenously developed database that has the following features:

- Compressed, columnar data storage that manages the data that is collected by Network Performance Insight.
- Provides inbound APIs to insert and update data.
- Periodically consolidates storage files and purging old data with the help of Storage optimizer.
- Uses cutting-edge technologies to provide a scalable, resilient, and fast data storage and analysis.

Visualization and reporting

The aggregated flow data is presented on Dashboard Application Services Hub console in readable graphs in various granularities to help identify interfaces, protocols, applications, and endpoints that consume traffic.

The Dashboard Application Services Hub console facilitates the execution of administration and some configuration tasks. Its main job however is to allow the user browse for web-based network reports that can be rapidly integrated into the system; on-demand, and customizable reports. It is also a platform for collocation and integration with other Tivoli products.

The products that are included in Network Performance Insight, V1.1.0 are as follows:

**Jazz for Service Management 1.1.2.1**

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 1.1.0:

**Tivoli Netcool/OMNibus component of IBM Netcool Operations Insight 1.3.1**

Netcool Operations Insight is powered by the fault management capabilities of IBM Tivoli Netcool/OMNibus. In Network Performance Insight v1.1.0, Tivoli Netcool/OMNibus 8.1.0.5 is an important part of the solution for monitoring the network threshold violations.

Deployment scenarios

How to decide on the different installation scenarios and server setup recommendations.

For more information about the deployment scenarios in Network Performance Insight v1.1.0, see Installation decision maps in Installing Network Performance Insight.
Features in this release

IBM Network Performance Insight, Version 1.1.0 offers the following features:

Some of the top features of Network Performance Insight:

- Supported on Red Hat Enterprise Linux 6.x.
- Simple and fast installation. Network Performance Insight has a smaller footprint in terms of sizing and deployment.
- Interactive dashboards with drill-down support to network and interface level that can display near real-time data. These dashboards are supported on Dashboard Application Services Hub portal on Jazz for Service Management.
- New storage technology based on columnar storage. The in-house Network Performance Insight database supports standard SQL queries for analysis. The database has a built-in storage optimizer for I/O and query performance.
- Flexible retention periods and raw and aggregated data - able to support smaller storage capacity versus longer analysis period.
- DNS lookup for inventory data.
- Traffic data that can be categorized by the domain observation points or interfaces and aggregated up to 1 min granularity.
- Comprehensive descriptions that provide more clarity on violation information for each event in the Threshold Violations table in Traffic Overview dashboard.
Indigenously developed database. Traffic flow profiling requires advanced database technology to handle high flow volumes in large enterprise and service provider infrastructures. Network Performance Insight uses a fast database with efficient management of memory usage.

- Efficient database backup and restore options.
- Integrated with Tivoli Netcool/OMNibus component of Netcool Operations Insight for monitoring network traffic data violations.

Related information:

Jazz for Service Management Version 1.1.2.1 Readme

System requirements

The system requirements for the IBM Network Performance Insight, Version 1.1.0 installations.

For information about system requirements for the IBM Network Performance Insight, Version 1.1.0, see Requirements.

See the Detailed System Requirement for Network Performance Insight technical note that is created from Software Product Compatibility Reports (SPCR) from here:

http://www-969.ibm.com/software/reports/compatibility/clarity/index.jsp

Note: For sizing information, contact IBM Support.

Media content

The IBM Network Performance Insight, Version 1.1.0 media listing.

For information about the part numbers for all the components in Network Performance Insight, see Download IBM Network Performance Insight Version 1.1.0.

Network Performance Insight consists of the following general media packages:
- IBM Netcool Operations Insight - Performance Management v1.1 Linux Multilingual Base eAssembly
- IBM Netcool Operations Insight - Performance Management V1.1 Linux English
- IBM Netcool Operations Insight - Performance Management Quick Start Guide V1.1 Multilingual

Note: IBM Network Performance Insight is referred to as IBM Netcool Operations Insight - Performance Management in the media and they both refer to the same product capability.
Installing Network Performance Insight

Locating installation instructions for Network Performance Insight.

For step-by-step installation instructions, see *Installing Network Performance Insight*.
Chapter 2. Known problems

Provides the list of all current known problems with IBM Network Performance Insight, Version 1.1.0.

For a list of known issues and resolutions for IBM Network Performance Insight, Version 1.1.0, see Troubleshooting Network Performance Insight.

Support

IBM Electronic Support offers a portfolio of online support tools and resources that provides comprehensive technical information to diagnose and resolve problems and maintain your IBM products.

IBM has developed many smart online tools and proactive features that can help you prevent problems from occurring in the first place, or quickly and easily troubleshoot problems when they occur. IBM's improved personalization of support resources helps you focus on and be alerted to exactly the information and resources needed for efficient and effective problem prevention and resolution. For further information, see: [http://www.ibm.com/support/electronicsupport/about.html](http://www.ibm.com/support/electronicsupport/about.html)
Chapter 3. Service Management Connect

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


- 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:

Chapter 4. Technical information PDF library

Provides link to the product documentation in PDF format for convenient printing.

Documentation in PDF format for Network Performance Insight is available from here:
PDF documents for download
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