IBM Network Performance Insight 1.3.1
Document Revision R2E1

Release summary

IBM
Note
Before using this information and the product it supports, read the information in “Notices” on page 7.

This edition applies to version 1.3.1.0 of IBM® Network Performance Insight® and to all subsequent releases and modifications until otherwise indicated in new editions.

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About this information

Describes issues of importance to users of IBM Network Performance Insight, Version 1.3.1 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® Network Manager IP Edition
- IBM Tivoli Netcool/OMNibus
- Jazz® for Service Management

Network Performance Insight architecture

IBM Network Performance Insight is a network performance monitoring system. It offers both real-time and historical trends in network performance and interactive view on the network 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:
Network Performance Insight services

Network Performance Insight services 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. Currently, Network Performance Insight 1.3.1 consists of the following microservices:

**Foundation services**
- Dashboard
- DNS
- Event
- Manager
- Storage
- UI

**Entity Metric services**
- Cacti Collector
- Exporter
- Formula Service
- Entity Analytics
- SNMP Collector
- Threshold
• Tivoli Network Manager Collector

**Flow Metric services**

• Flow Analytics
• Flow Collector

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

**Network Performance Insight additional components**

Some of the additional components that are introduced in Network Performance Insight, V1.3.1 for enhanced functions are described here:

**Technology Packs**

A set of ready-to-use Technology Packs is provided to perform second-level discovery and polling of resources to collect entity metric data. These Technology Packs can help to collect standard SNMP metrics, IP SLA metrics, and Performance Metric OOTB Device Support metrics.

For more information, see *Installing the Technology Packs* section in *Installing and Configuring IBM Network Performance Insight*.

**Network Performance Insight Dashboards**

These interactive dashboards are the built-in, JSON-based dashboards suite that can display aggregated network data from Network Performance Insight database with the help of REST API calls. It supports a combination of data from multiple data sources.

This feature provides a wide variety of dashboards for Network Operators, Network Engineers, and Network Capacity Planners. These dashboards help in pinpointing the troubled resources and general resource performance. A number of web-based configuration options are available to control the data that is displayed on the dashboards.

For more information, see *Network Performance Insight Dashboards* section in *IBM Network Performance Insight: Product Overview*.

**Note:** Networks for Operations Insight is a solution extension of Netcool Operations Insight that includes the following components and products:

• Tivoli Network Manager
• Tivoli Netcool Configuration Manager
• Network Performance Insight
• Network Health Dashboard
• Device Dashboard
• Topology Search

**Hortonworks Data Platform components**

Hortonworks Data Platform (HDP®) 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 HDP® stack.

The features of HDP® that are used in Network Performance Insight:

• HDP®
• 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 increase
• 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:
  – Apache Hadoop
  – Apache Kafka
  – Apache Ambari
  – Apache Spark
  – Apache ZooKeeper

**Note:** Because Zookeeper requires a majority, it is best to use an odd number of machines. For example, with four machines ZooKeeper can 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**

Products that are integrated with Network Performance Insight 1.3.1:

**Cassandra**

It is available as a microservice that can be installed along with other microservices in Network Performance Insight. All the inventory metadata is stored in Cassandra.

**Jazz for Service Management**

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.

**IBM Tivoli Network Manager IP Edition**

Tivoli Network Manager provides first-level device discovery and polling of some standard SNMP metrics.

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

Netcool Operations Insight is powered by the fault management capabilities of IBM Tivoli Netcool/OMNibus. In Network Performance Insight, V1.3.1, Tivoli Netcool/OMNibus is an important part of the solution for monitoring the network threshold violations.

**Related information**

- IBM Network Performance Insight on IBM Knowledge Center
- Hortonworks Data Platform
- HDFS Architecture
- Apache Hadoop YARN
- Apache Kafka
- Apache Zookeeper
- IBM Networks for Operations Insight

**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.
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 https://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. Release summary


Contents
- Description
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Description

IBM Network Performance Insight is the Performance Management extension of the IBM Netcool Operations Insight solution. Network Performance Insight is well-suited to monitor and troubleshoot the complex enterprise networks by providing contextualized insights through correlated SNMP, Flow, and IP SLA data sources.

Note: IBM Network Performance Insight is available for IBM Netcool Operations Insight entitled customers only.

Table 1. Release update

<table>
<thead>
<tr>
<th>Version</th>
<th>Type of Release</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3.1</td>
<td>Availability of Network Performance Insight V1.3.1</td>
<td>June 2019</td>
</tr>
</tbody>
</table>

CAUTION: Before you attempt an installation of Network Performance Insight, you’re advised to read these release notes. Failure to consult these Release Notes® might result in a corrupted, incomplete, or failed installation.

What's new in Network Performance Insight

New features and functions available with Network Performance Insight 1.3.1.

WiFi dashboards
The following new Network Performance Insight Dashboards are introduced:
- WiFi Overview
- WiFi Client Count
- WiFi Interference and Noise Performance
These dashboards extend the integration coverage to Cisco Wireless Controller to provide visibility of WiFi network utilization and performance with the help of Co-Channel Interference (CCI) and Adjacent Channel Interference (ACI) metrics.

Metrics and formulas for these dashboards are provided with the help of wifi-health-cisco-1.0.0.jar Technology Pack.

**Modernized user interface to visualize the Network Performance Insight Dashboards**

The new user interface has the following advanced features:

- Angular framework for Network Performance Insight Dashboards Engine
  - Angular is a TypeScript-based open source front-end web application platform that has a single framework for all devices.
- Dashboards can be visualized on multiple form-factors like Mobile and Tablet devices.
- Data rendering speed is increased. Dashboard data is not stored in Derby database.
- TimeZoom feature
  - You can manage to visualize the time ranges of at the widget-level. This feature is applicable for NetFlow dashboards only.
- Themes to customize the appearance of the dashboards to fit your specific needs.

  - Classic
  - Carbon
  - Charcoal
  - Daisy
  - Jade
  - Pearl
  - Pine
  - Scarlet
  - Sepia

**Monitoring QoS with Class-Based Quality of Service (CBQoS) Technology Packs for Cisco, Juniper, and Huawei**

In addition to NetFlow and IPSLA monitoring, Network Performance Insight Dashboards is extended to monitor CBQoS metrics on Cisco, Juniper, and Huawei devices. As more companies deploy VoIP and video conferencing, CBQoS is helpful to show how these applications are delivered across an infrastructure with defined policies. The metrics from the following technology packs provide the insight into the critical applications utilization for an organization:

- network-qos-cisco-1.0.0.jar
- network-qos-huawei-1.0.0.jar
- network-qos-juniper-1.0.0.jar

**New and updated technology packs**

1.3.1 has new and updated technology packs that provide additional performance monitoring functions.

For more information, see *Installing the Technology Packs* section in *Installing and Configuring IBM Network Performance Insight*.

**Upgrade support**

Upgrade is possible from Network Performance Insight 1.3.0 to 1.3.1.

For more information, see *Upgrading IBM Network Performance Insight*.

**Unsupported features**

Some features from previous releases that are no longer supported are as follows:
- **System Administration > Preferences > User Preferences** option are removed from Network Performance Insight Dashboards. Therefore, you cannot change the auto refresh time, CSV separator, and configure the look and feel of the exported dashboards.
- Inventory schema tables are removed from the Storage Service and are now stored in Cassandra. You can view the data from these tables by using the following URL: http://<hostname>:26081/ui/table#
- SNMP Discovery Service is no longer needed. Therefore, it is removed from the installation media.

Where, `<hostname>` is the host name of the Network Performance Insight node.

### Supported network technology and devices
Functions that are supported by Network Performance Insight.

**Table 2. Supported Network Performance Insight functions**

<table>
<thead>
<tr>
<th>Functions</th>
<th>Value</th>
</tr>
</thead>
</table>
| Supported flow formats                   | • Cisco NetFlow (V1, V5, and V9) and Flexible NetFlow  
• Juniper J-Flow (V5 and V9)  
• Huawei NetStream (V5 and V9)  
• Alcatel CFFlow (V9)  
• IPFIX                                      |
| IP SLA                                   | • Cisco  
• Huawei  
• Juniper                                     |
| Class-Based QoS                          | • Cisco  
• Huawei  
• Juniper                                     |
| Supported Internet Protocol versions     | • IPv4  
• IPv6                                      |
|   **Note:** The open source Hadoop is not compliant with IPv6. Therefore, IPv6 is not supported on Network Performance Insight servers network. But IPv6 is supported on monitored devices. |
| Supported flow transport protocols       | • UDP  
• SCTP                                      |
|   **Note:** You must configure your SELinux to support the SCTP protocol. |
| Application Visibility and Control (AVC) supported Cisco devices | • Cisco Aggregation Services Routers (ASR) 1000 Series, Cisco ISR 4000 Series  
• Cisco Cloud Services Router (CSR) 1000V, Cisco Integrated Service Routers Generation 2 (ISR G2) |
Table 2. Supported Network Performance Insight functions (continued)

<table>
<thead>
<tr>
<th>Functions</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported Cisco Wireless Controllers</td>
<td>• Cisco 2504 Wireless Controller&lt;br&gt;• Cisco 3504 Wireless Controller&lt;br&gt;• Cisco 5508 Wireless Controller&lt;br&gt;• Cisco 5520 Wireless Controller</td>
</tr>
</tbody>
</table>

Compatibility with Netcool Operations Insight

Integrated components and their supported versions in Netcool Operations Insight V1.6.

The following components from Netcool Operations Insight are required to work with Network Performance Insight:

• Tivoli Network Manager
• Tivoli Netcool/OMNIbus
• Device Dashboard
• Network Health Dashboard

For all the latest compatible versions of these components, see Product and component version matrix.

System requirements

The system requirements for the IBM Network Performance Insight installations.

For more information about system requirements for the IBM Network Performance Insight, Version 1.3.1, see Requirements.

See the detailed system requirements for Netcool Operations Insight from Software Product Compatibility Reports (SPCR) and search for IBM Netcool Operations Insight:


Media content

Network Performance Insight consists of the following general media packages:

Important: 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.

Table 3. Part numbers for Network Performance Insight 1.3.1

<table>
<thead>
<tr>
<th>Component description</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netcool Operations Insight - Performance Management V1.3.1 Linux Multilingual Base eAssembly</td>
<td>CJ5N6EN</td>
</tr>
<tr>
<td>Netcool Operations Insight - Performance Management V1.3.1 Linux Multilingual</td>
<td>CC29WML</td>
</tr>
<tr>
<td>Netcool Operations Insight - Performance Management Quick Start Guide V1.3.1 Multilingual</td>
<td>CC29XML</td>
</tr>
</tbody>
</table>
For part numbers of other integrated IBM Netcool Operations Insight V1.6 components, see Product and component version matrix.

**Installing Network Performance Insight**

Simplified installation with the help of some installation scripts. For step-by-step installation instructions, see *Installing and Configuring IBM Network Performance Insight*.

**Known issues**

Provides the list of all current known problems and issues with IBM Network Performance Insight, Version 1.3.1.

For a list of known issues and resolutions for IBM Network Performance Insight, Version 1.3.1, see *Troubleshooting IBM Network Performance Insight*.

**IBM Developer community**

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

Use the developerWorks® community in the following ways:

- Become involved with transparent development, an ongoing, open engagement between other users and developers of Network Performance Insight. You can access early designs, sprint demonstrations, product roadmap, 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.

IBM Network Performance Insight community on developerWorks

**Technical information PDF library**

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

**Support**

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