IBM Network Performance Insight 1.3
Document Revision R2E1

Release summary
Before using this information and the product it supports, read the information in "Notices" on page 9.
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About this information

Describes issues of importance to users of IBM® Network Performance Insight®, Version 1.3 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 consists of the following microservices:

**Foundation services**
- 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
SNMP Discovery

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 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:

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, 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
- Apache Hadoop YARN
- IBM Netcool Operations Insight
- IBM Tivoli Network Manager IP Edition

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, multicolored 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
Release summary

Release summary for IBM Network Performance Insight, Version 1.3.

Contents

- Description
- What’s new in Network Performance Insight
- Supported network technology and devices
- Compatibility with Netcool Operations Insight
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- Known issues
- Developer Works (dW) community
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- Support

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</td>
<td>Availability of Network Performance Insight V1.3</td>
<td>September 2018</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.

Synergy between Network Performance Insight and Tivoli Network Manager for network operations

Starting from V1.3 onwards, high scale Tivoli Network Manager Collector Service is used to extend the discovery and polling capability of Tivoli Network Manager to a finer detail. Metric record collection is increased beyond 20 million.
Network Performance Insight provides a set of ready-to-use Technology Pack content that includes the following components:

- Discovery formulas
- Collection formulas
- Performance Metric OOTB Device Support metrics
- Standard and vendor-specific MIB files

Collected metrics from polling are stored in the timeseries database.

**Second-level discovery**

First-level discovery is performed by Tivoli Network Manager and the device information along with device credentials are obtained by Network Performance Insight. Network Performance Insight discovers the resources from the devices and stores the information in the INVENTORY tables.

For more information, see Discovering the network section in IBM Network Performance Insight: Network Operations.

**Polling SNMP metrics**

Performance Metric OOTB Device Support (vendor-specific device health) metrics can now be polled by Network Performance Insight.

For more information, see Polling the network section in IBM Network Performance Insight: Network Operations. Polling interval for Network Performance Insight collected metrics can be configured from system configuration page.

For more information, see section in Installing and Configuring IBM Network Performance Insight.

**Rapid SNMP device onboarding**

It is a new feature that is introduced in Network Performance Insight V1.3 to monitor the performance of new devices such as routers, switches, and servers that are brought into a network environment.

Rapid onboarding for new SNMP devices that are introduced in the network can be completed within 1 day in a smooth and seamless manner. Within this period, the required discovery formulas, collection formulas, and metrics can be created and deployed for Network Performance Insight to start discovery and polling.

For more information, see Rapid SNMP device onboarding section in IBM Network Performance Insight: Network Operations.

**Larger performance data collection and storage**

High-scale Tivoli Network Manager Collector Service and timeseries database with the help of Timeseries Service can scale the SNMP performance metric record collection and storage to 100 million records per hour.

For more information about Timeseries Service and Tivoli Network Manager Collector, see IBM Network Performance Insight: Product Overview.

**Enhancements to Network Performance Insight Dashboards**

The following enhancements are done on the visualizations:

- The following new dashboards are introduced to visualizations:
  - Applications Response Overview
Applications Response Overview dashboard displays the overview of the worst performing application-target server pairs based on the Application Response Time metrics.

- **HTTP Operations**
  
  On Demand filtering - HTTP Operations dashboard displays the web page response time between a Cisco device and an HTTP server that is measured from round-trip time (RTT).

- **Timeseries Data**
  
  On Demand filtering - Timeseries Data dashboard displays SNMP performance metrics from Timeseries database. When new devices are configured and added to the network as part of Rapid SNMP device onboarding, you can view the performance metrics collected from the device in real time.

  **Attention:** Data retrieval for Timeseries Data dashboard is dramatically improved and the response time is as low as 1 second.

- The following dashboards are updated to introduce filtering based on business hours per a configured geographical area:
  - Network Performance Overview
  - Network Performance Overview by Deviation
  - Network Traffic Overview

  A new system configuration page is introduced, where you can configure to categorize your enterprise network based on different geographical areas to sites by specifying the IP address ranges and business hours and non-business hours. Data can then be filtered based on the sites for business hours.

  For more information, see *Configuring site grouping* section in *Installing and Configuring IBM Network Performance Insight*.

  For more information, see *Network Performance Insight Dashboards* section in *Using IBM Network Performance Insight*.

**Quality of Service (QoS) monitoring support for Huawei and Juniper devices**

QoS monitoring support is extended to Huawei (NQA) and Juniper (RPM) devices along with Cisco (IP SLA).

**Note:** IP SLA is used as a generic term for Huawei NQA, Juniper RPM, and Cisco IP SLA.

Discovery for IP SLA-enabled devices is handled by Tivoli Network Manager. For more information, see *Supported IP SLA metrics* section in *IBM Network Performance Insight: References*.

**Note:** For performance monitoring with Cacti deployment scenario, only Cisco IP SLA metrics are supported.

**Network Performance Insight deployment scenarios**

The focus of this release is to address relevant Network Performance Insight deployment scenarios that customers might have:

- Network Performance Insight can complement Tivoli Network Manager for network management operations like discovery and polling.

  For more information, see *Scenario 1 - NetFlow data and performance data from Network Performance Insight* in *Installing and Configuring IBM Network Performance Insight*.

- Network Performance Insight serves as second-level Performance Manager to Cacti, which is an open source performance monitoring
software. Cacti’s database is based on RRDtool. Data is stored in circular buffer in the RRDtool and is overwritten periodically. Network Performance Insight provides longer Cacti data retention for historical analysis and capacity planning.

For more information, see Scenario 2 - NetFlow data and Performance data from Cacti in Installing and Configuring IBM Network Performance Insight.

- Network Performance Insight can now be installed without requiring Tivoli Network Manager from Network Management extension of Netcool Operations Insight solution.

In this scenario, Network Performance Insight is used to collect NetFlow data only. This deployment scenario provides Netcool Operations Insight customers an easier installation path.

For more information, see Scenario 3 - NetFlow only data section in Installing and Configuring IBM Network Performance Insight.

**Upgrade support**

Upgrade is possible from Network Performance Insight 1.2.3 to 1.3.

For more information, see Upgrading IBM Network Performance Insight.

**Documentation addendum**

Documentation updates that are handled between releases are documented in documentation addendum from here:

[Documentation addendum on IBM developerWorks®](https://www.ibm.com/developerworks)

The English documentation always contains the most up-to-date information.

**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>
<tbody>
<tr>
<td>Supported flow formats</td>
<td>• Cisco NetFlow (V1, V5, and V9) and Flexible NetFlow</td>
</tr>
<tr>
<td></td>
<td>• Juniper J-Flow (V5 and V9)</td>
</tr>
<tr>
<td></td>
<td>• Huawei NetStream (V5 and V9)</td>
</tr>
<tr>
<td></td>
<td>• Alcatel CFlow (V9)</td>
</tr>
<tr>
<td></td>
<td>• IPFIX</td>
</tr>
<tr>
<td>IP SLA</td>
<td>• Cisco</td>
</tr>
<tr>
<td></td>
<td>• Huawei</td>
</tr>
<tr>
<td></td>
<td>• Juniper</td>
</tr>
<tr>
<td>Supported Internet Protocol versions</td>
<td>• IPv4</td>
</tr>
<tr>
<td></td>
<td>• IPv6</td>
</tr>
<tr>
<td><strong>Note:</strong> 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.</td>
<td></td>
</tr>
</tbody>
</table>
Table 2. Supported Network Performance Insight functions (continued)

<table>
<thead>
<tr>
<th>Functions</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported flow transport protocols</td>
<td>• UDP</td>
</tr>
<tr>
<td></td>
<td>• SCTP</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> You must configure your SELinux to support the SCTP protocol.</td>
</tr>
<tr>
<td>Application Visibility and Control (AVC) supported Cisco devices</td>
<td>• Cisco Aggregation Services Routers (ASR) 1000 Series, Cisco ISR 4000 Series</td>
</tr>
<tr>
<td></td>
<td>• Cisco Cloud Services Router (CSR) 1000V,</td>
</tr>
<tr>
<td></td>
<td>Cisco Integrated Service Routers Generation 2 (ISR G2)</td>
</tr>
</tbody>
</table>

**Compatibility with Netcool Operations Insight**

Integrated components and their supported versions in Netcool Operations Insight V1.5.

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 Version 1.5 section in Release details.

**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, 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

<table>
<thead>
<tr>
<th>Component description</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netcool Operations Insight - Performance Management V1.3 Linux Multilingual Base eAssembly</td>
<td>CJ47MEN</td>
</tr>
<tr>
<td>Netcool Operations Insight - Performance Management V1.3 Linux Multilingual</td>
<td>CNVI6ML</td>
</tr>
<tr>
<td>Netcool Operations Insight - Performance Management Quick Start Guide V1.3 Multilingual</td>
<td>CNVI7ML</td>
</tr>
</tbody>
</table>

For part numbers of other integrated IBM Netcool Operations Insight V1.5 components, see Version 1.5 section in [Release details](#).

### 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.

For a list of known issues and resolutions for IBM Network Performance Insight, Version 1.3, see [Troubleshooting IBM Network Performance Insight](#).

### developerWorks community

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

Use developerWorks community 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 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](#)
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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.

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https://support.podc.sl.edst.ibm.com/support/home/
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