Release summary
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 1.2.0 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® 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.

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:
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
- Apache Hadoop YARN
- Apache Kafka
- Apache Zookeeper
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 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, multicolour 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...
• 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 1.2.0 is available. New product features, compatibility, known problems, installation, and other getting-started issues are addressed in this release summary.

Attention: 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>1.2.0</td>
<td>Availability of Network Performance Insight 1.2.0.</td>
<td>September, 2016</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.

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)</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>Note:</td>
<td>Supports MIB-II data from these devices via Tivoli Network Manager.</td>
</tr>
<tr>
<td>Supported Internet Protocol versions</td>
<td>• IPv4</td>
</tr>
<tr>
<td></td>
<td>• IPv6</td>
</tr>
<tr>
<td>Note:</td>
<td>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>
</tr>
<tr>
<td>Supported flow transport protocol</td>
<td>• UDP</td>
</tr>
</tbody>
</table>
Top features of Network Performance Insight

Some important features in IBM Network Performance Insight, Version 1.2.0.

Some top features of Network Performance Insight:

- Supported on Red Hat Enterprise Linux 7.2.
- Shift to microservices architecture. Network Performance Insight system contains the following microservices that communicate with each other:
  - Manager
  - Storage
  - DNS
  - Event
  - UI
  - Network Manager Collector
  - Entity Analytics
  - Threshold
  - Flow Collector
  - Flow Analytics
- Installed along with IBM Open Platform with Apache Spark and Apache Hadoop for deploying and maintaining Hadoop clusters and scale by adding or removing nodes as needed. The Hadoop Distributed File System (HDFS) comes with IBM Open Platform with Apache Spark and Apache Hadoop as your distributed file system. HDFS allows applications to run across multiple servers. HDFS is highly fault tolerant, runs on low-cost hardware, and provides high-throughput access to data.
- Simple installation and web-based configurations.
- Interactive dashboards with drill-down support to device 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 database. 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 for raw and aggregated data. Supports 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.
- Efficient database backup and restore options.

Metric level data is collected and stored from Tivoli Network Manager discovery and polling. Topology data from Tivoli Network Manager is also stored and advanced analytics of data is provided for comprehensive monitoring of session and device data.
Compatibility with Netcool Operations Insight

Integrated components and their supported versions in Netcool Operations Insight.

Table 3. Compatibility between Network Performance Insight and Netcool Operations Insight solution

<table>
<thead>
<tr>
<th>Network Performance Insight versions</th>
<th>Netcool Operations Insight versions</th>
<th>Integrated components</th>
</tr>
</thead>
</table>
| 1.2.0                                | 1.4.0.3                            | • Tivoli Network Manager 4.2.0.1  
|                                      |                                    | • Tivoli Netcool/OMNIbus core 8.1.0.8  
|                                      |                                    | • Tivoli Netcool/OMNIbus Web GUI 8.1.0.7 |
| 1.1.1                                | 1.4.0                              | • Tivoli Network Manager 4.2.0  
|                                      |                                    | • Tivoli Netcool/OMNIbus core 8.1.0.5  
|                                      |                                    | • Tivoli Netcool/OMNIbus Web GUI 8.1.0.4 |
| 1.1.0                                | 1.3.1                              | • Tivoli Netcool/OMNIbus core 8.1.0.5  
|                                      |                                    | • Tivoli Netcool/OMNIbus Web GUI 8.1.0.4 |

What's new in Network Performance Insight

Learn about these new features and functionality available with Network Performance Insight 1.2.0.

Installation enhancements

• Network Performance Insight is installed with IBM Open Platform with Apache Spark and Apache Hadoop by using IBM Installation Manager for clustering and horizontal scalability.

  For more information, see Installing Network Performance Insight.

• All IBM Netcool Operations Insight dashboards are started on Dashboard Application Services Hub. Traffic Details widget is federated on Dashboard Application Services Hub during installation of Network Performance Insight automatically.

  For more information, see Installing Network Performance Insight in GUI mode section from Installing IBM Network Performance Insight.

• The architecture of Network Performance Insight is changed in the current release. Network Performance Insight microservices architecture. Network Performance Insight has multiple individual microservices that work together. Microservices is a way of breaking large software projects into loosely coupled modules, which communicate with each other through simple APIs. This architecture is more scalable, improves fault isolation, and gives the flexibility to work with different technologies.

  For more information, see Network Performance Insight architecture in Product overview.
Usability enhancements

- Web user interface based configurations. With Ambari implementation, all process control and configuration can be done through Ambari web interface. Ambari provides an intuitive and easy-to-use Hadoop management web UI that is backed by its collection of tools and APIs that simplify the operation of Hadoop clusters.
  
  For more information, see Configuring Network Performance Insight.
  
- Big data readiness with IBM Open Platform with Apache Spark and Apache Hadoop.

Performance enhancements

Network Performance Insight also includes high-bandwidth Kafka messaging bus that supports end to end data integration and distribution.

Network performance monitoring enhancements

Provides a comprehensive IP network analysis with session data monitoring and analysis. Provides performance analytics and improved network performance support by integrating Tivoli Network Manager discovery and poller. Network Performance Insight database schema is modified to store the data that is collected from Tivoli Network Manager discovery and poller along with Flow traffic data.

What's new for developers

Provides REST API definitions to supply data to Netcool Operations Insight dashboards. Network diagnosis is possible in three clicks; detect, isolate, and diagnose. Consolidated data from multiple technologies on a single dashboard is possible by integrating Flow data and SNMP data.

For more information, see REST API definitions in Network Performance Insight

Discontinued features

REST API configurations to send events to IBM Tivoli Netcool/OMNibus are unsupported. Use the Standard Input probe that is bundled and installed with Network Performance Insight. You do not require additional configurations to use the Standard Input probe.

Unsupported features

Currently, upgrade from older versions to 1.2.0 is not supported. There are significant differences in the architecture and underlying technologies from the earlier releases.

Note: Make sure that you remove Network Performance Insight V1.1.1 before you install 1.2.0.

Related concepts:

- "Top features of Network Performance Insight" on page 2
- Some important features in IBM Network Performance Insight, Version 1.2.0.
Product 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. It also reports network performance data for complex, multivendor, multi-technology networks.

For more information, see IBM Network Performance Insight: Product Overview.

System requirements

The system requirements for the IBM Network Performance Insight, Version 1.2.0 installations.

For information about system requirements for the IBM Network Performance Insight, Version 1.2.0, see Requirements.

See the detailed system requirements for Netcool Operations Insight 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 1.2.0 media listing.

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>
<thead>
<tr>
<th>Component description</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netcool Operations Insight - Performance Management V1.2.0 Linux Multilingual Base eAssembly</td>
<td>CJ0S4ML</td>
</tr>
<tr>
<td>Netcool Operations Insight - Performance Management V1.2.0 Linux Multilingual</td>
<td>CNEK5ML</td>
</tr>
<tr>
<td>Netcool Operations Insight - Performance Management Quick Start Guide V1.2.0 Multilingual</td>
<td>CNEG3ML</td>
</tr>
</tbody>
</table>

For part numbers of other integrated IBM Netcool Operations Insight 1.4.0.3 components, see Netcool Operations Insight download document.
Chapter 2. Installing Network Performance Insight

Locating installation instructions for Network Performance Insight.

Network Performance Insight 1.2.0 is a simple installation that uses IBM Installation Manager.

For step-by-step installation instructions, see Installing Network Performance Insight.

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 v1.2.0, see Suggested node and services layout in a multi-node cluster in Installing IBM Network Performance Insight.
Chapter 3. Known problems

Provides the list of all current known problems with IBM Network Performance Insight, Version 1.2.0.

For a list of known issues and resolutions for IBM Network Performance Insight, Version 1.2.0, see Troubleshooting IBM 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.

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Chapter 4. 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
Chapter 5. 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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