Before using this information and the product it supports, read the information in "Notices" on page 11.

This edition applies to version 1.2.2.0 of IBM Network Performance Insight and to all subsequent releases and modifications until otherwise indicated in new editions.

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Upgrading

Upgrade your IBM® Network Performance Insight 1.2.1.1 system to 1.2.2 version. This information does not cover the upgrade steps that are required for other supported components of Netcool Operations Insight.

Before you begin

- Download and extract the Network Performance Insight software. See Downloading and extracting the Network Performance Insight software section in Installing and Configuring IBM Network Performance Insight.
- Make sure that the Ambari server is running and the cluster nodes are all working correctly.
- Back up existing Network Performance Insight data.
  For more information, see Network Performance Insight backup and restore in Administering IBM Network Performance Insight.

About this task

After the upgrade is successful, the following new features are installed:
- Network Performance Insight Dashboards Engine. This application is installed and configured during the upgrade process.

A diagrammatic representation of the tasks that are involved in Network Performance Management upgrade.
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 1.2.2 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
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 1.2.2 consists of the following microservices:

Foundation services
- Manager
- DNS
- Event
- Storage
• UI

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

**Flow Metric services**
- Flow Collector
- Flow Analytics

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 V1.2.2 for enhanced functions are described here:

**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

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

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 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 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:
  - 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 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 1.2.2:

**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 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**

Netcool Operations Insight is powered by the fault management capabilities of IBM Tivoli Netcool/OMNibus. In Network Performance Insight V1.2.2, 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](#)
- [IBM BigInsights 4.2 documentation](#)
- [HDFS Architecture](#)
- [Apache Hadoop YARN](#)
- [Apache Kafka](#)
Service Management Connect

Connect, learn, and share with Service Management professionals and 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 [https://www.ibm.com/software/support/isa](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. Upgrading Network Performance Insight

Manually, run the upgrade script to update to Network Performance Insight V1.2.2.

About this task

Follow these steps to upgrade Network Performance Insight 1.2.1.1 cluster to 1.2.2:

Procedure

1. Run the following script at the Ambari server host:

```bash
cd bin/upgrade/
./npi_upgrade.sh -baseInstaller=<DIST_DIR>
```

<DIST_DIR> must contain the 1.2.1-TIV-NPI-FP0001.tgz package.

**Note:** Make sure to run the script from 1.2.2 installation media.

2. Check the upgrade progress from the log files in /bin/upgrade/ directory.

The following information is collected in the log file:

- Intermediate processing files:
  - prep_out/all_hosts.out
    Cluster host names that are registered on Ambari server.
  - prep_out/cluster_name.out
    The name of the Network Performance Insight cluster to be upgraded.
  - prep_out/comp_of_base_version_<host_name>.out
    Network Performance Insight and Kafka services and components that are installed on <host_name>.

  **Note:** A separate comp_of_<host_name>.out file is generated for every host in your cluster.

- prep_out/npi_rpms.out
  - <YYYYMMDDHHmm>/ folder contains the following files:
    - all_hosts.out
    - auto_upgrade_<host_name>.sh
      Script that is used to erase or install Network Performance Insight and Kafka services on <host_name>.

  **Note:** A separate auto_upgrade_<host_name>.sh file is generated for every host in your cluster.

- basecamp-installer-tools.update.log
- basecamp-repo.update.log
- cluster_name.out
- comp_of_<host_name>.out
- kafka_state_<timestamp>.out
- kafka_state.out
- kafka_stopping_msg.out
- npi-ambari.update.log
- npi_delta_rpms.out
- npi-repo.update.log
- npi_state_<timestamp>.out
- npi_state.out
- npi_stopping_msg.out
Chapter 2. Post upgrade tasks

A set of tasks that must be performed after you complete the upgrade.

Verifying the upgrade

Complete the steps that are listed here to verify that the upgrade to Network Performance Insight V1.2.2 is successful.

About this task

Procedure

Run the following `yum` command to list all the installed packages in the current version:

```
yum list installed | egrep "npi|basecamp"
```

Sample output:

```
# yum list installed | egrep "npi|basecamp"
apr.x86_64 1.5.2-<build_signature>  @npi
apr-util.x86_64 1.5.2-<build_signature>  @npi
basecamp-connect.noarch 1.2.2-<build_signature>  @npi-1.2.2
basecamp-entity-analytics.noarch 1.2.2-<build_signature>  @npi-1.2.2
basecamp-installer-tools.noarch 1.2.2-<build_signature>
@/basecamp-installer-tools-1.2.2-<build_signature>.noarch
basecamp-jre.x86_64 1.2.2-<build_signature>  @npi-1.2.2
basecamp-manager.noarch 1.2.2-<build_signature>  @npi-1.2.2
basecamp-repo.noarch 1.2.2-<build_signature>
@/basecamp-repo-1.2.2-<build_signature>.noarch
basecamp-schema-registry.noarch 1.2.2-<build_signature>  @npi-1.2.2
basecamp-spark.noarch 1.2.2-<build_signature>  @npi-1.2.2
basecamp-storage.noarch 1.2.2-<build_signature>  @npi-1.2.2
basecamp-tools.noarch 1.2.2-<build_signature>  @npi-1.2.2
httpd.x86_64 2.4.18-<build_signature>  @npi
mailcap.noarch 2.1.31-<build_signature>  @npi
npi-ambari.noarch 1.2.2-<build_signature>
@/npi-ambari-1.2.2-<build_signature>.noarch
npi-dns.noarch 1.2.2-<build_signature>  @npi-1.2.2
npi-flow-analytics.noarch 1.2.2-<build_signature>  @npi-1.2.2
npi-flow-collector.noarch 1.2.2-<build_signature>  @npi-1.2.2
npi-formula.noarch 1.2.2-<build_signature>  @npi-1.2.2
npi-itnm-collector.noarch 1.2.2-<build_signature>  @npi-1.2.2
npi-repo.noarch 1.2.2-<build_signature>
@/npi-repo-1.2.2-<build_signature>.noarch
npi-snmp-collector.noarch 1.2.2-<build_signature>  @npi-1.2.2
npi-threshold.noarch 1.2.2-<build_signature>  @npi-1.2.2
postgresql.x86_64 9.2.14-<build_signature>  @npi
postgresql-libs.x86_64 9.2.14-<build_signature>  @npi
postgresql-server.x86_64 9.2.14-<build_signature>  @npi
```
Starting Network Performance Insight and Kafka services

Start all the Network Performance Insight and Kafka services.

Procedure

1. Log in to Ambari server dashboard.
   Use the following default URL: http://<myserver.ibm.com>:8080
   The default user name is admin, and the default password is admin.

Starting the Kafka Services.
2. Click Services > Kafka.
3. Select Start from the Service Actions list.

Starting Network Performance Insight services
4. Click Services > NPI.
5. Select Start from the Service Actions list.

What to do next

Stop Ambari agents on all cluster hosts.

For more information, see Controlling the Ambari server and Ambari agent services in Administering IBM Network Performance Insight.

Creating dashboarduser group and assigning users

Create the dashboarduser group and add the group to the user registry. You can search for and display a list of existing users that match your search criteria. Then, add the required users to the dashboarduser group.

Procedure

1. Log in to the Dashboard Application Services Hub portal.
2. Expand Console Settings > WebSphere Administrative Console.
3. Click Launch WebSphere Administrative Console.
4. On the side pane, click Users and Groups > Manage Groups.
5. Specify the following details:
   Group name
   Type a name that is used to identify the group. Enter dashboarduser.
   Description
   Optional: Type a brief description for the group to distinguish this group from other groups. The description must be an alphanumeric, case-insensitive string with characters that are part of the local code set.
6. Click Create.
   If successful, a message is displayed to indicate that the group is created.
7. Click dashboarduser from the list of groups in Manage Groups page.
8. Click Members and click Add Users.
9. Click Search to display the available users.
10. Select npiadmin and npiuser from the search result and click Add.
11. Log out of Dashboard Application Services Hub portal and clear your browser cache.
12. Log in to the Dashboard Application Services Hub portal again with npiadmin user and password. For example, netcool.

Use the following URL format to access Dashboard Application Services Hub:
https://<myserver.ibm.com>:16311/ibm/console
You can now access all the Network Performance Insight Dashboards.

What to do next

Perform the following steps for working with Network Performance Insight Dashboards that are described in Administering IBM Network Performance Insight:
1. Grant permission to role to access the dashboards.
2. Add users to access the Network Performance Insight Dashboards.
3. Access the Network Performance Insight Dashboards from Dashboard Application Services Hub.

Optional: Configuring Ambari agent hosts for non-root access

This step is required only if you want to configure your Ambari agent hosts for non-root access. Perform these steps on all Ambari agent hosts in your cluster.

Before you begin

Copy the script /opt/IBM/basecamp/basecamp-installer-tools/ambari/agent_setup_nonRoot.sh from Ambari server host to each Ambari agent node in your cluster to a temporary location. For example, /tmp/agent_setup_nonRoot.sh.

Procedure

1. Log in to an Ambari agent node as root user.
2. Stop the Ambari agent by using the following command:
   ```
   service ambari-agent stop
   ```
3. Run the agent_setup_nonRoot.sh script as follows:
   ```
   /tmp/agent_setup_nonRoot.sh
   ```
   The script performs the following functions:
   - Creates the ambari user.
   - Updates the /etc/sudoers file to add new sudo permissions for the Ambari non-root user, that is ambari.
   - Updates the /etc/ambari-agent/conf/ambari-agent.ini to run as user ambari.
4. Start the Ambari agent by using the following command:
   ```
   service ambari-agent start
   ```
5. Repeat these steps on all Ambari agent hosts.
Chapter 3. Rolling back an upgrade

Use these steps to roll back your Network Performance Insight 1.2.2 to 1.2.1.1.

Before you begin

Before you roll back the upgrade, do the following tasks:

- Make sure that Network Performance Insight 1.2.2 system is up and running.

About this task

Follow these steps to roll back your upgrade to 1.2.1.1:

Procedure

1. Run the following command on Ambari server:
   ```
   cd /bin/upgrade
   ./npi_rollback.sh
   ```

2. Stop Network Performance Insight services from Ambari.
   - Click Services > NPI.
   - Select Stop from the Service Actions list.

3. Restart Ambari agents and Ambari server by using these commands:
   ```
   service ambari-agent restart
   service ambari-server restart
   ```

4. Click Services > NPI > Configs > Advanced > Advanced npi-env and put a comment in the npi-env template field.
   For example, #Rollback to previous version.

5. Click Save to save the configuration settings.

6. Restore the backup data.
   For more information, see Network Performance Insight backup and restore section in Administering IBM Network Performance Insight.

7. Stop Kafka Schema Registry as follows:
   - Click Hosts and select the host on which the Kafka Schema Registry must be stopped on Ambari server.
   - Select Kafka Schema Registry from Components list.
   - Click Stop from the Started list.

8. Delete the following Kafka topics:
   ```
   /usr/iop/4.2.0.0/kafka/bin/kafka-topics.sh --zookeeper <zookeeper_host>:2182 --delete --topic snapshot.npi.agg.win-mgr
   /usr/iop/4.2.0.0/kafka/bin/kafka-topics.sh --zookeeper <zookeeper_host>:2182 --delete --topic npi.agg.win-mgr
   /usr/iop/4.2.0.0/kafka/bin/kafka-topics.sh --zookeeper <zookeeper_host>:2182 --delete --topic _schemas
   ```

9. Start Kafka Schema Registry as follows:
   - Click Hosts and select the host on which the Kafka Schema Registry must be started on Ambari server.
   - Select Kafka Schema Registry from Components list.
   - Click Start from the Stopped list.

10. Start Network Performance Insight
a. Click **Services > NPI**.

b. Select **Start** from the **Service Actions** list.

**Console Integration** (illé) icon is now available on your Dashboard Application Services Hub portal.

11. Verify that the rollback is successful with this command:

```
  yum list installed | egrep "basecamp\|npi"
```

<table>
<thead>
<tr>
<th>Package</th>
<th>Version</th>
<th>Build Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>basecamp-connect.noarch</td>
<td>1.2.1.1-&lt;build_signature&gt;</td>
<td>@npi-1.2.1.1</td>
</tr>
<tr>
<td>basecamp-entity-analytics.noarch</td>
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<td>@npi-1.2.1.1</td>
</tr>
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<td>basecamp-httpd.noarch</td>
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<td>1.2.1.1-&lt;build_signature&gt;</td>
<td>@basecamp-installer-tools-1.2.1.1-&lt;build_signature&gt;.noarch</td>
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<tr>
<td>basecamp-jre.x86_64</td>
<td>1.2.1.1-0002.&lt;build_signature&gt;</td>
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<tr>
<td>basecamp-manager.noarch</td>
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<tr>
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<tr>
<td>basecamp-schema-registry.noarch</td>
<td>1.2.1.1-0085.&lt;build_signature&gt;</td>
<td>@npi-1.2.1.1</td>
</tr>
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<td>basecamp-spark.noarch</td>
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<td>@npi-1.2.1.1</td>
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</tr>
<tr>
<td>npi-dns.noarch</td>
<td>1.2.1.1-0085.&lt;build_signature&gt;</td>
<td>@npi-1.2.1.1</td>
</tr>
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<td>npi-event.i386</td>
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</tr>
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<td>@npi-1.2.1.1</td>
</tr>
<tr>
<td>npi-repo.noarch</td>
<td>1.2.1.1-0029.&lt;build_signature&gt;</td>
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<td>@npi-1.2.1.1</td>
</tr>
</tbody>
</table>
Chapter 4. Troubleshooting installation and upgrade

Problems that might occur during an installation and how to resolve them.

About this task

For all troubleshooting issues in installation of Network Performance Insight, see Troubleshooting installation, upgrade, and Network Performance Insight services section in Troubleshooting Network Performance Insight.

For all troubleshooting issues in deploying Ambari clusters, see Troubleshooting Ambari server section in Troubleshooting Network Performance Insight.

For all troubleshooting issues in integration of Network Performance Insight, see Troubleshooting integration with Tivoli Netcool/OMNibus section in Troubleshooting Network Performance Insight.
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