IBM Network Performance Insight 1.3.1
Document Revision R2E1

Upgrading Network Performance Insight
Note
Before using this information and the product it supports, read the information in “Notices” on page 21.

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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Upgrading

Upgrade your Network Performance Insight V1.3.0 system to V1.3.1. This information does not cover the upgrade steps that are required for other supported components of Netcool® Operations Insight.

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 1.3.1 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 1.3.1 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

### IBM Community

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

Access the IBM Network Performance Insight community. Use IBM 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 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.

**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. Upgrade paths

You can upgrade from 1.3.0 to 1.3.1 based on your existing installation scenario, and then upgrade to an applicable deployment type in 1.3.1.

A diagrammatic representation of the tasks that are involved in Network Performance Insight upgrade.
Chapter 2. Upgrading Network Performance Insight

Manually, run the `npi_upgrade.sh` script to update from Network Performance Insight 1.3.0 to V1.3.1.

**Before you begin**
Make sure that all the services are up and running and not in maintenance mode.

**About this task**
Follow these steps to upgrade Network Performance Insight 1.3.0 cluster to 1.3.1:

**Procedure**

1. Run the `npi_upgrade.sh` script that is available in the `<DIST_DIR>/NPI-1.3.1.0/bin/upgrade` at Ambari server host:

   ```
   cd <DIST_DIR>/bin/upgrade/
   ./npi_upgrade.sh <DIST_DIR> <ambari-admin-password> <ambari-db-password>
   ```

   Where:
   - `<DIST_DIR>` is the directory that contains Hortonworks Data Platform packages and Network Performance Insight 1.3.1 installation media.
   - `<ambari-admin-password>` is the default password to connect to Ambari, which is `admin`.
   - `<ambari-db-password>` is the default password to connect to Amabri database, which is `bigdata`.
   
   For example:
   ```
   ./npi_upgrade.sh /opt/IBM/Installers/NPI admin bigdata
   ```

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

   The following information is collected in the log file:
   - `cluster_name.out`
   - `all_hosts.out`
   - `comp_of_<myserver.ibm.com>.out`
   - `temp_comps_of_<myserver.ibm.com>.out`
   - `comp_of_<myserver.ibm.com>.out`
   - `npi_state.out`
   - `kafka_state.out`
   - `am_state.out`
   - `npi_stopping_msg.out`
   - `kafka_stopping_msg.out`
   - `ams_stopping_msg.out`
   - `npi_state_<timestamp>.out`
   - `kafka_state_<timestamp>.out`
   - `ams_state_<timestamp>.out`

**Results**
The following tasks are performed by the script:
- The following checks are done for availability and if the checks fail, the script exits:
- Checks whether the Hortonworks Data Platform packages are available or not.
- Checks whether the base version installed is 1.3.0.

• Runs backup for the following existing Network Performance Insight data:
  - 1.3.0.0 packages
  - Database data
  - Timeseries data
  - Dashboard Application Services Hub integration data
  - Network Performance Insight Dashboards data that is stored in H2 database.
  - Network Performance Insight Dashboards users
  - Ambari server database
  - Creates the backup_list file in /opt/IBM/basecamp/basecamp-installer-tools/PACKS folder that has a list of Technology Packs and their versions before the upgrade.

• Makes sure that the Network Performance Insight 1.3.1.0 packages are ready for upgrade.
• Makes sure that the base installer; Network Performance Insight 1.3.1.0 is ready for upgrade.
• Stops Network Performance Insight, Kafka, and Ambari Metrics Services on Ambari
• Upgrades the following Network Performance Insight 1.3.1.0 base packages to 2.6.2:
  - npi-repo
  - basecamp-repo
  - Ambari
  - basecamp-installer-tools
• Upgrades Ambari server, Ambari agent, Ambari Metrics to V2.6.2.
• Upgrades all Network Performance Insight microservices from 1.3.0.0 to 1.3.1.0

### Adding the additional services

Add the additional services that are specific to Network Performance Insight 1.3.1. This step is required during upgrade only.

**Before you begin**

For more information about the required microservices in different deployment scenarios, see *Required microservices in different installation scenarios* section in *Installing and Configuring IBM Network Performance Insight*.

<table>
<thead>
<tr>
<th>Installation scenario</th>
<th>Required services</th>
</tr>
</thead>
</table>
| Network Performance Insight to collect both NetFlow and SNMP data by integrating with either Tivoli Network Manager or Cacti. | • Cassandra  
  • Inventory  
  • Dashboard |
| Network Performance Insight to collect NetFlow data only                              | • Cassandra  
  • Inventory  
  • Dashboard |
Table 1. Required services to be added (continued)

<table>
<thead>
<tr>
<th>Installation scenario</th>
<th>Required services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extend Network Performance Insight that collects NetFlow data only to collect SNMP data by integrating with Tivoli Network Manager.</td>
<td>• Cassandra</td>
</tr>
<tr>
<td></td>
<td>• Inventory</td>
</tr>
<tr>
<td></td>
<td>• Dashboard</td>
</tr>
</tbody>
</table>

**Procedure**

1. Open a browser and access the 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.

Steps to add the Cassandra Service.

2. Click **Actions** > **Add Service** and select **Cassandra** on the **Choose Services** page.

3. Click **Next**.

4. On the **Assign Slaves and Clients** page, select **Cassandra** and click **Next**.

5. On the **Customize Services** page, click **Advanced cassandra-site**.

6. In the **seed_provider_parameters_seeds** field, enter the comma-separated list of host names (FQDN) of the nodes in your cluster to act as seed nodes.

   For example:
   "server1.ibm.com,server2.ibm.com"

   The information is saved to /etc/cassandra/default.conf/cassandra.yaml file.

   **Note**: By default, Cassandra is installed in /etc/cassandra directory of your Network Performance Insight nodes where you installed the Cassandra Service.

7. Review the configuration and click **Deploy**.

8. See the progress of the installation on **Install, Start, and Test** page.

   The progress bar at the top of the page gives the overall status and the main section of the page gives the status for each host. When you click the task, log for a specific task can be displayed.

9. Click **Next** after the services are installed successfully.

10. Review the completed tasks on the **Summary** page and click **Complete**.

11. Repeat the steps 2 - 11 on all hosts in your cluster.

Steps to add the Dashboard Service and Inventory Service.

12. On Ambari UI, click the + **Add** button on the **Summary** tab of the selected host.

13. Add the following services based on your installation scenario:

   - Dashboard
   - Inventory

14. Start all the following services in the order specified:

   **Note**: Cassandra Service starts automatically.

   - Ambari Metrics
   - Kafka
   - Manager
   - Inventory
   - Storage
15. Repeat the steps 13 - 14 on all hosts in your cluster.

---

**Upgrading the Technology Packs**

Use this information to upgrade the Technology Pack content that is available within Network Performance Insight V 1.3.1 installation media.

**Before you begin**

Make sure that the following services are up and running:

- Ambari Metrics
- Kafka
- Manager
- Inventory
- Storage
- Timeseries
- UI
- Dashboard

**About this task**

The following ready-to-use Technology Packs are available from the build after installation in `/opt/IBM/basecamp/basecamp-installer-tools/ootb-packs` directory:

- `load-balancer-f5BigIp-1.0.0.jar`
- `network-health-1.2.0.jar`
- `network-health-cisco-1.1.0.jar`
- `network-health-extension-1.3.0.jar`
- `network-health-generic-1.2.0.jar`
- `network-health-huawei-1.1.0.jar`
- `network-health-juniper-1.1.0.jar`
- `network-probe-cisco-1.0.0.jar`
- `network-probe-huawei-1.0.0.jar`
- `network-probe-juniper-1.0.0.jar`
- `network-qos-cisco-1.0.0.jar`
- `network-qos-huawei-1.0.0.jar`
- `network-qos-juniper-1.0.0.jar`
- `wifi-health-cisco-1.0.0.jar`

**Procedure**

1. Stop the Cassandra Service and Inventory Service by using the following steps:
   a) 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.
b) Click **Hosts** and select the host on which you need to upgrade the technology packs
c) On the **Inventory** component, click **Stop** from the list.
Stop the Inventory Service in all hosts in your cluster before you stop the Cassandra Service.
d) On the **Cassandra** component, click **Stop** from the list.
e) Repeat steps d in all Network Performance Insight nodes in your cluster.

2. **Upgrade the Technology Packs** by using the following commands:

   ```
cd <DIST_DIR>/NPI-1.3.1.0/bin/upgrade
./packs-update.sh
```

   The `packs-update.sh` script performs the following tasks:
   • Upgrades the installed Technology Packs from V1.3.0 to V1.3.1.
   • Installs the following new Technology Packs that are available in V1.3.1:
     – `network-probe-cisco-1.0.0.jar`
     – `network-probe-huawei-1.0.0.jar`
     – `network-probe-juniper-1.0.0.jar`
   
   **Note:** Use the `pack-install.sh` script to install the other Technology Packs that you require.
   
   For more information, see *Installing the Technology Packs* section in *Installing and Configuring IBM Network Performance Insight*.

3. **Restart the Cassandra Service** first that is followed by Inventory Service by using the following steps:
a) 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.
b) Click **Hosts** and select the host on which you need to upgrade the technology packs
c) On the **Cassandra** component, click **Start** from the list.
Start the Cassandra Service in all hosts in your cluster before you start the Inventory Service.
d) On the **Inventory** component, click **Start** from the list.
e) Repeat steps b to d in all Network Performance Insight nodes in your cluster.

---

**Optional: Upgrading Remote Flow Collector Service**

If you installed the Remote Flow Collector, use these steps to upgrade to the latest version.

**Procedure**

1. Copy the following script from `<DIST_DIR>` to `/temp` directory on the host where the Remote Flow Collector must be upgraded:
   ```
   <DIST_DIR>/CC29WML/NPI-1.3.1.0/bin/upgrade/npi_remote_flow_collector_upgrade.sh
   ```

2. Run the `remoteflowcollector-upgrade.sh` script as follows:
   ```
   ./npi_remote_flow_collector_upgrade.sh <yum-repo-server> <yum-repo-port>
   ```
   
   Where:
   • `<yum-repo-server>` is the server where the Ambari server is installed.
• `<yum-repo-port>` is the HTTPD port 9091 that is used by Ambari server for components installation in the cluster.

   

4. Restart the Flow Collector Service from Ambari web interface.
   
   a) Open a browser and access the 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.
   
   b) Click Service Actions > Restart Flow Collectors.

Optional: Upgrading Remote SNMP Collector Service

If you installed the Remote SNMP Collector, use these steps to upgrade to the latest version.

Before you begin

Stop the SNMP Collector and Formula Service by using the following commands

```
ps -ef | grep npi-snmp-collector
kil 1 -9 <pid>

ps -ef | grep npi-formula
kill -9 <pid>
```

Where, `<pid>` is process ID for the microservice.

About this task

For more information about installing the Remote SNMP Collector Service, see Installing and Configuring IBM Network Performance Insight.

Procedure

1. Copy the following script from `<DIST_DIR>` to `/temp` directory on the host where the Remote Flow Collector must be upgraded:

   • `<DIST_DIR>/CC29WML/NPI-1.3.1.0/bin/upgrade/npi_remote_snmp_collector_upgrade.sh`

2. Run the `npi_remote_snmp_collector_upgrade.sh` script from any Network Performance Insight node where the SNMP Collector Service and Formula Service are installed as follows:

   ```
   ./npi_remote_snmp_collector_upgrade.sh <host>
   ```

   Where:

   • `<host>` is the FQDN of the server where the Remote SNMP Collector is upgraded.

3. Start the microservices with the following commands:

   ```
   nohup bin/npi-snmp-collector &
   nohup bin/npi-formula &
   ```
Chapter 3. Post upgrade tasks

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

Before you begin
Make sure that only the following services are started:

- Manger
- Inventory
- Storage
- Timeseries
- UI
- Dashboard

About this task
Perform the following tasks according to your deployment scenario:

Procedure

- Verify that the upgrade is complete and successful.
- Run the post upgrade script.

Important: These steps are required in Integrate with Tivoli Network Manager to collect NetFlow and SNMP data installation scenario. For more information, see Installing and Configuring IBM Network Performance Insight

- Perform the discovery for Performance Metric OOTB Device Support metrics.
  For more information, see IBM Network Performance Insight: Network Operations.
- Perform the SNMP metric polling so that the data can be rendered on the dashboards.
  For more information, see IBM Network Performance Insight: Network Operations.

Verifying the upgrade

Complete the steps that are listed here to verify that the upgrade to Network Performance Insight V1.3.1 is successful.

Procedure

1. Verify that all services are installed by using the following steps:
   a) Access the 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.
   b) Click icon on the Ambari dashboard to check the status of the services installation.
   c) Wait until all the services are installed and started.
2. Run the following yum command to list all the installed packages in the current version:

```bash
yum list installed | egrep "npi\|basecamp\|ambari"
```
Running the post upgrade script

Run the post upgrade script that automates the tasks that are to be done after the upgrade is complete.

Procedure

1. Run the post_upgrade.sh script that is available in <DIST_DIR>/NPI-1.3.1.0/bin/upgrade as follows:

```bash
./post_upgrade.sh <storage_username> <storage_password> <ambari_admin_password> <migration_type>
```

Where:

- `<storage_username>` is the default user name to connect to the Storage Service, which is npiadmin.
- `<storage_password>` is the default password to connect to the Storage Service, which is netcool.
- `<ambari_admin_password>` is the default password to connect to Amabri UI, which is admin.
- `<migration_type>` is the type of data that must be migrated. The following options are available:
  - **cassandra**
    Use this flag to migrate SNMP data from Cassandra.
  - **inventory**
    Use this flag to migrate inventory data from Cassandra.
  - **user**
    Use this flag to migrate dashboard user data from H2 database to Derby.
- all
  Use this flag to migrate data from all data sources (cassandra, inventory, and user).

For example:

```
./post_upgrade.sh npiadmin netcool admin cassandra
```

2. Restart the Network Performance Insight services from Ambari web interface.
   a) Click Services > NPI.
   b) Click Service Actions > Restart All.

**Optional: 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.

**About this task**
Skip this task if the dashboarduser is available after you upgrade.

**Note:** You can configure more than one console integration on different Network Performance Insight hosts. The dashboard users created on the host that is used to configure the console integration are migrated after an upgrade. The dashboard users are specific to each host that is configured for a console integration.

**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. Click Create and 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.
7. If successful, a message is displayed to indicate that the group is created.
8. Click dashboarduser from the list of groups in Manage Groups page.
9. Click Members and click Add Users.
10. Click Search to display the available users.
11. Select npiadmin and npiuser from the search result and click Add.
12. Log out of Dashboard Application Services Hub portal and clear your browser cache.
13. Log in to the Dashboard Application Services Hub portal again with npiadmin user and password. For example, netcool.

   ```
   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 to work with Network Performance Insight Dashboards that are described in Administering IBM Network Performance Insight:

1. Grant permission to role to access the dashboards.
2. Create users to access the Network Performance Insight Dashboards from command line.
3. Access the Network Performance Insight Dashboards from Dashboard Application Services Hub.

Optional: Configuring Ambari server for non-root access

Perform these steps on the Ambari server host.

Procedure

1. Log in to the Ambari server host as root user.
2. Create a user name by using the following command:
   
   For example, ambari
   
   
   useradd ambari

3. Stop the Ambari server by using the following command:

   service ambari-server stop

4. Run the ambari-server setup command to see the following output and prompts:

   ambari-server setup
   Using python /usr/bin/python2
   Setup ambari-server
   Checking SELinux...
   SELinux status is 'disabled'
   Ambari-server daemon is configured to run under user 'root'.
   Change this setting [y/n] (n)? y
   Enter user account for ambari-server daemon (root):ambari
   Adjusting ambari-server permissions and ownership...
   Checking firewall status...
   Redirecting to /bin/systemctl status iptables.service
   Checking JDK...
   Do you want to change the current JDK [y/n] (n)?
   Completing setup...
   Configuring database...
   Enter advanced database configuration [y/n] (n)?
   Configuring database...
   Default properties detected. Using built-in database.
   Configuring ambari database...
   Checking PostgreSQL...
   Configuring local database...
   Connecting to local database...done.
   Configuring PostgreSQL...
   Backup for pg_hba found, reconfiguration not required
   Extracting system views...
   .......
   Adjusting ambari-server permissions and ownership...
   Ambari Server 'setup' completed successfully.

5. Start the Ambari server with the following command:

   service ambari-server start
Optional: Configuring Network Performance Insight nodes for non-root access

This step is required only if you want to configure your Network Performance Insight nodes for non-root access. Perform these steps on all Network Performance Insight nodes 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 Network Performance Insight node in your cluster to a temporary location. For example, /tmp/agent_setup_nonRoot.sh.

Procedure
1. Log in to an Network Performance Insight node as root user.
2. Stop the Network Performance Insight node by using the following command:

   ```bash
   service ambari-agent stop
   ```

3. Run the agent_setup_nonRoot.sh script as follows:

   ```bash
   /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 Network Performance Insight node by using the following command:

   ```bash
   service ambari-agent start
   ```

5. Repeat these steps on all Network Performance Insight nodes.
Chapter 4. Rolling back an upgrade

Use these steps to roll back your Network Performance Insight 1.3.1 to 1.3.0.

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

• Make sure that Network Performance Insight 1.3.1 system is up and running.
• Make sure the Network Performance Insight V1.3.0 backup copy is ready.

About this task
Typically, rollback must be done in the following scenarios:

• If the installation fails during upgrade
• If the services do not start after the installation due to cluster creation failures

Follow these steps to roll back your upgrade to 1.3.0:

Procedure

1. Run the following command on Ambari server:

   cd <DIST_DIR>/NPI-1.3.1.0/bin/upgrade
   ./npi_rollback.sh <DIST_DIR_OLD> <ambari-admin-password> <ambari-db-password>

   Where:
   • <DIST_DIR> is the directory where Network Performance Insight 1.3.1.0 installation media and Hortonworks Data Platform packages are available.
   • <DIST_DIR_OLD> is the location where 1.3.0 installation packages are available. For example, /opt/IBM/Installers/NPI.
   • <ambari-admin-password> is the default password to connect to Ambari, which is admin.
   • <ambari-db-password> is the default password to connect to Ambari database, which is bigdata.

   For example:

   ./npi_rollback.sh /opt/IBM/Installers/NPI admin bigdata

   The following tasks are done after the npi_rollback.sh is run:
   • Stops all services from Ambari.
   • Runs check base to see whether 1.3.1 content can be rolled back or not.
   • Validates the IBM Open Platform with Apache Spark and Apache Hadoop packages in 1.3.0<DIST_DIR> path that is provided in the rollback script.
   • Restores the npi.repo configuration from 1.3.1 to V1.3.0.
   • Restores Ambari configuration from 1.3.1 to 1.3.0.
   • Erases all the packages from Network Performance Insight V1.3.1 and install V1.3.0 packages from backup directories.
   • Restores Dashboard Application Services Hub integration certificates and settings.
   • Restarts the Network Performance Insight node on each Network Performance Insight cluster host.
   • Restarts the Ambari Server.
   • Registers the blue print.
2. Start all the following services in the order specified:
   a. Ambari Metrics
   b. Kafka
   c. Network Performance Insight Services
3. Verify that the rollback is successful with this command:

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

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<tr>
<th>Package Name</th>
<th>Version</th>
<th>Repositories</th>
</tr>
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What to do next
After your upgrade is successful and you are able to log in to Ambari web interface, run the `post_rollback.sh` script.

---

**Rolling back Technology Packs**

Use this information to roll back the upgraded Technology Packs to earlier release versions and remove the newly installed Technology Packs.

**Procedure**

1. Run the `packs-rollback.sh` script that is available in the `<DIST_DIRS>/NPI-1.3.1.0/bin/` directory at Ambari server host:

   ```bash
   cd <DIST_DIR>/bin/upgrade/.
   packs-rollback.sh
   ```

   Where, `<DIST_DIR>` is the directory where the Network Performance Insight installation media and Hortonworks Data Platform packages are available.
The packs-rollback.sh looks at the backup_list file in <DIST_DIR>/NPI-1.3.1.0/bin/upgrade folder that has a list of Technology Packs and their versions before the upgrade and performs the following tasks:

- Removes the new Technology Packs.
- Reverts the Technology Packs versions to earlier release versions.

2. Restart the Formula Service and Tivoli Network Manager Collector Service by using the following tasks:
   a) 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.
   b) Click **Hosts** and select the host on which you need to upgrade the technology packs
   c) Click **Services > NPI > Formula.**
   d) Click **Service Actions > Restart Formula Services.**
   e) Click **Services > NPI.**
   f) Click **Service Actions > Restart NM Collectors.**

Related tasks

“Upgrading the Technology Packs” on page 6
Use this information to upgrade the Technology Pack content that is available within Network Performance Insight V 1.3.1 installation media.

Running the post rollback tasks

After the rollback is complete, run these post rollback tasks to clean up the environment.

Before you begin

- Make sure all the services are up and running.

Procedure

1. Run the post rollback script as follows:

   ```
   cd <DIST_DIR>/NPI-1.3.1.0/bin/upgrade
   ./post_rollback.sh
   ```

   **Note:** You can run this script as root or non-root user. If you run the script as non-root user, reconfigure the Ambari server and agents to the non-root user.

   This script performs the following tasks:

   - Restores the Timeseries data.
   - Restores the backup that is done during preupgrade.
   - Copies the $NCHOME/etc/security/keys/conf.key file from Tivoli Network Manager system.

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

2. Optional: If you upgraded the Remote Flow Collector Service, roll back the service with the following tasks:
   a) Copy the /opt/IBM/basecamp/basecamp-installer-tools/upgrade/npi_remote_flow_collector_rollback.sh file to the remoter server where the Remote Flow Collector must be removed.
b) Run the `npi_remote_flow_collector_rollback.sh` script with the following command:

```
cd /opt/IBM/basecamp/basecamp-installer-tools/upgrade
./npi_remote_flow_collector_rollback.sh <yum-repo-server> <yum-repo-port>
```

Where:
- `<yum-repo-server>` is the server where the Ambari server is installed.
- `<yum-repo-port>` is the HTTPD port 9091 that is used by Ambari server for components installation in the cluster.

c) Restart the Remote Flow Collector.

3. Optional: If you upgraded the Remote SNMP Collector Service, roll back the service with the following tasks:

a) Stop the Remote SNMP Collector Service and Formula Service with the following commands:

```
ps -ef | grep npi-snmp-collector
kill -9 <pid>
ps -ef | grep npi-formula
kill -9 <pid>
```

Where, `<pid>` is the process ID for SNMP Collector Service and Formula Service.

b) Run the `/opt/IBM/basecamp/basecamp-installer-tools/upgrade/
npi_remote_snmp_collector_upgrade.sh` script with the following commands:

```
./npi_remote_snmp_collector_upgrade.sh <host>
```

Where, `<host>` is the FQDN of the server where the Remote SNMP Collector is upgraded.

c) Start the microservices with the following commands:

```
nohup bin/npi-snmp-collector &
nohup bin/npi-formula &
```
Chapter 5. 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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