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Nastel XRay

Upgrade Guide

Version 1.4 to Version 1.5

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Chapter 1: XRay 1.5 Component Versions

XRay version 1.5 supports the following component versions:

- Storm 2.4.0
- Zookeeper 3.6.2
- Kafka 2.8.1
- Solr 8.11.1

1.1   Component Installation Files

Download the software installation files below:

Linux	Windows
apache-storm-2.4.0.tar.gz	apache-storm-2.4.0.bat
apache-zookeeper-3.6.2-bin.tar.gz	apache-zookeeper-3.6.2-bin.zip
kafka_2.12-2.8.1.tgz	kafka_2.12-2.8.1.zip
solr-8.11.1.tgz	Not supported

Transfer each downloaded file to the corresponding installation folder. In this document, $APIN_HOME is used to represent the installation path. Extract their contents using the steps below:

```
cd $APIN_HOME/storm
extract apache-storm-2.4.0.*

cd $APIN_HOME/zookeeper
extract apache-zookeeper-3.6.2-bin.*

cd $APIN_HOME/kafka
extract kafka_2.12-2.8.1.*
Point the soft link to the new Kafka version (2.8.1).


* Solr software installation must be done for each Solr instance
cd $APIN_HOME/solr
extract solr-8.11.1.*
```

Chapter 2: XRay 1.5 Installation Instructions

This chapter contains instructions for upgrading Nastel XRay from version 1.4 to version 1.5.

2.1   Storm Upgrade to 2.4.0

1. Stop the Storm component:

   ```
   >cd [AUTOPILOT_HOME]/jkool/scripts

   >./stop-storm-topology.sh $APIN_HOME/storm/current
   ```

2. Add the following to <storm-home>/conf/storm.yaml. These are required for a Storm configuration. You can copy these from Storm 1.1.3 and update them as needed.

   ```
   storm.local.dir: "storm-local"

   storm.log4j2.conf.dir: "log4j2"


   storm.zookeeper.servers:

        - "localhost"

   storm.zookeeper.port: 2181

   storm.zookeeper.root: "/tmp/storm"


   nimbus.seeds: ["localhost"]


   supervisor.slots.ports:

        - 6700

        - 6701

        - 6702

        - 6703


   ui.port: 8088
   ```

3. (Optional.) Update the log4j2 jars to 2.17.2.

2.2   Zookeeper Upgrade to 3.6.2

1. Stop the Zookeeper component:
   ```
   ./zkServer.sh stop
   ```

2. In conf folder, copy zoo-sample.cfg to zoo.cfg.
3. Merge any changes you made to zoo.cfg in 3.4 to 3.6.
4. Add the following line to zoo.cfg:
   ```
   4lw.commands.whitelist=mntr,conf,ruok
   ```

   This allows the Solr web UI to connect to Zookeeper.

5. Either use a different dataDir folder or delete the old Zookeeper dataDir folder from 3.4 so 3.6 creates a new one.
6. Zookeeper now comes with a web-based admin server, listening on 8080 by default. Change the port number by adding following to zoo.cfg:
   ```
   admin.serverPort=8188
   ```

2.3   Solr Migration: Exporting from Solr 6.6

Follow these steps to export your data from Solr 6.6.

1. Using the latest 1.4 Query Browser, run `jkool-qb.bat` and connect to Solr version 6.6 with the Administrator user.
2. Once logged in, right-click and export each of the objects below, making sure to select **Include Access Control Permissions** for each export.

   User

   Team

   Repository

   Organization

   Dictionary

   AccessToken

3. Choose one of the following:
   - Rename the Solr 6.6 data folder.
     OR
   - Use a data folder for Solr 8.11.1 that is different from the one used for Solr 6.6 data.

2.4   Solr Upgrade to 8.11.1

Follow these steps to upgrade to Solr version 8.11.1.

1. Stop the Solr component:
   ```
   >cd $APIN_HOME/solr/current/bin
   >./solr stop –all
   ```

2. In the solr-8.11.1\bin folder, merge any changes you made to Solr and solr.in.sh shell scripts from 6.6. For example, if you made any changes to GC settings, make sure they are reflected in Solr 8.11.1.

3. Edit solr-8.11.1\server\resources\log4j2-console.xml.

   For the two AsyncLoggers, change log level to ERROR.

   This removes a sporadic Netty warning from the Zookeeper client API used by Solr. The warning can be ignored.

4. Use "Run as Administrator" when starting Solr.

2.4.1   Solr Authentication

If Solr authentication is enabled, you will need to upload a new security.json file. Run the following command in the jkool-dbapi-solr-1.5.x folder.

> **NOTE** This command assumes that zkroot is "/" (the default value). If not, adjust the zk: argument accordingly.

```
$APIN_HOME/solr/solr-8.11.1/bin/solr zk cp
file:config/security.json zk:/security.json
```

If you need to disable Solr authentication, then from Solr bin directory, use the command:

```
./solr auth disable
```

2.4.2   Upgrading XRay components

After upgrading the components, start the procedure to upgrade XRay service, job scheduler, jkool-dbapi-solr-1.5.x, and XRay and jkool-service war files.

1. Start only Zookeeper, Solr, Kafka, and ActiveMQ.
2. Place and untar the jkool-dbapi-solr-1.5.x.tar.gz to /opt/nastel/misc/jkool-dbapi.
3. Unlink the current soft link to latest jkool-dbapi-solr-1.5.x.
4. Create the cores. Use the create-cores.sh script from jkool-dbapi/current/schemas. Make sure to check the parameter used to run create-cores.sh.
5. Check for errors, if any.
6. Before running pkgman, stop all M6 processes (Enterprise Manager, the CEP server, and the Domain Server). Then from the [AUTOPILOT_HOME]/bin directory, run pkgman to install the JKOOL SERVICE package and other prerequisites:

   ```
   cd [AUTOPILOT_HOME]/updates

   [AUTOPILOT_HOME]/bin/pkgman

   ./pkgman ../update/AP60_SU33.pkg
   ```

   Start the Domain Server to allow libraries to be updated properly. Then stop it.

   ```
   ./pkgman ../update/JOB-SCHEDULER-0.1.15.1.pkg
   ```

   As in the previous step, start the Domain Server again to allow libraries to be updated properly. Then stop it.

   ```
   ./pkgman ../update/JKOOL-SERVICE-1.5.6.pkg
   ```

   As in the previous step, start the Domain Server again to allow libraries to be updated properly. Then stop it.

7. If sharing Zookeeper between Solr and Kafka, recreate all Kafka topics. Run:

   ```
   [AUTOPILOT_HOME]/jkool/scripts/create-kafka-topics.sh
   ```

   or for Windows:

   ```
   create-kafka-topics.bat
   ```

8. Restart the Domain and CEP servers. Then log into Nastel AutoPilot Enterprise Manager to confirm that the service has been installed successfully. Once confirmed, log out.
9. Untar the xray-ui.1.5.6.tar.gz and jkool-rest-1.5.6.tar.gz, and replace the war files in [AUTOPILOT_HOME]/apache-tomcat/webapps.

10. Make sure you have created the Administrator root token from Query Browser. Use the following command:

```
Create Token 'administrator-root-token'
Username='Administrator', Properties=('Root'=true),
Options=('Stream'='*', 'Query'='*', 'Modify'='*',
'Delete'='*', 'Admin'='*', 'Execute'='*')
```

> **NOTE** 'administrator-root-token' can be any string.

Verify that the root token was created. Use the following command:

```
"get Tokens where Root=true"
```

11. Define the following property in the catalina.sh file:

```
JAVA_OPTS="$JAVA_OPTS -
Djkool.administrator.token=administrator-root-token"

JAVA_OPTS="$JAVA_OPTS -Dtnt4j.file.repository.refresh=0"
```

12. If you have not done so already, add the following entry to additional java options lax.nl.java.option.additional in the ATPNAMES.lax and ATPNODE.lax files:

```
-Dtnt4j.file.repository.refresh=0
```

2.5 Solr Migration: Importing to 8.11.1

Follow these steps to import your data from Solr 6.6 to Solr 8.11.1.

You must log in to Query Browser as the Administrator. To create the Administrator user, run the config.sh/setup.sh user creation script from opt/nastel/sbin.

1. Using the latest 1.5 Query Browser, run `jkool-qb.bat` and connect to Solr version 8 with the Administrator user.
2. Once logged in, select File > Load Data and import each of the objects below. Make sure that you select **Include Access Control Permissions** for all imports and that you also select (check) the **repositoryID** option for the Dictionary import only.

User	Organization
Team	Dictionary
Repository	AccessToken

> **IMPORTANT!** Please note that the Administrator password will be changed to what it was set to in the previous version of XRay.

3. To migrate data from the version 6.6 to the version 8 Solr cluster, both clusters need to be up and running. The next step is to determine which repositories you want to move to Solr version 8:
   a. Using Query Browser in XRay 1.5, right-click **Repository** in the rightmost pane select **Get Rows** from the pop-up menu.
   b. Within the results of the "Get Rows" command, check the RepositoryID tab.
4. IMPORTANT: On the Solr 8 Linux node, using the 1.4 version of jkool-dbapi-solr, run the following command from bin directory:

```
./jkool-db-maint.sh -migrate -repo:RepoName-from-specified-in-
RepositoryID-tab -src:http://solr6.6IP:8983 -
dest:http://solr8IP:8983 -P:Adminpassword
```

⚠️ **IMPORTANT!**	Because the repository name contains a dollar sign ($) in its name, you must precede it with the backslash (\) escape character: For example: Real Repo Name: Sample-EUM$jKool To use in migrate utility: Sample-EUM\$jKool

Examples:

```
./jkool-db-maint.sh -migrate -repo:Sample-EUM\$jKool -
src:http://11.0.0.250:8983 -dest:http://11.0.0.251:8983 -
P:testpass
```

```
./jkool-db-maint.sh  -migrate -repo:DefaultRepo\$Nastel -
src:http://172.16.31.140:8983 -dest:http://172.16.31.27 -P:admin
```

5. Check for errors. Report any errors to Nastel support.

If in the previous XRay version you were running Storm topologies, restart it after completing all upgrade steps.