

## NiFi 1 to NiFi 2 migration precheck

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# Running a NiFi 1 to NiFi 2 migration precheck in Cloudera Manager

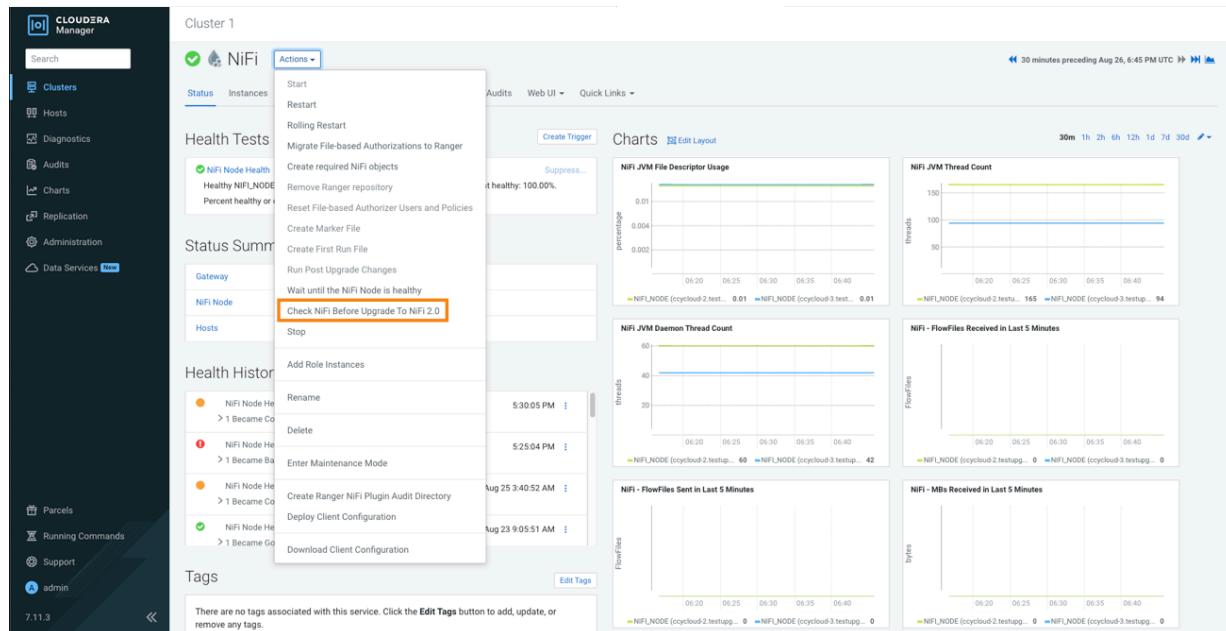
When preparing to migrate from Cloudera Flow Management 2.1.7 (NiFi 1-based) to Cloudera Flow Management 4.x (NiFi 2-based), you can run the NiFi migration precheck in Cloudera Manager. The precheck helps identify potential issues before the transition to NiFi 2 by highlighting the required preparation steps and flagging breaking changes that cannot be automatically handled by the Cloudera Flow Management Migration Tool. Follow the below steps to run the migration precheck from Cloudera Manager.

## About this task

This task must be performed in Cloudera Flow Management 2.1.7.

## Procedure

1. From Cloudera Manager, click the Clusters tab in the left-hand navigation.
2. Click NiFi in the list of services to display the NiFi service page.
3. Click the Actions drop-down next to the service name and select the Check NiFi Before Upgrade To NiFi 2.0 option.



The screenshot shows the Cloudera Manager interface for the NiFi service. The left sidebar shows various service categories like Clusters, Diagnostics, and Replication. The main area shows 'Cluster 1' with the NiFi service selected. The 'Actions' dropdown for NiFi is open, and the 'Check NiFi Before Upgrade To NiFi 2.0' option is highlighted with a red box. The rest of the page includes a 'Status Summary' section with a table of node health, a 'Health History' section with a table of recent events, and several monitoring charts on the right.

- Click Check NiFi Before Upgrade To NiFi 2.0 again.

The script runs across all NiFi nodes, providing a comprehensive list of items to address before migrating to NiFi 2.

- Review this list thoroughly to ensure a smooth migration process.

## Example

Here is an example of the output:

```

Tue Sep 24 19:37:22 UTC 2024
JAVA_HOME=/usr/java/jdk1.8.0_232-cloudera
Using -XX:OnOutOfMemoryError=/opt/cloudera/cm-agent/service/common/killpar
rent.sh as CSD_JAVA_OPTS
Using /var/run/cloudera-scm-agent/process/60-nifi-NIFI_NODE-PreUpgradeCheck
as conf dir
Using scripts/service-commands/pre_upgrade_check.sh as process script

```

```
CONF_DIR=/var/run/cloudera-scm-agent/process/60-nifi-NIFI_NODE-PreUpgrade
Check
CMF_CONF_DIR=
Script pre_upgrade_check.sh started work!
CMF_PACKAGE_DIR = /opt/cloudera/cm-agent/service
NIFI_WORKING_DIRECTORY = /var/lib/nifi
Path to csv file = /var/run/cloudera-scm-agent/process/60-nifi-NIFI_NODE-P
reUpgradeCheck/scripts/common-scripts/resources/CFM4-Deprecated-components.c
sv
Path to flow.json.gz = /var/lib/nifi/flow.json.gz
Path to bootstrap.conf = /var/lib/nifi/config_backup/bootstrap.conf
Custom java home =
%%%%%%%%%%%%%
%%%%%%%%%%%%%
%%%%%%%%%%%%%
%%%%%%%%%%%%% Check Before Upgrade to CFM with NiFi 2.0
%%%%%%%%%%%%%
%%%%%%%%%%%%%
%%%%%%%%%%%%%
%%%%%%%%%%%%%
Using Python 3 or newer version (3.8.12)
Script pre_upgrade_check.py started work!
Passed arguments:
Path to json flow file = /var/lib/nifi/flow.json.gz
Path to deprecated components CSV file = /var/run/cloudera-scm-agent/proce
ss/60-nifi-NIFI_NODE-PreUpgradeCheck/scripts/common-scripts/resources/CFM4-D
eprecated-components.csv
Path to components with kerberos properties CSV file = /var/run/cloudera-sc
m-agent/process/60-nifi-NIFI_NODE-PreUpgradeCheck/scripts/common-scripts/res
ources/NiFi-1.x-components-with-legacy-Kerberos-properties.csv
Path to bootstrap conf = /var/lib/nifi/config_backup/bootstrap.conf
*****
Validating arguments:
You are running pre upgrade check before upgrade to NiFi 2.0 for NiFi mana
ged by Cloudera Manager.
Path to flow.json.gz file is valid!
Path to deprecated components CSV file is valid!
Path to components with kerberos properties CSV file is valid!
Path to bootstrap.conf file is valid!
*****
Parsing bootstrap.conf:
*****
Reading and parsing /var/run/cloudera-scm-agent/process/60-nifi-NIFI_NODE-
PreUpgradeCheck/scripts/common-scripts/resources/CFM4-Deprecated-components.
csv:
*****
Reading and parsing /var/run/cloudera-scm-agent/process/60-nifi-NIFI_NODE-
PreUpgradeCheck/scripts/common-scripts/resources/NiFi-1.x-components-with-l
egacy-Kerberos-properties.csv:
*****
Reading and parsing flow.json.gz:
*****
*****
***** CHECKING THAT UPGRADE PATH IS SUPPORTED
***** (It is required to be on CFM 2.1.7+ before upgrading to
CFM 4.0.0+)
*****
Get current CFM version from bootstrap.conf and check it's valid to upgrade
to CFM with NiFi 2.0 (CFM-4.0.0.0 or newer)
Property value for 'working.dir' = /opt/cloudera/parcels/CFM-2.1.7.1000-42/N
IFI
Current CFM version could be upgraded to CFM with NiFi 2.0 (CFM-4.0.0.0 or n
ewer).
```

```
*****
***** CHECKING THAT JAVA 21 IS USED
***** (Java 21 is the minimum Java version required for NiFi
and NiFi Registry 2.0)
*****
Get 'java' property value from bootstrap.conf
Property value for 'java' = java
Getting java home from JAVA_HOME in env variables.
Executing command: /usr/java/jdk1.8.0_232-cloudera/bin/java -version 2>&1 |
awk -F[\"\\.] -v OFS=. 'NR==1{print $2}'
Command output: 1

WARN: Your current Java version is too low for upgrading to NiFi 2.0 (CFM-
4.0.0.0). Please install Java version 21 on each host with NiFi and follow t
he upgrade documentation for NiFi 2.0 (CFM-4.0.0.0). NOTE: Do not change the
JDK for the current NiFi. It should only be changed during the upgrade to N
iFi 2.0 (CFM-4.0.0.0).

*****
***** CHECKING FOR REMOVED COMPONENTS
***** Some components have been removed in NiFi 2.0.
***** You should switch to the recommended option before up
grading.
***** If not, those components will be showing as ghost comp
onents in NiFi.
*****
ERROR: Component identifier: '8d74d462-7c52-35d1-ad1b-665696503ea2' of type
'org.apache.nifi.processors.gettcp.GetTCP', group 'org.apache.nifi' and art
ifact 'nifi-tcp-nar' is no longer supported.
ERROR: Component identifier: 'f78dba93-e6ec-38d7-b5e4-fdbcd09fd831' of type
'org.apache.nifi.processors.pulsar.pubsub.PublishPulsar', group 'io.streamn
ative.connectors' and artifact 'nifi-pulsar-nar' is removed, but it is plann
ed to be reintroduced later. Please check the available CFM-4.x releases.
ERROR: Component identifier: '2e2edf20-3efc-388a-ac96-943b717e5252' of type
'org.apache.nifi.processors.twitter.GetTwitter', group 'org.apache.nifi' a
nd artifact 'nifi-social-media-nar' is no longer supported. Please consider
using 'ConsumeTwitter' instead.
ERROR: Component identifier: 'a0766b6b-140e-31a8-afb-80f10459f870' of type
'org.apache.nifi.kerberos.KeytabCredentialsService', group 'org.apache.nifi'
and artifact 'nifi-kerberos-credentials-service-nar' is no longer supported
. Please consider using 'KerberosKeytabUserService' instead.
*****
```

```
*****
***** CHECKING FOR REMOVED SCRIPTING LANGUAGES
***** Some scripting languages have been removed in NiFi 2.0.
***** You should rewrite your scripted components using Gr
oovy as language or leverage the new Python API in NiFi 2.0.
***** If not, those components will be showing as invalid in
NiFi 2.0.
*****
ERROR: Component identifier: 'e0334fb0-738b-3000-bdfc-fee3e59f539d' of type
'org.apache.nifi.processors.script.InvokeScriptedProcessor', group 'org.apac
he.nifi' and artifact 'nifi-scripting-nar' has deprecated 'Script Engine' va
lue 'ruby'.
ERROR: Component identifier: 'e9d304ef-6c58-39ea-aa27-c01a6d5718fe' of type
'org.apache.nifi.processors.script.ExecuteScript', group 'org.apache.nifi' a
nd artifact 'nifi-scripting-nar' has deprecated 'Script Engine' value 'pytho
n'.
*****
```

```
*****
***** CHECKING FOR VARIABLES
```

```
*****
Variables no longer exist in NiFi 2.0 and are replaced
by Parameters and Parameter Contexts.
*****
ERROR: Component identifier: 'e65e16f2-d5ba-32b4-a04e-1ae97c44da02' contains
2 variable(s).
ERROR: Component identifier: '1428d513-770b-3c26-94c9-9641d57050c1' contains
3 variable(s).
*****


*****
CHECKING FOR EVENT DRIVEN SCHEDULING STRATEGY
Event Driven Scheduling Strategy no longer exists. Use
Time Driven scheduling strategy instead.
*****


No component is configured with Event Driven scheduling strategy.
*****


*****
CHECKING FOR TEMPLATES
Templates no longer exist in NiFi 2.0. The use of NiFi
Registry is recommended for versioning flows.
*****


ERROR: Component identifier: '6c387684-c2f2-3bbe-b485-8b6593cda6ba' with 'componentType' 'TEMPLATE'.
*****


*****
CHECKING FOR INCORRECT KERBEROS CONFIGURATION
NiFi components with Kerberos configuration that are available in NiFi 2.0 should be configured with the 'Kerberos User Service'
*****


ERROR: Component identifier: 'a716b969-9163-3e70-a162-b819b9ec4b63' of type
'org.apache.nifi.processors.kafka.pubsub.ConsumeKafka_2_6', group 'org.apache.nifi' and artifact 'nifi-kafka-2-6-nar' has configured Kerberos properties
. Please configure Kerberos using 'KerberosUserService', as this is the only configuration supported in NiFi 2.0.
ERROR: Component identifier: '0d650d47-5136-303c-a694-678a027b27cf' of type
'org.apache.nifi.processors.parquet.PutParquet', group 'org.apache.nifi' and artifact 'nifi-parquet-nar' has configured Kerberos properties. Please configure Kerberos using 'KerberosUserService', as this is the only configuration supported in NiFi 2.0.
ERROR: Component identifier: '86c88c6a-369f-3209-9a79-dd6168c28b48' of type
'org.apache.nifi.processors.hadoop.PutHDFS', group 'org.apache.nifi' and artifact 'nifi-hadoop-nar' has configured Kerberos properties. Please configure Kerberos using 'KerberosUserService', as this is the only configuration supported in NiFi 2.0.
*****


*****
Script finished work successfully
ERROR: You should not upgrade until the above errors are taken care of!
```

## Running a manual migration precheck for NiFi managed by Cloudera Manager

When preparing to migrate from Cloudera Flow Management 2.1.7 (NiFi 1-based) to Cloudera Flow Management 4.x (NiFi 2-based), you can run the migration precheck manually from the command line on your NiFi nodes, even if NiFi is managed by Cloudera Manager. The precheck helps identify potential issues before the transition to NiFi 2 by highlighting the required preparation steps and flagging breaking changes that cannot be automatically handled by the Cloudera Flow Management Migration Tool. The manual precheck provides greater administrative control and is

useful in scenarios where a command-line-based process is required or preferred. Follow the below steps to perform a precheck directly from the command line.

### About this task

This task must be performed in Cloudera Flow Management 2.1.7.

### Procedure

1. Switch the user to NiFi using `su nifi`.
2. Find the location of these files.
  - a. `pre_upgrade_check.py`
  - b. `CFM4-DDeprecated-components.csv`
  - c. `NiFi-1.x-components-with-legacy-Kerberos-properties.csv`
3. Identify the  `${NIFI_WORKING_DIRECTORY}` environment variable, which can be found in `stdout.log` during NiFi startup.
4. Use Python3 to run the script with the following command, replacing the placeholders with the actual paths.

```
python3 [ ***/path/to*** ]/pre_upgrade_check.py \
"${NIFI_WORKING_DIRECTORY}/flow.json.gz" \
"[ ***/path/to*** ]/CFM4-DDeprecated-components.csv" \
"[ ***/path/to*** ]/NiFi-1.x-components-with-legacy-Kerberos-properties.csv" \
" [ ***NIFI_WORKING_DIRECTORY*** ]/config_backup/bootstrap.conf" \
"${CUSTOM_JAVA_HOME}"
```

5. If necessary, specify the  `${CUSTOM_JAVA_HOME}` argument.

This should be set if the `JAVA_HOME` environment variable for the "nifi" user is different from the `JAVA_HOME` you are using to run the NiFi service.

6. Once all file paths are updated in the command, run it to start the migration precheck.

## Running a manual migration precheck for standalone NiFi (not managed by Cloudera Manager)

In environments where NiFi is not managed by Cloudera Manager, you can run a manual migration precheck directly from the command line on NiFi nodes to prepare for the migration from Cloudera Flow Management 2.1.7 (NiFi 1-based) to Cloudera Flow Management 4.x (NiFi 2-based). Follow the below steps to perform the precheck.

### About this task

This task must be performed in Cloudera Flow Management 2.1.7.

### Procedure

1. Download the migration precheck script and the associated CSV files listing the components deprecated in NiFi 2 and the components with updated Kerberos properties.

These files are part of the Cloudera Service Descriptor (CSD) package available behind the paywall.

- a) Download the NiFi CSD file and unzip it.
- b) Locate the required files.

- `scripts/service-commands/pre_upgrade_check.py`
- `scripts/common-scripts/resources/CFM4-DDeprecated-components.csv`
- `scripts/common-scripts/resources/NiFi-1.x-components-with-legacy-Kerberos-properties.csv`

2. After downloading the files, run the migration precheck script using the following command.

```
su nifi
python3 [***path_to***]/pre_upgrade_check.py \
"[***path_to***]/flow.json.gz" \
"[***path_to***]/CFM4-Deprecated-components.csv" \
"[***path_to***]/NiFi-1.x-components-with-legacy-Kerberos-properties.csv" \
"[***path_to***]/bootstrap.conf" \
"\" \
"[***path_to***]/nifi-framework-nar-<version>.nar" \
"[***path_to***]/nifi.sh"
```

**Note:**

Replace the placeholder paths with the actual locations of your files.

For example:

```
su nifi
python3 /tmp/scripts/service-commands/pre_upgrade_check.py \
/var/lib/nifi/flow.json.gz \
"/tmp/scripts/common-scripts/resources/CFM4-Deprecated-components.csv" \
"/tmp/scripts/common-scripts/resources/NiFi-1.x-components-with-legacy-K
erberos-properties.csv" \
"/tmp/nifi-1.26.0.2.1.7.1000-25/conf/bootstrap.conf" \
"\" \
"/tmp/nifi-1.26.0.2.1.7.1000-25/lib/nifi-framework-nar-1.26.0.2.1.7.1000
-25.nar" \
"/tmp/nifi-1.26.0.2.1.7.1000-25/bin/nifi.sh"
```

The script generates a detailed report highlighting any issues that need to be resolved before upgrading to NiFi 2.

3. Review this report thoroughly to ensure a smooth migration process.