



**NetAct™ Cloud 22 FP2302**  
(OpenStack)

## **Installing NetAct fast pass Service Packages**

**DN1000040570**  
**Issue: 1-0 Final**

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# 1 Overview of NetAct fast pass service package installation

## 1.1 Purpose of NetAct fast pass solution

This document contains installation instructions and other information about a NetAct fast pass service package delivery for Nokia NetAct product.

The purposes of NetAct fast pass solution are:

- decoupling development of NetAct and network element releases from each other.
- supporting a new network element release to customers without upgrading NetAct.
- delivering NetAct fast pass service packages separately from NetAct software package.
- network element programs do not need to rely on NetAct program schedules to get NetAct management functionality.
- integrating network elements, generating metadata and verifying integration automatically.

NetAct upgrading does not break the support of NetAct fast pass service packages which have been installed.

## 1.2 Introduction of NetAct fast pass service package installation

This document is applicable for the NetAct fast pass installation toolkit (FIT) based NetAct fast pass service package in ZIP format.

FIT-based NetAct fast pass service package is an optimized NetAct service package. This NetAct service package contains metadata in ZIP file and corresponding NetAct fast pass service package operating documents. FIT, as a NetAct tool, is introduced to administrate this kind of NetAct fast pass service packages. The tool has the following advantages:

- support lightweight rollback and no need to backup or restore the whole NetAct.
- do not need to power on Admin Server during installation.
- support to install multiple NetAct fast pass service packages at one time to save time.

For more details about the FIT tool, see *Introduction to fast pass installation toolkit* in *Administering NetAct fast pass Service Packages*.

Each FIT-based NetAct fast pass service package delivers one set of specific documentation of the corresponding NetAct service package which describes the network element specific information, for example, the corresponding network element integration instruction, each NetAct fast pass service package Release Changes, needed license, limitations and so on. All the installation procedures which are listed in this document are applicable for all FIT-based NetAct fast pass service packages.

## 1.3 Rollback guidance

After the network element metadata is rolled back by FIT, some application functions which are related with the rolled back metadata might not work. You may see error messages when using these functions. Here are some examples:

- When open one saved PM report which contains one rolled-back counter, you may see error message.
- In NetAct Monitor, the managed object with a rolled-back icon may be shown as the default icon.
- If the metadata of one dedicate network element release is rolled back, all the integrated instances of that network element release may do not work.
- After rolling back a new network element release and adaptations are removed, the details of the adaptation ID and adaptation release might be seen in Monitoring tools. Alarm upload, element management launches, icons, and some other functions are not supported for the objects which are created and used by the removed adaptations.

To solve these issues, reinstall the corresponding NetAct fast pass service package with the correct network element release, and then upgrade the network element integration. After that, set the network element instance in correct status.

If you plan to roll back, follow the rollback guidance:

1. When you decide to roll back the installed NetAct fast pass service package, the rollback must be executed before the following actions:
  - Upgrade NetAct.
  - Deploy adaptation with Adaptation Deployment Suite.
  - Apply user-defined network element adaptation.
2. For the NetAct fast pass service package which supports a new network element release:
  - Before upgrading massive network elements to the new release, the service package must be fully verified, and rollback of this fast pass service package is not planned.
  - After upgrading network elements to the new release, rolling back the fast pass service package causes integration malfunction of the new network element release. The integration malfunction of the network element is the expected result, because the new network element release adaptations are removed. To recover the network element integrations, you need to reinstall the fast pass service package or downgrade the network elements to the previous release.
3. There might be rollback dependencies between different FIT-based NetAct fast pass service packages. You need to follow certain order when rolling back a service package which has rollback dependency. The reversed order of installation is last-in and first-out. FIT prints the order in console when you invoke FIT rollback or rollback precheck script.

Example:

If the FP123 and the FP456 contain the same adaptation, these two service packages have roll-back dependency. Assume the FP123 is installed first, and the FP456 is installed after the FP123. You cannot roll back the FP123 directly. You must roll back the FP456 first, after that rollback the FP123.

## 1.4 Highlight

- FIT supports installing multiple NetAct fast pass service packages in one shot. The maximum supported number in one shot is 50.
- In Disaster Recovery (DR) environment, NetAct fast pass service package installed on active site will be synchronized automatically to standby site.
- CM and PM applications may be restarted at the end of installation procedure. The services which need to be restarted are listed in the pre-check result. The restart only impacts the enterprise application. The PM pipe is still collecting data from the network elements during restart.
- The installation of NetAct fast pass service package should be executed after the peak hours and when there is no ongoing NetAct upgrade on the lab.

## 2 Prerequisites

### 2.1 Checking pre-required software



**Note:** If the NetAct fast pass service package is delivered together with NetAct, you can ignore the section.

Before starting any NetAct fast pass service package installation, check if all the pre-required software which are listed in the *Configuring information* section in corresponding NetAct fast pass service package specific documentation package are installed.

For more information about network element support through NetAct fast pass service packages, see *Compatibility of NetAct and NetAct fast pass service packages* in *NetAct Release Changes*.

## 3 Preparing NetAct fast pass service package installation

### 3.1 Choosing the user for NetAct fast pass service package installation

For NetAct fast pass service package installation, there are two users which can be used for installation.

- The omc user is the primary user for NetAct fast pass service package installation.
- The fpinst user can be used for the installation too. This is a normal user. This user does not have other system management permissions except installation related privileges.



**Note:**

- Because the fpinst user is a normal user, you need to add `sudo` at the beginning of the commands when executing the following FIT command:

- `/opt/oss/Nokia-fit/bin/fastpass_toolkit.sh`
- `/opt/oss/Nokia-fit/bin/query_fastpass_info.sh`
- `/opt/oss/Nokia-fit/bin/restart_services.sh`

For example:

```
sudo /opt/oss/Nokia-fit/bin/fastpass_toolkit.sh
```

- For security reason, this user is in locked status by default. If you want to use the fpinst user for installation, you should unlock the user first. How to unlock the fpinst user, see *Enabling dedicated user to install fast pass service package* in *Administering NetAct fast pass Service Packages*.
- After the fpinst user is unlocked, see *Retrieving password of system users* in *Administering Users and Permissions* to retrieve the password of this user, with the following retrieving command arguments:
  - user name is `fpinst`
  - user type is `appserv`
  - user instance is `appserv`

Choose one of the users to execute the operations based on your requirements.



## 3.2 Determining the installation time

Because global disks and Oracle database backup cause high load to NetAct database which effects fast pass installation, execute the following steps to check the backup schedule and plan the installation to avoid the database or global disks backup.

1. Log in as the selected user to the NetAct VM where the `nfs` service is running.



**Note:**

- To find the password of the selected user, see *Retrieving password of system users* in *Administering Users and Permissions*.
- To locate the right VM, see *Locating the right virtual machine for a service* in *Administering NetAct Virtual Infrastructure*.

2. Check the schedule of the backup job by entering the following command.



**Note:** Do not install the fast pass service package when the backup is running.

For NetAct Standard and NetAct Cloud VMWare environment, enter:

```
/opt/cpf/bin/backuptool.pl -schedule show
```

For NetAct Cloud OpenStack environment, enter:

```
/opt/cpf/bin/backup_scheduler.pl -schedule show
```

An example output on NetAct Standard and NetAct Cloud VMWare environment:

```
[omc@lab100vm1 ~]$ /opt/cpf/bin/backuptool.pl -schedule show
Disk-based Backup
Schedule time:every day at 14:00
Schedule time:every day at 10:00
2 active backup cronjob(s) found.
```

The output shows the start time of the backup job. Normally, the backup job runs for 2 hours to 4 hours. The running time is based on the configuration.

To know the exact time of the backup job running on the NetAct, see the following document in NetAct Operating Documentation to check the backup log files:

For NetAct Standard and NetAct Cloud VMWare, log in to the DB VM to check backup log files. How to check backup log files, see *Checking the backup log files and reports* in *Administering Backups*

For NetAct Cloud OpenStack, how to check backup log files, see *Checking the backup log files and reports* in *Administering Backups*.

In case that NetAct does the backup for file system and Oracle database with the third-party back-up solution, for example, using Oracle's Recovery Manager (RMAN) for DB backup, checking the backup schedule based on the third-party backup solution document.

### 3.3 Preparing the NetAct fast pass service package

The maximum number of NetAct fast pass service packages which can be installed in one shot is 50.

1. Log in as the selected user to the NetAct VM where the `ne3sws_dynamicadaptation` service is running.



**Note:**

- To find the password of the selected user, see *Retrieving password of system users* in *Administering Users and Permissions*.
- To locate the right VM, see *Locating the right virtual machine for a service* in *Administering NetAct Virtual Infrastructure*.

2. Create a new folder by entering:

```
mkdir /var/tmp/fastpass_packages
```



**Note:** If this folder already exists, contact system administrator to ensure that no other user is doing FIT installation. After that, delete this folder and create it with the given command. If the login user does not have permissions to delete this folder, you need to log in with the user who owns this folder to delete this folder.

3. Execute the following script to query all available NetAct fast pass service packages which are delivered together with NetAct releases and monthly Service Packages:

For omc user:

```
/opt/oss/Nokia-fit/bin/query_fastpass_info.sh --list-available
```

For fpinst user:

```
sudo /opt/oss/Nokia-fit/bin/query_fastpass_info.sh --list-available
```

Example output:

Fast Pass Package	NE_Type-Release
FP705_20200203T085537	ISBC-20.2, ISBC-20.2C
FP716_20201102T150212	LTEeNB-FL20C, SBTS-SBTS20C

4. If the NetAct fast pass service package which need to be installed is not listed in step 3, download the ZIP files of the fast pass service package from the Software Supply Tool (SWST).
  - a) Use `sha256sum` command to get the sha2 checksum value for the download file.

Compare the calculated checksum values with the ones which are provided in Software Supply Tool (SWST). If the calculated checksums do not match, delete the unmatched NetAct fast pass service package ZIP files and download them again from SWST. After that re-do the checksum validation.

Example of sha256sum command:

```
sha256sum /var/tmp/FP605_20191012T113425.zip
```

- b) Copy the downloaded ZIP files of the NetAct fast pass service package to the `/var/tmp/fastpass_packages` folder.

Example of copy command:

```
cp /var/tmp/FP605_20191012T113425.zip /var/tmp/fastpass_packages
```

5. If the NetAct fast pass service package that needs to be installed is listed in step 3, copy the NetAct fast pass service package from the `/var/opt/oss/Nokia-fit/sp_repo/` folder to the `/var/tmp/fastpass_packages` folder.

Example of copy command:

```
cp /var/opt/oss/Nokia-fit/sp_repo/FP635_20191128T112935.zip /var/tmp/fastpass_packages
```

### 3.4 Obtaining activation key for NetAct fast pass service package

Follow the following instructions to obtain the activation key for all the NetAct fast pass service packages in the `/var/tmp/fastpass_packages` folder:

1. Log in as the selected user to the NetAct VM where the `ne3sws_dynamicadaptation` service is running.



**Note:**

- To find the password of the selected user, see *Retrieving password of system users* in *Administering Users and Permissions*.
- To locate the right VM, see *Locating the right virtual machine for a service* in *Administering NetAct Virtual Infrastructure*.

2. Execute the following script to get activation key request strings:

```
/opt/oss/Nokia-fit/bin/fastpass_activation_key_request.sh /var/tmp/fastpass_packages
```



**Note:** When using the `fpinst` user, do not add `sudo` in this command.

The key request string is printed in screen with the following format, one request string in one line.

```
NA<NetAct TARGET_ID> UPGRADE Fastpass_<SP file name without .zip suffix>
```

Example:

```
NA12345678 UPGRADE Fastpass_FP116_20190701T050313
```

```
NA12345678 UPGRADE Fastpass_FP105_20190622T160408
```

### 3. Get activation key for each key request string.

Option 1: Send SMS containing the key request string to +358 40 544 0047 or +358 50 486 2193.

You will receive the key in the replied SMS.

Option 2: Log in to NSN Intra and follow the instructions in <http://sms-gw1.tre.nsn-rdnet.net/NetAct/> or <http://sms-gw2.tre.nsn-rdnet.net/NetAct/> to receive the key.



**Note:** The Option 2 is recommended if the network connection to website is possible.  
This option can get multiple activation keys in batch.

### 4. Save all activation keys to the `/var/tmp/fastpass_packages/activation_key.txt` file by entering:

```
vim /var/tmp/fastpass_packages/activation_key.txt
```

Write all key request strings and activation keys in this file. Each request string and its activation key are in one line with the following format:

```
<activation key> <key request string>
```

Example for 2 NetAct fast pass service packages:

```
DDBDAD NA12345678 UPGRADE Fastpass_FP116_20190701T050313
```

```
AEFBAF NA12345678 UPGRADE Fastpass_FP105_20190622T160408
```

### 5. Save the file and exit.

## 3.5 Pre-checking the service packages before installation

Before installing the NetAct fast pass service packages, execute the following steps to do pre-check.

The pre-check result shows the following information:

- Existing system environment issue in the NetAct
- The rollback capability of the service packages
- Services which need to be restarted after the installation

### 1. Log in as the selected user to the NetAct VM where the `ne3sws_dynamicadaptation` service is running.

**Note:**

- To find the password of the selected user, see *Retrieving password of system users* in *Administering Users and Permissions*.
- To locate the right VM, see *Locating the right virtual machine for a service* in *Administering NetAct Virtual Infrastructure*.

**2. Execute the following command to do pre-check for all NetAct fast pass service packages:**

```
/opt/oss/Nokia-fit/bin/fastpass_toolkit.sh --pre-check-only --deploy /  
var/tmp/fastpass_packages
```

An example output if rollback is supported for all the NetAct fast pass service packages, and no system environment issue is found:

```
[System Environment Check]  
---  
No critical issue found  
[Rollback Capability Check]  
Fast Pass Package      Rollback Capability  
FP616_20191029T100255  Yes  
[Service Restart Needed After Installation]  
PM frontend applications  
CM WAS service  
---  
Pre-check completed, no issue found.
```

If any one of the NetAct fast pass service package does not support rollback, take full system backup before installing the NetAct fast pass service packages.

An example output if any package does not support rollback:

```
[System Environment Check]  
---  
No critical issue found  
[Rollback Capability Check]  
Fast Pass Package      Rollback Capability  
FP616_20190726T120718  No  
[Service Restart Needed After Installation]  
PM frontend applications  
CM WAS service  
---  
Pre-check completed, 1 package(s) don't support rollback  
Rollback is not supported for [FP616_20190726T120718]  
Please follow NetAct backup&restore solution to provide rollback-  
support for the fast pass service packages.
```

Once NetAct backup is done, please continue to install the fast pass service packages by adding additional command line argument `--no-rollback-support`

Please refer to FIT log files under `/var/opt/oss/log/Nokia-fit/` for more details.

an example output if any system environment issue is found:

```
[System Environment Check]
---
Failed check points: (The following issue(s) will cause the deployment
fail)
1. Check self-monitoring alarms
    - Found following self-monitoring alarms
        10010 Database service is not working
        10013 Database connections exceeded
[Rollback Capability Check]
Fast Pass Package      Rollback Capability
FP616_20191029T100255  Yes
[Service Restart Needed After Installation]
PM frontend applications
CM WAS service
---
Pre-check completed, 1 critical issue(s) found
The critical issue(s) must be resolved before installation.
Please refer to FIT log files under /var/opt/oss/log/Nokia-fit/ for
more details.
```

If a critical system environment issue is found, the issue must be resolved before installation. To fix the issue, see *Troubleshooting fast pass installation toolkit* in *Troubleshooting NetAct Administration*.

## 4 Installing NetAct fast pass service package



**Note:** Check [Rollback guidance](#) to understand the rollback guidance before installation.

### 4.1 NetAct fast pass service package installation

There are two different options to install fast pass service packages:

- One-click installation: This method is the simplest. The installation engineer needs to invoke only one single command to install the fast pass package. During the process, CMWAS and the PM application may be restarted based on the installed fast pass package content and applications may be impacted.



**Note:** The one-click installation is the recommended method to use.

For more information, see [Performing one-click installation](#).

- Online-offline installation: This method is flexible. The installation process is split into online installation phase and offline installation phase. The installation engineer needs to invoke two commands to trigger these two phases separately. In the online installation phase, the critical applications and functionalities that are listed in the [Table 1: Unaffected applications and functionalities](#) table are not impacted. In the offline installation phase, CMWAS and the PM application may be restarted based on the installed fast pass package content, and applications may be impacted.

Category	Applications or Functionalities
Fault Management(FM)	<ul style="list-style-type: none"><li>– Alarms Receiving from NEs</li><li>– Alarm Filtering</li><li>– Alarm Lifting and Lifting Rules Editing</li><li>– Manual Page display</li><li>– Alarm Upload</li><li>– Alarm Acknowledgement &amp; Cancellation</li><li>– Alarm Forwarding</li><li>– Monitor Launch</li></ul>
Performance Management(PM)	<ul style="list-style-type: none"><li>– Performance Data Receiving</li><li>– Performance Data Aggregation</li><li>– Performance Data Export to umbrella system</li></ul>

Category	Applications or Functionalities
	<ul style="list-style-type: none"><li>– Thresholder and Profiler operations</li><li>– Performance Manager operations</li></ul>
Configuration Management(CM)	<ul style="list-style-type: none"><li>– Configuration Data Upload</li><li>– Configuration Plan Provisioning</li><li>– Change Notification</li><li>– Policy Creation and Execution</li><li>– CM Rule Creation and Execution</li><li>– CM API operations</li><li>– Template Creation</li><li>– Plan and Template Import and Export</li></ul>
Software Management(SWM)	<ul style="list-style-type: none"><li>– Software Upload</li><li>– Software Download</li><li>– Software Activation</li><li>– Software Rollback</li></ul>

Table 1: Unaffected applications and functionalities

For more information, see [Performing online-offline installation](#).

The customers can choose to execute [Performing one-click installation](#) or [Performing online-offline installation](#) based on their needs.

### 4.1.1 Performing one-click installation

1. Log in as the selected user to the NetAct VM where the `ne3sws_dynamicadaptation` service is running.



**Note:** To locate the right VM, execute the following command:

```
/opt/cpf/sbin/netact_status.sh status service  
ne3sws_dynamicadaptation
```

2. To install all the NetAct fast pass service packages, enter.

```
/opt/oss/Nokia-fit/bin/fastpass_toolkit.sh --deploy /var/tmp/  
fastpass_packages
```



**Note:** This step may restart CMWAS and the PM application based on the installed fast pass package content.



If the rollback capability of any fast pass package is **no**, run the following installation command with `--no-rollback-support` parameter:

```
/opt/oss/Nokia-fit/bin/fastpass_toolkit.sh --no-rollback-support --  
deploy /var/tmp/fastpass_packages
```

The `--no-rollback-support` parameter affects only the NetAct fast pass service packages that do not support rollback. The parameter does not affect the NetAct fast pass service packages that support rollback.

An example output:

Please refer to FIT log files under `/var/opt/oss/log/Nokia-fit/` for more details. In progress.....

To view the on-going installation process, check the FIT process log by execute following command:

```
tail -F /var/opt/oss/log/Nokia-fit/oss_progress0_0.log
```

### Expected outcome

Example output when the installation is completed:

Deploy fast pass service packages from `/var/tmp/fastpass_packages` completed.

Package deployment detail:

```
[DEPLOYED]      FP616_20191029T100255
```

Restart details:

```
Status  Service  
DONE    CM WAS service
```

Post check completed.

## 4.1.2 Performing online-offline installation

1. Log in as the selected user to the NetAct VM where the `ne3sws_dynamicadaptation` service is running.



**Note:** To locate the right VM, execute the following command:

```
/opt/cpf/sbin/netact_status.sh status service  
ne3sws_dynamicadaptation
```

2. To invoke online installation for all the NetAct fast pass service packages, enter:

```
/opt/oss/Nokia-fit/bin/fastpass_toolkit.sh --deploy /var/tmp/  
fastpass_packages --online
```

**Note:**

- After triggering the online installation command and before triggering the offline installation, you must not change the fast pass packages in folder `/var/tmp/fastpass_packages`.
- After the online installation is completed, before executing the offline installation, it may have an impact on the other fast pass package installation. So, Nokia recommends to execute the offline installation in [step 3](#) right after the online installation is completed.

If the rollback capability of any fast pass package is **No**, run the following online installation command with `--no-rollback-support` parameter:

```
/opt/oss/Nokia-fit/bin/fastpass_toolkit.sh --no-rollback-support --
deploy /var/tmp/fastpass_packages --online
```

**Example output:**

```
THIS MAY TAKE A WHILE, PLEASE BE PATIENT WHILE OPERATION IS RUNNING.
Please refer to FIT log files under /var/opt/oss/log/Nokia-fit/ for
more details.
```

```
In progress.....
```

```
Deploy fast pass service packages from /var/tmp/fastpass_packages
completed.
```

```
Package deployment detail:
```

```
[ONLINE_DEPLOYED]      FP764_20201207T034957
```

**3. To invoke offline installation for all the NetAct fast pass service packages, enter:**

```
/opt/oss/Nokia-fit/bin/fastpass_toolkit.sh --deploy /var/tmp/
fastpass_packages --offline
```

**Example output:**

```
THIS MAY TAKE A WHILE, PLEASE BE PATIENT WHILE OPERATION IS RUNNING.
Please refer to FIT log files under /var/opt/oss/log/Nokia-fit/ for
more details.
```

```
In progress.....
```

```
Deploy fast pass service packages from /var/tmp/fastpass_packages
completed.
```

```
Package deployment detail:
```

```
[DEPLOYED]      FP764_20201207T034957
```

```
Restart details:
```

```
Status    Service
DONE      CM WAS service
```

```
Post check completed.
```

## 4.2 Verifying the installed NetAct fast pass service package

If the NetAct fast pass service package is delivered together with NetAct, see the network element integration document to verify the NetAct fast pass service package. Otherwise, see the network element specific document of this NetAct fast pass service package to verify the NetAct fast pass service package.

According to the verification result, you can decide to roll back the NetAct fast pass service package or not. If you decide to roll back the NetAct fast pass service package, you need to do the rollback before any other installation or upgrade operations on NetAct. For more information, see [Rollback guidance](#).

## 4.3 Cleaning all temporary files

1. Log in as the selected user to the NetAct VM where the `ne3sws_dynamicadaptation` service is running.



**Note:**

- To find the password of the selected user, see *Retrieving password of system users* in *Administering Users and Permissions*.
- To locate the right VM, see *Locating the right virtual machine for a service* in *Administering NetAct Virtual Infrastructure*.

2. Clear the temporary folder and files by entering:

```
rm -rf /var/tmp/fastpass_packages
```

## 5 Rollback

If the NetAct fast pass service packages do not support rollback, skip this section and follow NetAct backup and restore solution to restore the whole NetAct.

Before rolling back, check [Rollback guidance](#).



**Note:** This section only describes how to roll back the NetAct fast pass service package which is installed on top of NetAct 19 SP1912 and later release. About how to roll back the NetAct fast pass service packages which installed on early NetAct releases, see [Rolling back NetAct fast pass service package which is installed before NetAct 19 SP1912](#).

### 5.1 Pre-checking the service package before rollback

Before rolling back the NetAct fast pass service package, execute the following steps to do pre-check.

The pre-check result shows the following information:

- existing system environment issue in the NetAct
- the rollback capability of the service package
- services which need to be restarted after the rollback

1. Log in as the selected user to the NetAct VM where the `ne3sws_dynamicadaptation` service is running.



**Note:**

- To find the password of the selected user, see *Retrieving password of system users* in *Administering Users and Permissions*.
- To locate the right VM, see *Locating the right virtual machine for a service* in *Administering NetAct Virtual Infrastructure*.

2. Execute the following command to do the rollback pre-check for the service package:

```
/opt/oss/Nokia-fit/bin/fastpass_toolkit.sh --rollback --fp <fast pass package> --pre-check-only
```

Replace the `<fast pass package>` with the package name which you want to roll back.

Example:

```
/opt/oss/Nokia-fit/bin/fastpass_toolkit.sh --rollback --fp  
FP616_20191029T100255 --pre-check-only
```

The following command can be used to query all the installed NetAct fast pass service packages.

```
/opt/oss/Nokia-fit/bin/query_fastpass_info.sh --list
```

There are 4 possible results:

- Rollback pre-check is ok.
- Rollback is not supported for the NetAct fast pass service package.
- Rollback has dependency.
- System environment issue is found.

If rollback has dependency, FIT prints the dependent NetAct fast pass service package on the console.

An example output if pre-check is ok and no issue is found:

```
[System Environment Check]
---
No critical issue found
[Rollback Capability Check]
No rollback capability issue found
[Service Restart Needed After Rollback]
PM frontend applications
CM WAS service
---
Pre-check completed, no issue found.
```

An example output if rollback is not supported for the NetAct fast pass service package:

```
Rollback is not supported for FP616_20191029T100255
Please refer to FIT log files under /var/opt/oss/log/Nokia-fit/ for
more details
```

An example output if rollback has dependency:

```
[System Environment Check]
---
No critical issue found
[Rollback Capability Check]
This FP616_20191029T100255 is depended by below package(s), those
package(s) must be rolled back first
    1. FP659_20191126T081745
---
Pre-check completed, 1 dependent package(s) found
This FP616_20191029T100255 is depended by below package(s), those
package(s) must be rolled back first
    1. FP659_20191126T081745
Please refer to FIT log files under /var/opt/oss/log/Nokia-fit/ for
more details.
```

An example output if system environment issue is found:

```
[System Environment Check]
```

---

Failed check points: (The following issue(s) will cause the rollback fail)

1. Check self-monitoring alarms
  - Found following self-monitoring alarms
    - 10010 Database service is not working

[Rollback Capability Check]

No rollback capability issue found

[Service Restart Needed After Rollback]

PM frontend applications

CM WAS service

---

Pre-check completed, 1 critical issue(s) found

The critical issue(s) must be resolved before rollback.

Please refer to FIT log files under /var/opt/oss/log/Nokia-fit/ for more details.

If a critical system environment issue is found, the issue must be resolved before the rollback. For more information, see *Troubleshooting fast pass installation toolkit* in *Troubleshooting NetAct Administration*.

## 5.2 Rolling back NetAct fast pass service package

If the result of rollback pre-check is ok to rollback, do the following steps to roll back the NetAct fast pass service package:

1. Log in as the selected user to the NetAct VM where the `ne3sws_dynamicadaptation` service is running.



**Note:**

- To find the password of the selected user, see *Retrieving password of system users* in *Administering Users and Permissions*.
- To locate the right VM, see *Locating the right virtual machine for a service* in *Administering NetAct Virtual Infrastructure*.

2. Execute the following command to do rollback:

```
/opt/oss/Nokia-fit/bin/fastpass_toolkit.sh --not-restart --rollback --fp  
<fast pass package>
```

Replace the `<fast pass package>` with the package name which you want to roll back.

An example:

```
/opt/oss/Nokia-fit/bin/fastpass_toolkit.sh --not-restart --rollback --fp  
FP616_20191029T100255
```

3. Enter YES to start the rollback or enter NO to stop the rollback when you see the following message:

```
Rollback may destroy the integration of the network elements which are  
supported by the selected service package  
Do you want to continue? [YES/NO]
```

An example output if you enter YES:

```
THIS MAY TAKE A WHILE, PLEASE BE PATIENT WHILE OPERATION IS RUNNING.  
Please refer to FIT log files under /var/opt/oss/log/Nokia-fit/ for  
more details.  
In progress.....  
Rollback package FP616_20191029T100255 completed.  
Post check completed.  
The adaptations which are rolled back will take effect after restarting  
services.
```



**Note:**

- If rollback fails, re-try the rollback with same rollback command.
- If re-try fails, see *Troubleshooting fast pass installation toolkit* in *Troubleshooting NetAct Administration*.
- The adaptations that are rolled back take effect after restarting services. For more information on restarting services, see [Restarting services after rolling back](#).

## 5.3 Restarting services after rolling back



**Note:** The steps in this section may restart CMWAS and PM application because of the NetAct fast pass service package content which is rolled back. The restart causes service downtime. Restarting CMWAS affects CM and AoM applications. Normally, CMWAS restart takes around 30 minutes, and PM application restart takes around 2 minutes. To know the details about which services should be restarted, execute the `/opt/oss/Nokia-fit/bin/restart_services.sh --list` command.

1. Log in as the selected user to the NetAct VM where the `ne3sws_dynamicadaptation` service is running.



**Note:**

- To find the password of the selected user, see *Retrieving password of system users* in *Administering Users and Permissions*.

- To locate the right VM, see *Locating the right virtual machine for a service in Administering NetAct Virtual Infrastructure*.

## 2. Restart these services by entering:

```
/opt/oss/Nokia-fit/bin/restart_services.sh --restart
```

### Example output:

```
THIS MAY TAKE A WHILE, PLEASE BE PATIENT WHILE OPERATION IS RUNNING.  
Please refer to FIT log files under /var/opt/oss/log/Nokia-fit/ for  
more details.
```

```
In progress.....
```

```
.
```

### Details:

Status	Service
DONE	PM frontend applications
DONE	CM WAS service

```
Run pending restart completed.
```



## 6 Appendix

### 6.1 New and old NetAct fast pass service package comparison

FIT-based fast pass service package	Traditional ISO-format fast pass service package
Metadata is packaged in ZIP file	Metadata and software are packaged in ISO file
Support lightweight rollback, and no need to backup or restore the whole NetAct.	Backup or restoring the whole NetAct is mandatory.
Installation does not need to power on the Admin Server	Installation needs to power on and start from the Admin Server.
Support to install multiple fast pass service packages in one shot which saves time.	Only one service package can be installed in one time.

*Table 2: The comparison between FIT-based NetAct fast pass service package and traditional ISO-format NetAct fast pass service package*

### 6.2 Checking installed NetAct fast pass service package status

To check the installed NetAct fast pass service package status, execute the following command on the NetAct VM where the `ne3sws_dynamicadaptation` service is running with the selected user:

```
/opt/oss/Nokia-fit/bin/query_fastpass_info.sh --all
```

An example output:

Query result:

Status	Installation Time	Sub-package	Fast Pass Package
DEPLOYED	2019-12-05T10:02:11	5G_0.836.531-20191122T100227	FP661_20191122T101341
DEPLOYED	2019-12-05T10:02:11	5G_0.106.530-20191121T012748	FP661_20191122T101341
DEPLOYED	2019-12-06T06:41:36	5G19A_6.1351.550-20190826T075430	FP616_20190826T081745
DEPLOYED	2019-12-06T06:41:36	5G19A_6.8351.543-20190826T075526	FP616_20190826T081745

## 6.3 Sub-package in FIT query output

One FIT-based NetAct fast pass service package contains multiple sub-packages.

Sub-package is normally one to one mapping to network element software delivery. For some network elements, like LTE or IMS, same network element release has different network element variants and different variants have different software deliveries. For those network elements, one NetAct fast pass service package contains multiple sub-packages, and each sub-package maps to one network element variant of the same network element release.

For example, LTE19 NetAct fast pass service package, it contains 8 sub-packages and each sub-package maps to Flexi Zone Controller FDD, Flexi Zone Controller TDD, Flexi Zone Micro BTS FDD, Flexi Zone Micro BTS TDD, FSM-r3 FDD, FSM-r3 TDD, ASM FDD and ASM TDD of the same network element marketing release: LTE19.

Another example is IMS. IMS20 NetAct fast pass service package contains multiple sub-package and each sub-package maps to different network element variant of same release like Bare Metal, Cloud and MicroCFX.

There are two channels to get the sub-package information for one FIT-based NetAct fast pass service package:

1. From the NetAct fast pass service package specific document.

In early delivered NetAct fast pass service package specific document, this sub-package is mentioned as `Service Package ID`.

2. After NetAct fast pass service package is installed, execute FIT query command and find the Sub-package in the query output. For the FIT query command, see [Checking installed NetAct fast pass service package status](#).

For the NetAct fast pass service package which is installed on top of NetAct 19 SP1911 and early releases, this sub-package name is needed when you do rollback operation. For the NetAct fast pass service package which is installed on top of NetAct 19 SP1912 and later releases, this sub-package name is not used in FIT installation or rollback. For more details, see [Rolling back NetAct fast pass service package which is installed before NetAct 19 SP1912](#).

## 6.4 The maximum number of NetAct fast pass service package which can be installed together

The maximum number of NetAct fast pass service package which can be installed together is 50. You can put 50 NetAct fast pass service package ZIP files to the same folder and then install them together.

## 6.5 Restarting CM WAS server and PM front-end applications manually

**Note:**

- This section is used for installing NetAct fast pass service packages together with NetAct upgrade only.
- The steps in this section may restart CMWAS and PM application based on the installed NetAct fast pass service package content. The restart causes service downtime. Restarting CMWAS impacts CM and AoM applications. Normally, CMWAS restart takes around 30 minutes and PM application restart takes around 2 minutes. To know the detail about which services should be restarted, execute the `/opt/oss/Nokia-fit/bin/restart_services.sh --list` command.

1. Log in as the selected user to the NetAct VM where the `ne3sws_dynamicadaptation` service is running.

**Note:**

- To find the password of the selected user, see *Retrieving password of system users* in *Administering Users and Permissions*.
- To locate the right VM, see *Locating the right virtual machine for a service* in *Administering NetAct Virtual Infrastructure*.

2. Restart these services by entering:

```
/opt/oss/Nokia-fit/bin/restart_services.sh --restart
```

Example output:

```
THIS MAY TAKE A WHILE, PLEASE BE PATIENT WHILE OPERATION IS RUNNING.
Please refer to FIT log files under /var/opt/oss/log/Nokia-fit/ for
more details.
```

```
In progress.....
```

```
.
```

Details:

```
Status    Service
DONE      PM frontend applications
DONE      CM WAS service
Run pending restart completed.
```

## 6.6 Invoking FIT operation with the fpinst user by adding sudo in command

The fpinst user is not an admin user of NetAct. By default, the fpinst user has no enough privileges to do the FIT installation, rollback and query. When you execute the following FIT command with the fpinst user, you must add `sudo` at the beginning of the command:

- /opt/oss/Nokia-fit/bin/fastpass\_toolkit.sh
- /opt/oss/Nokia-fit/bin/query\_fastpass\_info.sh
- /opt/oss/Nokia-fit/bin/restart\_services.sh

When using the fpinst user without adding sudo in command, FIT prints out the error message like below:

Please use sudo to run this script.

Operation	User	Command
Install	omc	/opt/oss/Nokia-fit/bin/fastpass_toolkit.sh --not-restart --no-rollback-support --deploy /var/tmp/fastpass_packages
	fpinst	sudo /opt/oss/Nokia-fit/bin/fastpass_toolkit.sh --not-restart --no-rollback-support --deploy /var/tmp/fastpass_packages
Rollback	omc	/opt/oss/Nokia-fit/bin/fastpass_toolkit.sh --not-restart --rollback --fp FP616_20191029T100255
	fpinst	sudo /opt/oss/Nokia-fit/bin/fastpass_toolkit.sh --not-restart --rollback --fp FP616_20191029T100255
Query	omc	/opt/oss/Nokia-fit/bin/query_fastpass_info.sh --all
	fpinst	sudo /opt/oss/Nokia-fit/bin/query_fastpass_info.sh --all

Table 3: Examples of commands

## 6.7 Rolling back NetAct fast pass service package which is installed before NetAct 19 SP1912

Nokia has enhanced the FIT rollback function in NetAct SP1912. The enhancement makes rollback simpler. However, the enhancement does not work on the NetAct fast pass service packages which are installed before NetAct SP1912.

Execute steps in the following sections to roll back the NetAct fast pass service packages which are installed before NetAct SP1912.

## 6.7.1 Checking the rollback capability

1. Log in as the selected user to the NetAct VM where the `ne3sws_dynamicadaptation` service is running.

**Note:**

- To find the password of the selected user, see *Retrieving password of system users* in *Administering Users and Permissions*.
- To locate the right VM, see *Locating the right virtual machine for a service* in *Administering NetAct Virtual Infrastructure*.

2. Execute the following command, and collect all the sub-package names from the output.

```
/opt/oss/Nokia-fit/bin/query_fastpass_info.sh --list
```



**Note:** For more information about sub-package, see [Sub-package in FIT query output](#).

An example output:

Query result:

Following FIT packages are installed before NetAct 19 SP1912, please use "Sub-package" for all operations.

Status	Installation Time	Sub-package
Fast Pass Package		
DEPLOYED	2019-07-14T08:43:10	5G_0.1351.926-20190723T084351 N/A
DEPLOYED	2019-07-14T08:43:10	5G_0.18351.570-20190723T084747 N/A
DEPLOYED	2019-08-29T11:21:56	SBTS19B_ENB_9999_190711-20190724T111258
		FP635_20190724T113252
DEPLOYED	2019-08-29T11:21:56	BTSMED19B-20190722T113113
		FP635_20190724T113252

Following FIT packages are installed after NetAct 19 SP1912, please use "Fast Pass Package" for all operations.

Status	Installation Time	Fast Pass Package
DEPLOYED	2019-12-06T10:53:40	FP635_20191128T112935
DEPLOYED	2019-12-06T13:16:26	FP605_20190629T091130
DEPLOYED	2019-12-06T17:53:28	FP605_20190704T101215

The output includes two kinds of NetAct fast pass service packages:

- NetAct fast pass service package which is installed before NetAct 19 SP1912.
- NetAct fast pass service package which is installed after NetAct 19 SP1912.

Here, we only focus on the rollback of NetAct fast pass service package which is installed before NetAct 19 SP1912.

You can find the NetAct fast pass service package names in the `Fast Pass Package` column in the output, and then get all the sub-package names which belong to that NetAct fast pass service package in the `Sub-package` column.

If the value in the `Fast Pass Package` column is N/A, see the specific document of the target NetAct fast pass service package to get all the sub-package names. In the specific document of the target NetAct fast pass service package, the `Sub-package` is named as `Service Package ID`.

If there is only one sub-package for the target fast pass service package which need to be rolled back, you can skip the following steps and go to next section directly.

3. Replace the `<Sub-package>` in the following command with one of the sub-package names which are found in previous step, and then execute the command.

```
/opt/oss/Nokia-fit/bin/fastpass_toolkit.sh --rollback --sp <Sub-package>  
--pre-check-only
```

Repeat this step for all the sub-packages which are found in step 2. If any sub-package does not support rollback, this fast pass service package cannot be rolled back. Rolling back a part of sub-package makes system inconsistent.

There are 3 possible results:

- Rollback precheck is ok.
- Rollback is not supported.
- Rollback has dependency.
  - If rollback has dependency, FIT prints the dependent sub-package name or NetAct fast pass service package name in the console.
  - If all the dependent sub-packages belong to the fast pass package which you plan to roll back, it means that it is possible to roll back the NetAct fast pass service package directly. You need to invoke the rollback command as the given order.
  - If any one of the dependent sub-package does not belong to the NetAct fast pass service package which you plan to roll back, it means that it is not possible to roll back the NetAct fast pass service package directly. To roll back the NetAct fast pass service package, you must roll back the dependent package first.

An example output if rollback is ok:

```
[System Environment Check]  
---  
No critical issue found  
[Rollback Capability Check]  
No rollback capability issue found  
[Service Restart Needed After Rollback]  
PM frontend applications  
CM WAS service
```

---

Pre-check completed, no issue found.

An example output if rollback is not supported:

Rollback is not supported for 5G\_0.1351.926-20190723T08435  
Please refer to FIT log files under /var/opt/oss/log/Nokia-fit/ for  
more details.

An example output if rollback has dependency:

[System Environment Check]

---

No critical issue found

[Rollback Capability Check]

This 5G\_0.1351.926-20190723T08435 is depended by below package(s),  
those package(s) must be rolled back first

1. FP616\_20191029T100255

---

Pre-check completed, 1 dependent package(s) found

This 5G\_0.1351.926-20190723T08435 is depended by below package(s),  
those package(s) must be rolled back first

1. FP616\_20191029T100255

Please refer to FIT log files under /var/opt/oss/log/Nokia-fit/ for  
more details.

## 6.7.2 Rolling back NetAct fast pass service package installed before NetAct 19 SP1912

1. Log in as the selected user to the NetAct VM where the `ne3sws_dynamicadaptation` service is running.



**Note:**

- To find the password of the selected user, see *Retrieving password of system users* in *Administering Users and Permissions*.
- To locate the right VM, see *Locating the right virtual machine for a service* in *Administering NetAct Virtual Infrastructure*.

2. Replace the `<sub-package>` with one of the sub-package name, and then execute the following command to roll back:

```
/opt/oss/Nokia-fit/bin/fastpass_toolkit.sh --not-restart --rollback --sp  
<sub-package>
```

For more information about `<sub-package>`, see [Checking the rollback capability](#).

An example:

```
/opt/oss/Nokia-fit/bin/fastpass_toolkit.sh --not-restart --rollback --sp  
5G_0.1351.926-20190723T084351
```

3. Enter YES to start the rollback or enter NO to stop the rollback when you see the following message:

```
Rollback may destroy the integration of the network elements which are  
supported by the selected service package  
Do you want to continue? [YES/NO]
```

An example output if you enter YES:

```
THIS MAY TAKE A WHILE, PLEASE BE PATIENT WHILE OPERATION IS RUNNING.  
Please refer to FIT log files under /var/opt/oss/log/Nokia-fit/ for  
more details.  
In progress.....  
Rollback package 5G_0.1351.926-20190723T084351 completed.  
The adaptations which are rolled back will take effect after restarting  
services.
```



**Note:**

- If rollback fails, re-try the rollback with same rollback command.
- If re-try fails, see *Troubleshooting fast pass installation toolkit* in *Troubleshooting NetAct Administration*.

4. Repeat steps from step 2 for all sub-packages to complete the rollback.

### 6.7.3 Restarting services



**Note:** The steps in this section may restart CMWAS and PM application based on the NetAct fast pass service package content which is rolled back. The restart causes service downtime. Restarting CMWAS impacts CM and AoM applications. Normally, CMWAS restart takes around 30 minutes and PM application restart takes around 2 minutes. To know the details about which services should be restarted, execute the `/opt/oss/Nokia-fit/bin/restart_services.sh --list` command.

1. Log in as the selected user to the NetAct VM where the `ne3sws_dynamicadaptation` service is running.



**Note:**

- To find the password of the selected user, see *Retrieving password of system users* in *Administering Users and Permissions*.



- To locate the right VM, see *Locating the right virtual machine for a service in Administering NetAct Virtual Infrastructure*.

## 2. Restart these services by entering:

```
/opt/oss/Nokia-fit/bin/restart_services.sh --restart
```

An example output:

```
THIS MAY TAKE A WHILE, PLEASE BE PATIENT WHILE OPERATION IS RUNNING.  
Please refer to FIT log files under /var/opt/oss/log/Nokia-fit/ for  
more details.
```

```
In progress.....
```

```
.
```

Details:

Status	Service
DONE	PM frontend applications
DONE	CM WAS service

```
Run pending restart completed.
```