

Restore Backup

OPERATING INSTRUCTIONS

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Restore Backup



1 Introduction

This document describes how to restore a backup.

1.1 Prerequisites

This section describes the prerequisites, which must be fulfilled before using the procedure.

1.1.1 Conditions

The following conditions must apply:

- No other backup operation is in progress.
- The name of the backup to restore is known.
- An Ericsson Command-Line Interface (ECLI) session in Exec mode is in progress.
- For the User Data restore operation that involves MySQL data:



Restore Backup



2 Procedure

2.1 Clean Up IMM Status

Before restoring a System or User Data backup, make sure that the Information Model Management (IMM) status for DHCP or AAA is cleaned up. The cleanup operation must be performed on all PL nodes.

1. Log on to SC node, and then connect to PL node.

```
# ssh <User Name>@<MIP_OAM_IP>
```

```
SC-X:~# ssh <PL hostname>
```

2. Check the status of IPWorks services.

```
PL-X:~# ipw-ctr status all
```

3. If the DHCP service is NOT running, clean up the DHCP related IMM status.

```
PL-X:~# /opt/ipworks/dhcp/scripts/ipworks.dhcpv4 cleanup
```

4. If the AAA service is NOT running, clean up the AAA related IMM status.

```
PL-X:~# /opt/ipworks/aaa_radius/csvengine/script/ipworks.aaa_csv_engine cleanup
```

```
PL-X:~# /opt/ipworks/aaa_radius/backend/script/ipworks.aaa_backend cleanup
```

```
PL-X:~# /opt/ipworks/aaa_radius/stack/script/ipworks.aaa_radius_stack cleanup
```

```
PL-X:~# /opt/ipworks/aaa_diameter/scripts/ipworks.aaa_cleanup
```

2.2 Restore System Data Backup

To restore a System Data backup, do the following:

1. Navigate to the *BrmBackupManager* managed object, for example:

```
>dn ManagedElement=<Node Name>,SystemFunctions=1,BrM=1,BrmBackupManager=SYSTEM_DATA
```

2. Specify the backup to restore:

```
(BrmBackupManager=SYSTEM_DATA) >BrmBackup=system_20150616
```



3. Start the restore operation:

Note: Be careful to perform the restore operation. Because the restore operation cannot be cancelled after it starts.

```
(BrmBackup=system_20150616) > restore
```

The system returns output `true` or `false`.

Attention!

A cluster reboot is automatically triggered when restoring a System Data backup. The resulting in-service performance impact corresponds to the time required for a cluster to restart after reboot.

4. Verify that the backup was successfully restored, for example:

```
(BrmBackup=system_20150616) > show -v
```

```
BrmBackup=system_20150616
backupDescriptor="version: 1.2\nbackupName: system_20150616\nbackupType: BRM_SYSTEM_DATA\ncreationType: MANUAL" <read-only>
backupName="system_20150616" <read-only>
brmBackupId="system_20150616"
creationTime="2015-06-16T09:17:51" <read-only>
creationType=MANUAL <read-only>
status=BRM_BACKUP_COMPLETE <read-only>
asyncActionProgress=[] <empty> <read-only> <deprecated>
progressReport <read-only>
  actionId=3 <read-only>
  actionName="RESTORE" <read-only>
  additionalInfo=[] <empty> <read-only>
  progressInfo="PERMIT_PHASE is completed" <read-only>
  progressPercentage=33 <read-only>
  result=NOT_AVAILABLE <read-only>
  resultInfo="" <read-only>
  state=RUNNING <read-only>
  timeActionCompleted="1970-01-01T13:00:00" <read-only>
  timeActionStarted="2015-06-16T10:35:52" <read-only>
  timeOfLastStatusUpdate="2015-06-16T10:35:56" <read-only>
swVersion[@1] <read-only>
  description="ERIC-COREMW_RUNTIME" <read-only>
  productionDate="2015-05-15T04:53:53" <read-only>
  productName="ERIC-COREMW_RUNTIME" <read-only>
  productNumber="CXP9020355_2" <read-only>
  productRevision="R1A16" <read-only>
  type="MW" <read-only>
```

Note: When performing a System Data backup restore, the restore progress can be monitored (refer to *View Progress Report*) until the system reboot is triggered. After the system is rebooted, the progress report is reset to default values.

Proceed with the next step after the system is rebooted successfully.

The system is going down for reboot NOW! Remote host closes the connection to 192.168.10.11.



5. Create the link and folder for `ss7caf` on SC nodes manually.

Execute the following commands on both SC-1 and SC-2:

```
# ln -s /storage/system/config/ss7caf-ana90137/etc
/opt/sign/etc
```

```
# ln -s /storage/no-backup/ss7caf-ana90137/log
/opt/sign/log
```

```
# mkdir -p /opt/sign/cnf_template
```

6. Replace the `ipworks_sql.conf` file.

Execute the following command on SC-1 and SC-2.

```
# cp /opt/ipworks/ss/db/ipworks_sql.conf /opt/ipworks/
mysql/db/ipworks_sql.conf
```

7. If the backup you restored contains the IPWorks software, do the following:

- a. Start MySQL NDB cluster manually on SC-1 or SC-2.

```
# /etc/init.d/ipworks.mysql start-ndbcluster
```

- b. Perform health check.

For information on how to check service status, refer to *IPWorks Manual Health Check*.

If some of the services cannot work normally, you can choose a right user data to restore (see Section 2.3 on page 5), then IPWorks will be back to a health status.

2.3 Restore User Data Backup

To restore a User Data backup:

1. For the user data restore that includes MySQL data, additional steps are required:

- a. Check `drbd` role on both SC nodes, make sure that SC-1 is the primary `drbd`.

```
SC-1:~ # lde-info -t drbd
```

Primary

```
SC-2:~ # lde-info -t drbd
```

Secondary

- b. If SC-2 is the primary `drbd`, reboot SC-2.



```
SC-2:~ # reboot
```

After SC-2 reboot, check whether SC-1 changes to the primary drbd.

- c. Check whether MySQL is working normally on SC node.

```
SC-X:~ # /usr/local/mysql/bin/mysql -P
3307 --protocol=tcp -hipw_sql
```

For example:

```
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 191
Server version: 5.6.31-ndb-7.4.12-cluster-commercial-advanced MySQL Cluster Server

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

- d. Make sure the following file size is NOT 0 on SC nodes.

```
/cluster/ipworks/mysql-cluster/sqlnode/mysql/user.MYD
```

If the file size is already 0, consult the next level of maintenance support.

2. Navigate to the *BrmBackupManager* managed object, for example:

```
>dn ManagedElement=<Node Name>,SystemFunctions=1,BrM=1,BrmBackupManager=USER_DATA
```

3. Specify the backup to restore:

- Restore a backup that does not include MySQL data, for example:

```
(BrmBackupManager=USER_DATA) >BrmBackup=testBackup_
20150616
```

- Restore a backup that includes MySQL data, for example:

```
(BrmBackupManager=USER_DATA) >BrmBackup=ndb_testBack
up_20150616
```

4. Start the restore operation:

Note: Be careful to perform the restore operation. Because the restore operation cannot be cancelled after it starts.

```
(BrmBackup=testBackup_20150616) >restore
```



The system returns output `true` or `false`.



Attention!

During restoring a backup that includes MySQL data, the traffic of ENUM, provisioning and EPC AAA will be impacted.

5. Verify that the backup was successfully restored, for example:

```
(BrmBackup=testBackup_20150616) >show -v
```

The following is an example output:

```
BrmBackup=testBackup_20150616
  backupDescriptor="version: 1.2
backupName: testBackup_20150616
backupType: BRM_USER_DATA
creationType: MANUAL
creationTime: 2015-06-16 06:47:35
storageOwner: IPWorks_BRF
swVersion: ERIC-COREMW_RUNTIME-CXP9020355_1-R8C01|MW|2015-05-15T04:53:53|R8C01|CXP9020355_1|ERIC-COREMW_RUNTIME
" <read-only>
  backupName="testBackup_20150616" <read-only>
  brmBackupId="testBackup_20150616"
  creationTime="2015-06-16T06:47:35" <read-only>
  creationType=MANUAL <read-only>
  status=BRM_BACKUP_COMPLETE <read-only>
  asyncActionProgress <read-only>
    actionId=3 <read-only>
    actionName="RESTORE" <read-only>
    additionalInfo=[] <empty>
    progressInfo="PERMIT_PHASE is completed" <read-only>
    progressPercentage=33 <read-only>
    result=NOT_AVAILABLE <read-only>
    resultInfo="" <read-only>
    state=RUNNING <read-only>
    timeActionCompleted="1970-01-01T06:00:00" <read-only>
    timeActionStarted="2015-06-16T07:35:52" <read-only>
    timeOfLastStatusUpdate="2015-06-16T07:35:56" <read-only>
  progressReport <read-only>
    actionId=3 <read-only>
    actionName="RESTORE" <read-only>
    additionalInfo=[] <empty>
    progressInfo="PERMIT_PHASE is completed" <read-only>
    progressPercentage=33 <read-only>
    result=NOT_AVAILABLE <read-only>
    resultInfo="" <read-only>
    state=RUNNING <read-only>
    timeActionCompleted="1970-01-01T06:00:00" <read-only>
    timeActionStarted="2015-06-16T07:35:52" <read-only>
    timeOfLastStatusUpdate="2015-06-16T07:35:56" <read-only>
  swVersion[@1]
    description="ERIC-COREMW_RUNTIME" <read-only>
    productionDate="2015-05-15T04:53:53" <read-only>
    productName="ERIC-COREMW_RUNTIME" <read-only>
    productNumber="CXP9020355_1" <read-only>
    productRevision="R8C01" <read-only>
    type="MW" <read-only>
```



Note: If the restore failed, try to start MySQL NDB cluster by executing `/etc/init.d/ipworks.mysql start-ndbcluster`, and then perform the User Data restore again. If the issue still remains, consult the next level support.

6. Make the backup take effect.

Note: Check the ENUM/DNS/SS/EPC AAA server:

- During the restore process, the used server will be stopped. After restore, the server will be started.
- But if the server is not used before the restore, the server is still stopped. Start them manually after restore if needed.

For DNS:

To make the DNS record work, update the `dnsserver` in IPWorks CLI, for example:

```
SC-1:~ # ipwcli
IPWorks>Login: <username>
IPWorks> Password:*****
Login to server successful.
The last successful login time of this user is 2015-06-16 07:45:07
IPWorks> list dnsserver
[DnsServer dns1]
  Partition: active
  Name: dns1
  Address: 169.254.43.15
  PrimaryAddress: 169.254.43.15
  DnsName: dns1.test.com
  PrimaryDnsName: dns1.test.com
  Filename: named.conf
  AlgServerType: false
  Status: On 06/16/15 at 07:44:42 server is 'running'
  ExportNeeded: false

IPWorks> update dnsserver dns1 -rebuild true
Result of performing an export is:
Exported the zone [MasterZone test.com]
Exported configuration for [DnsServer dns1]
Updated the configuration for 'DNS' server 'dns1'.
```

For ENUM:

When ENUM uses the Number Portability (NP) function, to make the backup take effect, restart the SS7 stack manually on an SC. For example:

```
amf-adm lock safSu=PL-3,safSg=NWA,safApp=ERIC-ss7caf.core
amf-adm lock-in safSu=PL-3,safSg=NWA,safApp=ERIC-ss7caf.core
```



```
amf-adm unlock-in safSu=PL-3,safSg=NWA,safApp=ERIC-ss7caf.core  
amf-adm unlock safSu=PL-3,safSg=NWA,safApp=ERIC-ss7caf.core
```

```
amf-adm lock safSu=PL-4,safSg=NWA,safApp=ERIC-ss7caf.core  
amf-adm lock-in safSu=PL-4,safSg=NWA,safApp=ERIC-ss7caf.core  
amf-adm unlock-in safSu=PL-4,safSg=NWA,safApp=ERIC-ss7caf.core  
amf-adm unlock safSu=PL-4,safSg=NWA,safApp=ERIC-ss7caf.core
```

For EPC AAA:

To make the backup take effect, restart the SS7 stack manually as the same as the steps for ENUM.

For Geographic Redundancy:

After restoring the user data backup, the user data **MUST** be synchronized between two sites before implementing geographic redundancy function. For more information on who to synchronize data between two sites, refer to the section *MySQL Replication for Geographic Redundancy Failed On All Sites* in *IPWorks Troubleshooting Guideline*.