

vMRF Backup and Restore Guideline

Virtual Multimedia Resource Function

User Guide

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1 Automatic Backup and Restore

vMRF performs automatic configuration backup after configuration changes. To prevent unnecessary backup operations, a new configuration is saved after an 80-second wait period following the most recent change. The 10 latest configuration backups are stored in time-stamped files in `/cluster/storage/configurationbackups/`. The file naming convention is the following:

```
<YYYYMMDD>_<hhmmss>_mrf.tar.gz
```

The copy of the latest backup file is also saved as in the same directory. This file is synchronized across all VMs of a cluster to enable any new SC to restore configuration after cluster restart.

When the maximum number of backup files is reached, the oldest backup file is deleted before a new backup is stored.

vMRF can perform automatic configuration restore if all VMs in a cluster reboot simultaneously. In this case, the new SC VM looks for `mrsv_config.tar.gz` in `/cluster/storage/configurationbackups/` and imports the configuration to the VNF, if the file exists.



2 Manual Backup and Restore

It is possible to create system backups and recover the system manually. During the manual backup and restore procedure, node credentials, trusted certificates, and configurable data from the vMRF Managed Object Management (MOM) are exported from and imported to the VNF.

2.1 When to Make a Backup

It is recommended to periodically make a backup allowing for recovery.

A system backup must be made in the following cases:

- A work order is received, or this instruction is referred to from another instruction.
- Before the manual vMRF upgrade process is started.
- After a successful vMRF upgrade process.
- Major changes occur in the system configuration due to modifications in the network.
- After a sequence of small modifications, when the configuration is considered to be stable.

2.2 Backup Procedure

The backup procedure covers all the steps to make a successful backup of the system. During backup, node credentials, trusted certificates, and configurable data from the vMRF MOM model is exported.

Prerequisites:

- The external location where the backup is stored is agreed on.
- The user ID, password, and O&M IP address of the node are known.
- The network configuration is not changed during the backup.
- A configured and operational vMRF VNF is available and you can log in to it as emergency user, using SSH.

To export configuration data, perform the following steps:



Steps

1. Open an SSH connection to the O&M IP address of the vMRF VNF instance using the following command:

```
ssh <user ID>@<O&M IP address>
```

2. Run the following command:

```
/opt/mrf_director/mrf_export_conf.py <file name without extension>
```

The *<file name without extension>* is the full path to the file into which you want to export the configuration data.

Result

The configuration data is exported into a `.tar.gz` archive file.

3. Copy the exported configuration file out of the file system of the VNF using, for example, `scp`:

```
scp <user ID>@<O&M IP address>:/home/<user ID>/mrf_conf.tar.gz .
```

Result

The example configuration file `mrf_conf.tar.gz` is copied from the vMRF VNF to the current directory.

2.3 When to Restore

The restore process must be started when the node cannot retain the normal operational mode by using normal Operation and Maintenance (O&M) procedures, or the node must be restored to an earlier state. It is also recommended to re-deploy a VNF from a configuration backup when troubleshooting the existing VNF is too time-consuming.

2.4 Restore Procedure

The restore procedure described in this section covers all the steps to make a successful recovery of the system. During recovery, node credentials, trusted certificates, and configurable data of the vMRF MOM model is imported to a vMRF VNF. If the configuration file contains an MO attribute that does not exist in the VNF, the MO attribute of the configuration file is discarded. If the VNF contains an MO attribute that does not exist in the configuration file, the default value of the MO is used in the restored VNF.

2.4.1 Restore During Deployment

Configuration data can be restored during deployment, which means that the necessary configuration data is imported into the VNF during the instantiation



step. For more information on this restore method, refer to the relevant *deployment instructions*.

2.4.2 Restore After Deployment

This section describes the case when configuration data is restored to a newly deployed VNF.

Prerequisites:

- The VNF is clean, that is, it does not contain for example network data. For more information, refer to the relevant *deployment instructions*.
- The file containing vMRF configuration data is available on the external location from where the backup is restored.
- The user ID, password, and O&M IP address of the node to be restored are known.
- You can log in to vMRF VNF as emergency user, using SSH.

Steps

To import configuration data, perform the following steps:

1. Open an SSH connection to the O&M IP address of the vMRF VNF instance using the following command:

```
ssh <user ID>@<O&M IP address>
```

2. If a configuration data file is not available in the file system of the VNF, copy a file to the VNF using, for example, the `scp` command:

```
scp mrf_conf.tar.gz <user ID>@<O&M IP address>:/home/  
<user ID>/
```

Result

The configuration file `mrf_conf.tar.gz` is copied from the current directory to the `/home/<user ID>/` folder in the file system of the vMRF VNF.

3. Run the following command:

```
/opt/mrf_director/mrf_import_conf.py /home/<user ID>/  
mrf_conf.tar.gz
```

2.4.3 Post-restore Checks

Finish the restore procedure by issuing the following commands:



Steps

1. Check the VNF for IP address collisions with the following command:

```
cluster run cli_tool ipp conf
```

2. Check the operational state of the SCTP links with the following command:

```
cluster run cli_tool mrf_appl sctp-status
```

3. Check the signaling state of the VNF with the following command:

```
cluster run cli_tool mrf_appl status
```