A MITEL
PRODUCT
GUIDE

Unify OpenScape 4000 Assistant V11

Disaster Recovery

Disaster Recovery

Administrator Documentation
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Mitel

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1 Overview

1.1 Feature Description

The OpenScape 4000 offers a functionality to synchronize autonomous Disaster Recovery System (DRS).

This functionality is an additional and optional possibility to extend availability and reliability of an OpenScape 4000 HW/SW solution.

In the case of a failure of the active OpenScape 4000 Communication Server, this system can be activated by the administrator and takes over the functions of the main system. Functioning IP Routing is a prerequisite.

NOTE: Failure refers to an event which may last for longer period of the time, e.g. caused by floods, fire or storm.

In combination with AP emergency and the OpenScape 4000 Duplex capability, the Disaster Recovery functionality guarantees the high availability of the OpenScape 4000 system.

The following table gives an overview of possible failure situations and the appropriate OpenScape 4000 Survivability solutions.

Failure	**Standby Mode**	**OS4K Survivability Solution**	
Hardware fault in processor board	Standby	Duplex Call Control	Hot
Soft/Hard Restart	Standby	Duplex Call Control	Hot
WAN failure for remote branches	Standby	Signaling Survivability	Hot
	Standby	AP-Emergency	Warm
Complete failure of main system	Standby	AP-Emergency (Automatic activation but survivability for maximum 30 days)	Warm
	Standby with synchronized database/software	**Disaster Recovery** (activation by administrator and no time limit on survivability	Cold

The further key difference and benefit to the existing Duplex and Survivability (APE) deployment modes is that this feature requires **less bandwidth and lower RTT** (Round Trip Time) for the Cross Channel and as well an “activated” Disaster Recovery System can be fully configured and has no functional limits.

The listed characteristics are:

- The DRS is a HW/SW clone of productive system, here the main system (EcoServer / Branch) is meant and considered.
- RMX / Call Processing Data Base synchronization are scheduled: DRS polls (every 10 minutes) and pulls backups from productive system.
- Activation and deactivation requires **manual** interaction.
- SW supply for DRS has to be performed **manually!** It means that Major / Minor / Fix release package as well as HotFixes for Platform, Assistant and CSTA has to be transferred and activated on both nodes.
  Exception: RMX HotFixes are automatically transferred from productive system and automatically activated via the DSR sync mechanism.
- Only Duplex Deployments are supported.
- Pure Classic Host Shelf and IPDA Deployments are possible, in which IPDA is the preferred setup.
- IPDA HW Shelves themselves are not covered in this backup concept, only the main (RMX/Assistant) system.
- Customer and IPDA (Voice) LAN has to operate in different networks. (Only in case of used IPDA).
- Backup Server can be intern (Assistant of productive system) or extern SFTP Server.
- IPDA Network of DRS must be isolated by L2 Switch or manual unplug cable at DRS.
- CO Trunks (classic or IP) has to be on IPDA shelves so the DRS can take over control otherwise further (manual) cabling would be necessary.
- DRS needs an own license file due to the separate ALI (Advanced License identifier). Similar to the Separated Duplex setup.
- DRS will have the **same L-number**. Overall, you will get 2+2 License files due to the 4 different ALIs of each node.

1.2 Definitions

- Productive (Main) System is the normally operating OpenScape 4000 HW Core System.
- DRS – Disaster Recovery System is the “**cold** Stand-By” OpenScape 4000 HW Core System.
- Disaster Event is the event of Productive system is a breakdown standard, due whatever reason, e.g. long term power outage, fire, flooding, or other destruction.

1.3 Prerequisite

- Any OS4K Platform Portal, CSTA, Assistant configuration change on Productive System has to be applied also on the DRS.
- SW on the DRS has to be updated after Productive System before the next backup / restore cycle.
- Identical hardware for productive and DRS: EcoServer or Branch.
- CCA/CCB IP Addresses must be identical on both systems.
- DRS process has to be well documented in customer operating manual and should be tested in regular way to verify the functionality.
- RMX HotFixes activated on productive system are automatically synchronized to the DRS. Other HotFixes have to be activated on both, the productive system and DRS.
- Software supply: Major or Minor software release upgrades have to be carried out on both, productive system and DRS. The synchronization must be disabled during upgrade and until both systems are upgraded.

1.4 Assumption and Recommendation

The application of the feature into customer OS4K solution requires a solid and thorough planning during the solution design and it requires regular monitoring after installation.

The feature description and the following How-to is focusing on the system IP configuration and the Assistant DB backup functionality, it’s not intended as a complete customer infrastructure design or planning document, this typically should be worked out during the solution design phase.

The design and configuration of the whole OS4K system is not in scope of this document as well as the used L2/L3 equipment or configuration is not part of this description.

It’s considered that this functionality can be used as an alternative or on top approach to extend the availability and reliability, but due to the “manual” activation, monitoring and infrastructure pre-requisites it should be clearly delimit to the full autonomous OS4K “Separated” Duplex and/or APE features.

2 How to setup DRS

The following generic IP/ ethx configuration description has to be fulfilled:

NOTE: Please check *Backup & Restore* for further details.

2.1 Productive System

- Node 1 & Node2: **eth0** is for the Customer LAN:
  - Node 1 Physical IP Address XXX.XXX.XXX.XAA
  - Node 2 Physical IP Address XXX.XXX.XXX.XAB
  - Portal IP Address XXX.XXX.XXX.XAC
  - Assistant IP Address XXX.XXX.XXX.XAD
  - CSTA IP Address XXX.XXX.XXX.XAE

- Node 1 & Node2, **eth2** is for the IPDA LAN:
  - Node 1 Physical IP Address **YYY**.XXX.XXX.XAA
  - Node 2 Physical IP Address **YYY**.XXX.XXX.XAB
  - CCA IP Address **YYY.XXX.XXX.XAC**
  - CCB IP Address **YYY.XXX.XXX.XAD**
  - NGS IP Address **YYY**.XXX.XXX.XAE

2.2 Disaster Recovery System

- Node 1 & Node2: **eth0** is for the Customer LAN:
  - Node 1 Physical IP Address XXX.XXX.XXX.XAF
  - Node 2 Physical IP Address XXX.XXX.XXX.XAG
  - Portal IP Address XXX.XXX.XXX.XAH
  - Assistant IP Address XXX.XXX.XXX.XAI
  - CSTA IP Address XXX.XXX.XXX.XAJ

- Node 1 & Node2, **eth2** is for the IPDA LAN:
  - Node 1 Physical IP Address **YYY.**XXX.XXX.XAF
  - Node 2 Physical IP Address **YYY**.XXX.XXX.XAG
  - CCA IP Address **YYY.XXX.XXX.XAC**
  - CCB IP Address **YYY.XXX.XXX.XAD**
  - NGS IP Address **YYY**.XXX.XXX.XAJ

CCA & CCB IP Addresses must be same on both systems productive and standby system.

NOTE: Make sure that the IPDA interface from Disaster Recovery system is **not** connected / plugged into network till the main system is active and operating!

The productive system and IPDA components behavior of an unintended, uncontrolled “parallel” activation of the IPDA I/F of DRS is unpredictable and very likely it leads to the system outages.

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3 Configuration

3.1 Configuration of the DR Backup Server

The storage for DR Backups can be the Productive System itself or alternatively an external SFTP Server.

1. Navigate into the OpenScape 4000 Assistant UI to the SW Management Backup & Restore Page and configure the Backup Server IP Address and credentials.

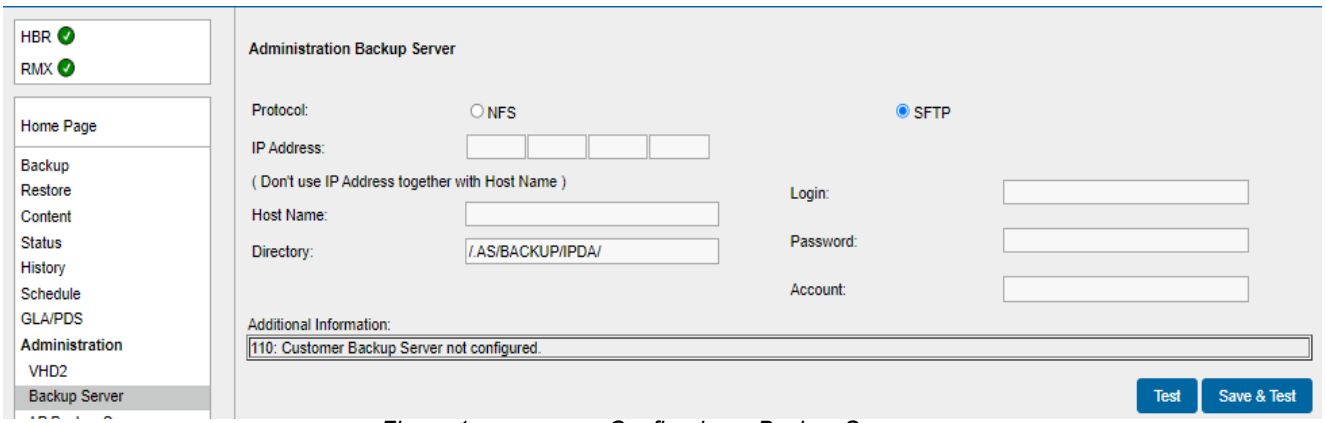

Figure 1 Configuring a Backup Server

2. Add the appropriate schedule cycle of the backup creation, typically daily.

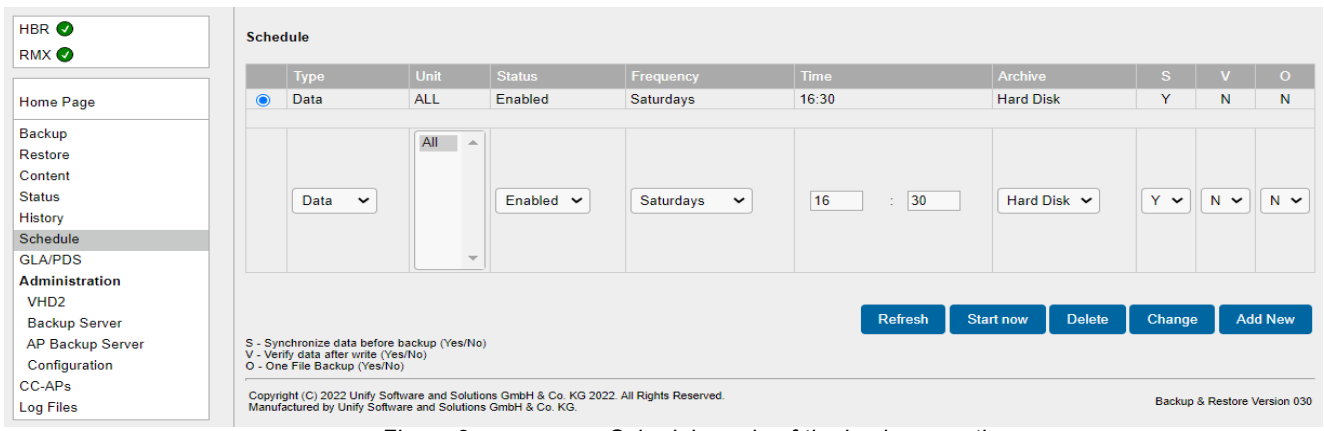

Figure 2 Schedule cycle of the backup creation

3.2 Configuration of the Disaster Recovery System

Configuration of the Disaster Recovery System is done from ***Assistant --> Expert Mode --> SSH connection to Assistant***.

Disaster Recovery system will detect the backup set available on the server by polling and pull the backup's. Subsequent an automatic restore will be performed on the DRS server to save all RMX configurations of the Productive system.

The configuration `/opt/dis/bin/configure.sh` on the DRS Assistant needs to be executed to configure the mechanism.

The configuration script will request the following input:

- ipAddr_hName: <IP Address or hostname of Backup Server>
- dir: folder from the backup server
- login: username of backup server
- passwd: password from backup server

e.g.:

OS4K-Assistant:~ # /opt/dis/bin/configure.sh

ipAddr_hName: 10.131.0.1

dir: /home/GVSShare/ST76

login: <user>

passwd: <password>

In order to verify this functionality please check `tail -f /var/dis/log/com.log` command or the OS4K Standby System Assistant GUI in Backup page

```
[Assistant-linux:/var/dis/log # tailf com.log
[[2017-05-23 12:42:18 disd.sh:1972] Checking available Data-Backups ...
[2017-05-23 12:42:18 disd.sh:1972] /opt/hbr/sys/Archive -c content -I subtype=data -O date_iso -A SRV
[2017-05-23 12:42:22 disd.sh:1972] rc=0
[2017-05-23 12:42:22 disd.sh:1972] Server contents: '2017-05-23 12:39'
[2017-05-23 12:42:22 disd.sh:1972] Last restore:    ''
[2017-05-23 12:42:22 disd.sh:1972] Last status:     ''
[2017-05-23 12:42:22 disd.sh:1972] Failure counter: '0'
[2017-05-23 12:42:22 disd.sh:1972] Restore will be done
```

```
[2017-05-23 12:42:22 disd.sh:1972] Saving PDS to GLA ...
[2017-05-23 12:42:22 disd.sh:1972] /opt/hbr/rmx/
rmx_backup_restore -t gla -c copy -A HD-PDS GLA
[2017-05-23 12:42:46 disd.sh:1972] rc=0
[2017-05-23 12:42:46 disd.sh:1972] Starting restore ...
[2017-05-23 12:42:46 disd.sh:1972] /opt/hbr/sys/BackupSet -c
restore -A SRV -k 000 -p RMX -o WAIT_EXEC
[2017-05-23 12:45:32 disd.sh:1972] rc=0
[2017-05-23 12:45:42 disd.sh:1972] RMX is active after 0 seconds
[2017-05-23 12:45:42 disd.sh:1972] RMX is loaded from HD-PDS
[2017-05-23 12:45:42 disd.sh:1972] Restore was successful
[2017-05-23 12:55:43 disd.sh:1972] Checking available Data-
Backups ...
[2017-05-23 12:55:43 disd.sh:1972] /opt/hbr/sys/Archive -c
content -I subtype=data -O date_iso -A SRV
[2017-05-23 12:55:46 disd.sh:1972] rc=0
[2017-05-23 12:55:46 disd.sh:1972] Server contents: '2017-05-23
12:39'
[2017-05-23 12:55:46 disd.sh:1972] Last restore:    '2017-05-23
12:39'
[2017-05-23 12:55:46 disd.sh:1972] Last status:     'SUCCESSFUL'
[2017-05-23 12:55:46 disd.sh:1972] Failure counter: '0'
[2017-05-23 12:55:46 disd.sh:1972] Restore will not be done
```

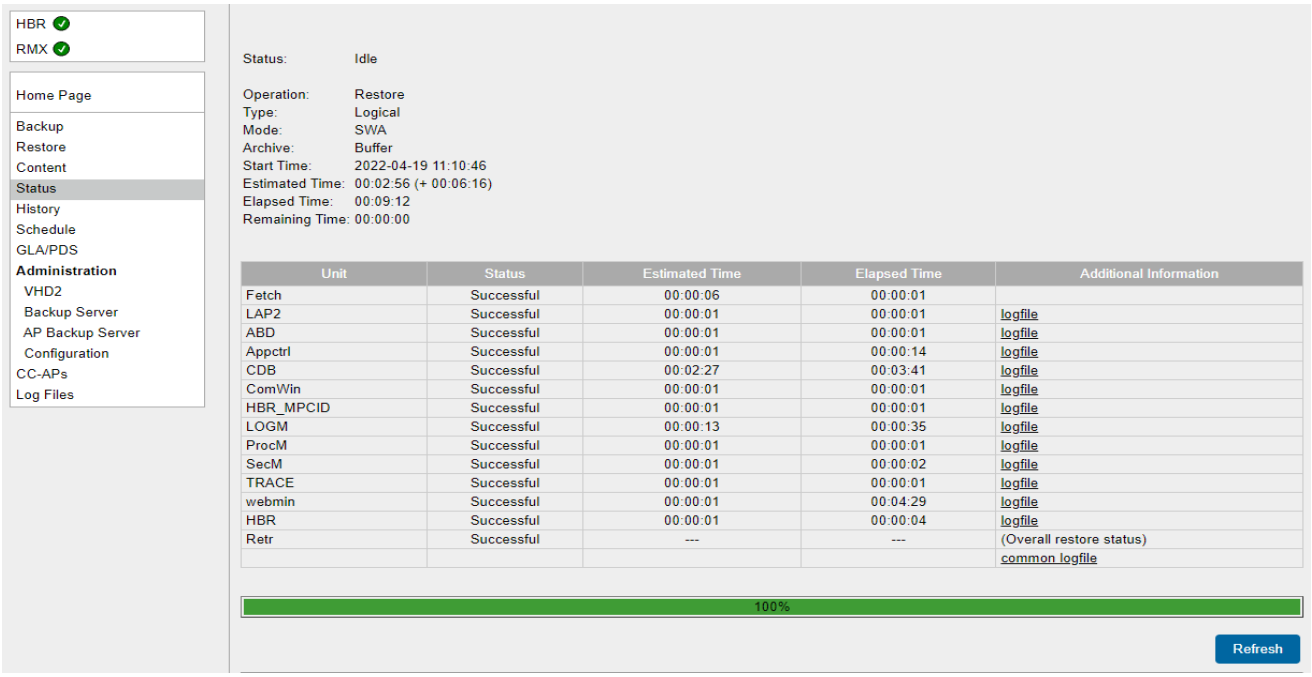

Figure 3 Backup & Restore - Status

4 Disaster Recovery Case - Disaster Event

As mentioned above the activation of the DRS system requires manual action.

NOTE: The activated DRS is fully functional system, means any configuration changes on the DRS will be applied persistently and the DRS HD.

A re-synch to former productive system doesn't happen automatically. The re-build of the former productive to a new "DRS" can be considered but is manual configuration.

NOTE: The CSTA IP address differs between productive system and DRS system. Therefore in case the Disaster Event is triggered, any application(s) using the CSTA IP address must be changed accordingly via their appropriate Application configuration.

4.1 IPDA Deployment

The productive system is offline or isolated from the IP network:

1. Verify that productive system cannot get online again, e.g. but Power off or remote disable Remote L2 switch/port of IPDA network.
2. Enable the IPDA network of the DRS.
3. Optional: Trigger and execute a "complete" reboot the DRS system to refresh or announce the new IP/MAC pair of the CCA/CCB addresses.

4.2 Classical Host Shelf Deployment

The productive system is offline.

1. Verify that productive system cannot get online again, e.g. but Power off
2. Enable the DRS by manual re-cabling of host shelves, e.g. LTU cabling or alternative by some kind proprietary main distributor switch over mechanism.
3. Optional: Start a reload the DRS system to activate the CO-Connections.

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