

# Mimix for AIX Runbook for Skytap

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# About This Runbook

## Purpose and Audience

This Runbook provides detailed operational, switching and troubleshooting procedures customized to the specifications of your managed availability solution. The procedures specified in this document must be adhered to for efficient operation of managed availability and maximize availability in your environment. Failure to comply with recommendations listed in this document may result in loss of data, less than optimum performance, and/or the unavailability of critical resources.

## Ownership

The owner of this document named on the cover page is responsible for maintaining the procedures to comply with your availability goals and objectives. This document must be revised when changes, ranging from a simple update fix to major software or hardware changes, occur in your managed availability environment.

## Maintaining the Runbook

There are many changes that can occur in your managed availability environment that can affect the effectiveness of your solution. Some of the more common changes that can occur are:

- Network changes or additions - such as new hardware or communication components - can impact the switching of users to a remote system.
- Adding new filesystems or logical volumes.
- New Operating system technology fixes could affect performance and the configuration of RecoverNow for AIX.

When changes need to be made to this Runbook, contact the owner listed on the cover in your company, and notify them of discrepancies, changes and enhancements.

## Revision Changes

Indicate the date and type of changes made to this document.

Revision Date	Version #	Revised By	Description of Revision(s)
3/4/2021	1.0	Ricard Wessels	Initial version



# AIX Systems Information

Information on the system architecture

<b>Production Server Hostname</b>	<b>OS Level</b>	<b>Host IP Address</b>	
BICMAC	AIX 7.1	10.0.1.9	

<b>Recovery Server Hostname</b>	<b>OS Level</b>	<b>Host IP Address</b>	
BICMACCONT	AIX 7.1	10.0.201.9	



# Protected Data

The following data has been identified as mission-critical and will be managed/protected by Mimix for AIX.

Production Server	Production VG	Replicated FileSystem	Recovery Server	Replica VG
BICMAC	db2vg	/db2data	BICMACCONT	db2vg



# Installed Software

The following RecoverNow for AIX software is installed on the Production and Recovery servers. Mimix for AIX software resides in the /usr/sprt directory.

Product	Production Server	Recovery Server
Mimix Assure for AIX AUI/VSP	51	51
Efix	ES02642	ES02642

## Customization:

### Application Start/Stop Scripts:

The Application start and stop is performed manually by the customer.

Mimix for AIX is started from /etc/inittab upon system startup.

```
securityboot:2:bootwait:/etc/rc.security.boot > /dev/console 2>&1  
rc:23456789:wait:/etc/rc 2>&1 | alog -tboot > /dev/console # Multi-User checks  
srcmstr:23456789:respawn:/usr/sbin/srcmstr # System Resource Controller  
rctcpip:23456789:wait:/etc/rc.tcpip > /dev/console 2>&1 # Start TCP/IP daemons  
sprt:2:wait:/usr/sprt/bin/sccfgd_boot >> /var/log/EchoStream/bootup.log 2>&1  
platform_agent:2:once:/usr/bin/startsrc -s platform_agent >/dev/null 2>&1  
aso:23456789:once:/usr/bin/startsrc -s aso  
rcnfs:23456789:wait:/etc/rc.nfs > /dev/console 2>&1 # Start NFS Daemons  
nimsh:2:wait:/usr/bin/startsrc -g nimclient >/dev/console 2>&1
```



## Snapshot customization

Customer has asked that snapshot be automated as follows:

```
# COPYRIGHT International Business Machines Corp. 1989,1994
# All Rights Reserved
#
# US Government Users Restricted Rights - Use, duplication or
# disclosure restricted by GSA ADP Schedule Contract with IBM Corp.
#
# IBM_PROLOG_END_TAG
#
# COMPONENT_NAME: (CMDCNTL) commands needed for basic system needs
#
# FUNCTIONS:
#
# ORIGINS: 27
#
# (C) COPYRIGHT International Business Machines Corp. 1989,1994
# All Rights Reserved
# Licensed Materials - Property of IBM
#
# US Government Users Restricted Rights - Use, duplication or
# disclosure restricted by GSA ADP Schedule Contract with IBM Corp.
#
#0 3 * * * /usr/sbin/skulker
#45 2 * * 0 /usr/lib/spell/compress
#45 23 * * * ulimit 5000; /usr/lib/smdemon.cleau > /dev/null
0 11 * * * /usr/bin/errclear -d S,0 30
0 12 * * * /usr/bin/errclear -d H,00
0 8 * * 1,2,3,4,5,6 /usr/sbin/scripts/CreateSnapshot
50 14 * * 1,2,3,4,5,6 /usr/sbin/scripts/DropSnapshot
0 15 * * 1,2,3,4,5,6 /usr/sbin/scripts/CreateSnapshot
0 20 * * 1,2,3,4,5,6 /usr/sbin/scripts/DropSnapshot
0,5,10,15,20,25,30,35,40,45,50,55 * * * * /usr/sbin/dumpctrl -k >/dev/null 2>/dev/null
0 15 * * * /usr/lib/ras/dumpcheck >/dev/null 2>&1
55 23 * * * /var/perf/pm/bin/pmcfg >/dev/null 2>&1 #Enable PM Data Collection
#Ejecucion de nmon
0,5,10,15,20,25,30,35,40,45,50,55 * * * * /usr/local/bin/nmon_diario_check.sh
0 0 * * * /usr/local/bin/nmon_diario.sh
0,5,10,15,20,25,30,35,40,45,50,55 * * * * /usr/local/bin/nmon_mensual_check.sh
0 0 1 * * /usr/local/bin/nmon_mensual.sh
0 3 * * 0 /usr/local/bin/nmon_rotate_180days.sh
#
```



```

#!/bin/ksh93

PROGRAMNAME=CreateSnapshot
exec 2>> /var/log/EchoStream/${PROGRAMNAME}.out
set -x
echo "-----"
echo "Creating EchoStream Snapshot"
/usr/bin/date

ExitMessage="ERROR: No snapshot has been created!"
Context=1
ArgContextID="$1"
ODMDIR=/etc/objrepos
INSTALL_DIR=/usr/scrt

Exit()
{
  echo "-----"
  echo $ExitMessage
  echo "-----"
  exit $1
}

  ${INSTALL_DIR}/bin/scrt_ra -W -C1
  ${INSTALL_DIR}/bin/scconfig -SC1
  ${INSTALL_DIR}/bin/scrt_ra -X -C1
  if [ $? != 0 ]; then
    echo "Unable to create snapshot"
    Exit 5
  fi

  echo "Creating snapshot for context ${Context}..."
  ${INSTALL_DIR}/bin/rtmnt -f -C ${Context} 2>&1
  if [ $? != 0 ]; then
    echo "Failed mounting filesystems over snapshot."
    Exit 6
  fi

ExitMessage="Success: Snapshot has been created!"

##### START DB2 #####
su - db2inst1 -c "db2start"

Exit 0

#!/bin/ksh
#####STOP DB2 here #####
PROGRAMNAME=DropSnapshot

```



```

exec 2>> /var/log/EchoStream/${PROGRAMNAME}.out
set -x
echo "-----"
echo "-----Stopping DB2 -----"
su - db2inst1 -c "db2 force application all"
su - db2inst1 -c "db2 terminate"
su - db2inst1 -c "db2stop force"

echo "Dropping EchoStream Snapshot"
/usr/bin/date
ExitMessage="ERROR: Snapshot was not dropped successfully!"
Context=1
CONTEXTS=1
ODMDIR=/etc/objrepos
INSTALL_DIR=/usr/sCRT

Exit()
{
echo "-----"
echo $ExitMessage
echo "-----"
exit $1
}

for Context in $CONTEXTS; do

    ${INSTALL_DIR}/bin/rtumnt -C ${Context}
    if [ $? != 0 ]; then
        echo "Failed unmounting filesystems over snapshot. Make sure applications are stopped"
        Exit 6
    fi

    ${INSTALL_DIR}/bin/sCRT_ra -W -C ${Context}
    if [ $? != 0 ]; then
        echo "Unable to release snapshot"
        Exit 5
    fi

    ExitMessage="Success: Snapshot has been released!"

done

Exit 0

```



# Configuration:

**Configuration Summary**

Replication group: BICMAC  
 Last changed: 2/19/21 12:29:49  
 Primary context ID: 1  
 Failover context ID: 17

**Servers**

	Production	Recovery
Host name:	BICMAC	BICMACCONT
IP address:	10.0.1.9	10.0.201.9

Failover server: Yes

Logical Volume	Volume Group		Size (GB)	Type	File System	FS Log
	Production	Recovery				
logh00	db2vg	db2vg	0.13	jfs2log	-	-
db2data1v	db2vg	db2vg	999.38	jfs2	/db2data	/dev/logh00

**Containers**

	Production	Recovery
Number of containers:	4600	9000
Size of each container:	32 MB	32 MB
Total size:	143.8 GB	281.3 GB

Default volume group: Mimixvg      Mimixvg  
 Alternate volume groups / physical volumes for replication containers: None      None

Logical volumes: 2      3

Use compression: Yes  
 Use encryption: No  
 Send partial containers automatically: Yes  
 Frequency to check: 300 sec  
 Minimum filled threshold: 50%

**Mirrors:**

Replication containers: 0  
 Replica: 0  
 Snapshot: 0  
 Internal: 0

**Snapshot Buffers**

	Production	Recovery
Default volume group:	Mimixvg	Mimixvg
Size:	10% of total size of selected logical volumes	
Warning threshold:	75%	



Ports	Control Port	Data Port
Primary ports:		
Archive (AA):	5778	5782
Apply (ABA):	5779	5783
Send (LCA):	5780	5784
Restore client (CA/RA):	5781	5785
Failover ports:		
Archive (AA):	5786	5790
Apply (ABA):	5787	5791
Send (LCA):	5788	5792
Restore client (CA/RA):	5789	5793
Tivoli Storage Manager		
Enabled:	No	

### ***Post Implementation changes:***

Upon request from customer Mimix will check every 3 minutes if a container is not full but at least 10% it will be sent over for replication.

Use compression:	Yes
Use encryption:	No
Send partial containers automatically:	Yes
Frequency to check:	180 sec
Minimum filled threshold:	10%
Mirrors:	
Replication containers:	0
Replica:	0
Snapshot:	0
Internal:	0

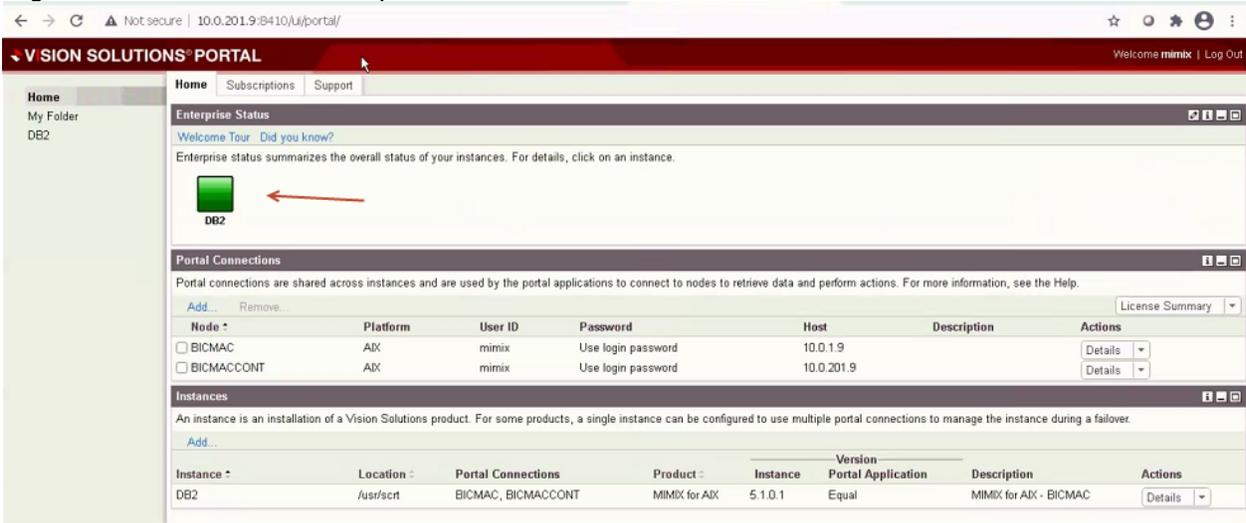
# Steps for shutdown of production system:

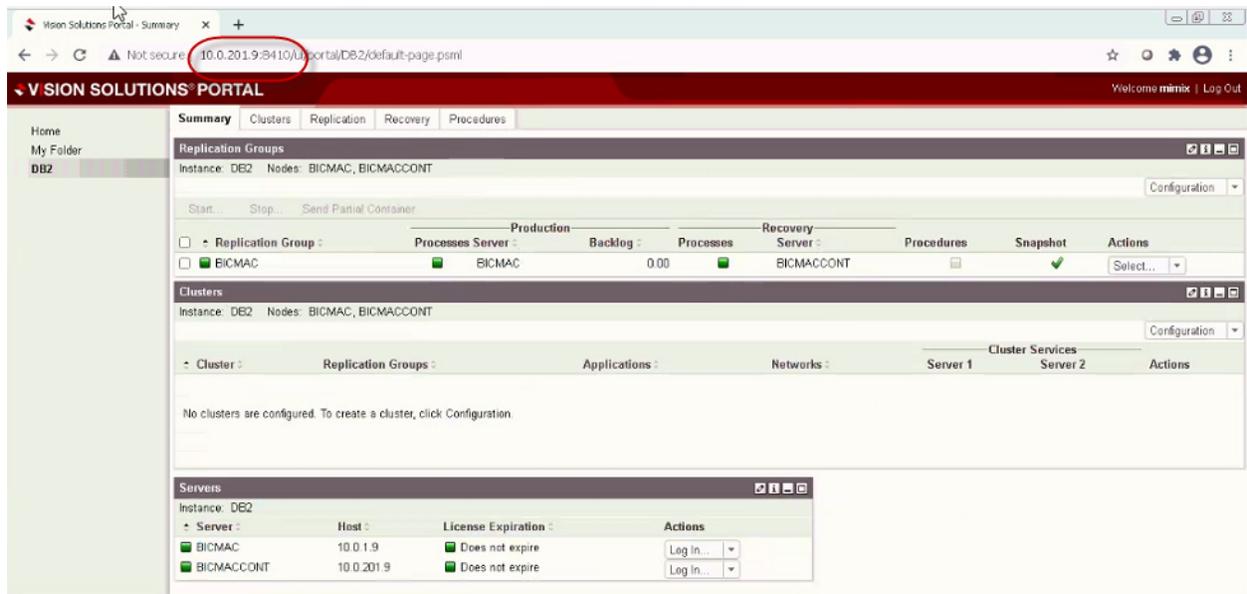
- 1. Prior to system shutdown the application and or Database must be stopped.
- 2. Stop the Mimix product from the VSP/AUI.
- 3. Shutdown the system.

# How to login to GUI/AUI for Mimix :

Open IE or Firefox browser to <http://10.0.201.9:8410>

Login with AIX user id root or equivalent. Use Administrator if VSP is installed on Windows Server.





## How to start/stop Mimix :

Login to AUI as described in [How to login to AUI for Mimix:](#)

Check Replication Group and select stop/start.

**NOTE\*\* Stopping Mimix here will cause application filesystems to be unmounted.**

If you want to stop replication data from been sent to Contingency server use ***stopsrc -cs scrt\_lca-1***



**VISION SOLUTIONS PORTAL** | Welcome mimix | Log Out

Summary | Clusters | Replication | Recovery | Procedures

Replication Groups  
Instance: DB2 Nodes: BICMAC, BICMACCONT

Start... Stop... Send Panel Container

	Production	Backlog	Recovery	Procedures	Snapshot	Actions
<input type="checkbox"/> + Replication Group	Processes Server		Processes Server			
<input type="checkbox"/> BICMAC	BICMAC	0.00	BICMACCONT		✓	Select...

Clusters  
Instance: DB2 Nodes: BICMAC, BICMACCONT

Cluster Services  
Server 1 | Server 2

No clusters are configured. To create a cluster, click Configuration.

Servers  
Instance: DB2

Server	Host	License Expiration	Actions
BICMAC	10.0.1.9	Does not expire	Log In...
BICMACCONT	10.0.201.9	Does not expire	Log In...

## Planned Switch Procedure using AUI:

To manually roleswap from Production to Recovery Server using VSP, follow the procedure below.

Login to VSP as detailed in [How to login to AUI/VSP](#) :

Click procedures and then "planned failover"

The screenshot shows the 'Procedures' tab in the AUI interface. The 'Planned Failover' procedure is selected and circled in red. A red arrow points to the 'Planned Failover' row in the table. Below the table, the 'Steps' section shows a list of steps for the 'Planned Failover' procedure, with the 'Run...' button highlighted by a red arrow.

Procedure	Replication Group	Production	Recovery	Last Started	Actions
Failback	BICMAC	BICMAC	BIMACCONT	-	Select
<b>Planned Failover</b>	BICMAC	BICMAC	BICMACCONT	-	Run...
Unplanned Failover	BICMAC	BICMAC	BICMACCONT	-	Select

Status	Sequence Number	Step	Run on Server	Started
<input type="checkbox"/>	10	Unmount file systems on current production server.	BICMAC	-
<input type="checkbox"/>	20	Stop replication on current production server.	BICMAC	-
<input type="checkbox"/>	30	Failover replication group. Server roles change.	BICMACCONT	-
<input type="checkbox"/>	40	Start replication on new recovery server.	BICMAC	-
<input type="checkbox"/>	50	Start replication on new production server.	BICMACCONT	-

Click run and then "resume" for each step until all steps have green checkmark

The screenshot shows the 'Run Planned Failover Procedure' dialog box. A green speech bubble with the text 'DB2 must be stopped' is overlaid on the dialog. The dialog contains information about the replication group, roles, procedure, and step. A warning icon is present, indicating that applications must be stopped before running the procedure.

**Run Planned Failover Procedure**

Instance: DB2

Replication group: BICMAC  
New production server: BICMACCONT

Roles:  
Current: **Production** BICMAC      **Recovery** BIMACCONT  
After failover: BICMACCONT      BICMAC

Procedure: Planned Failover  
Step: Unmount file systems on current p  
Run on server: BICMAC

Backlog size: 21.0 KB  
Estimated time: 0 sec

**DB2 must be stopped**

**Warning:** You requested to move production to a recovery server. Before running this procedure, all applications using the logical volumes in this replication group must be stopped. Applications are not available until this procedure completes.

During the failover, all data in the backlog is replicated, file systems are unmounted, and any existing snapshots are deleted.

You must run each step in the procedure manually. The Procedures portlet and Steps portlet on the Procedures page will guide you through each step.

To confirm all applications are stopped and to start the planned failover, click OK. To cancel, click Cancel.

OK    Cancel    Help



Summary Clusters Replication Recovery **Procedures**

**Procedures**

Instance: DE2 Nodes: BICMAC, BICMACCONT

Filter: All Replication Groups

Procedure	Replication Group	Current Servers		Last Started	Actions
		Production	Recovery		
Planned Failover	BICMAC	BICMAC	BICMACCONT	3/8/21 19:21:47	Resume...
Failback	BICMAC	BICMAC	BICMACCONT	-	Select...
Unplanned Failover	BICMAC	BICMAC	BICMACCONT	-	Select...

**Steps**

Instance: DE2

Procedure: Planned Failover Replication group: BICMAC BICMAC ⇌ BICMACCONT

Failover server: BICMACCONT

Status: Stopped

Run... Resume... Cancel... Acknowledge...

Status	Sequence Number	Step	Run on Server	Started
✓	10	Unmount file systems on current production server.	BICMAC	3/8/21 19:21:47
⊘	20	Stop replication on current production server.	BICMAC	-
⊘	30	Failover replication group. Server roles change.	BICMACCONT	-
⊘	40	Start replication on new recovery server.	BICMAC	-
⊘	50	Start replication on new production server.	BICMACCONT	-

Summary Clusters Replication Recovery **Procedures**

**Procedures**

Instance: DE2 Nodes: BICMAC, BICMACCONT

Filter: All Replication Groups

Procedure	Replication Group	Current Servers		Last Started	Actions
		Production	Recovery		
Planned Failover	BICMAC	BICMACCONT	BICMAC	3/8/21 19:21:47	Select...
Failback	BICMAC	BICMACCONT	BICMAC	-	Run...
Unplanned Failover	BICMAC	BICMACCONT	BICMAC	-	Select...

**Steps**

Instance: DE2

Procedure: Planned Failover Replication group: BICMAC BICMACCONT ⇌ BICMAC

Failover server: BICMACCONT

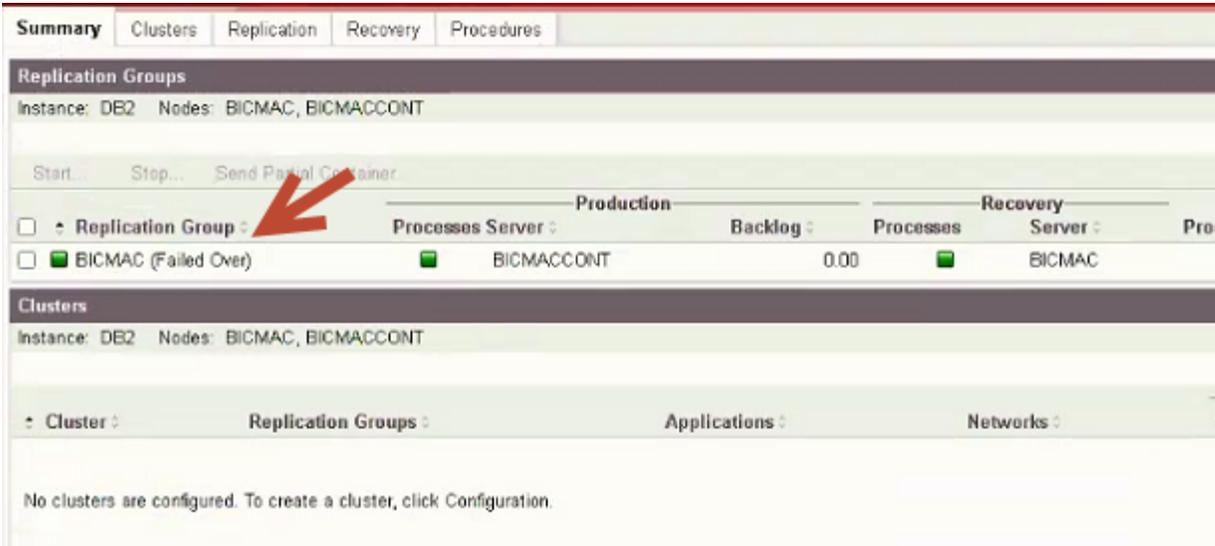
Status: Completed

Run... Resume... Cancel... Acknowledge...

Status	Sequence Number	Step	Run on Server	Started
✓	10	Unmount file systems on current production server.	BICMAC	3/8/21 19:21:47
✓	20	Stop replication on current production server.	BICMAC	3/8/21 19:22:52
✓	30	Failover replication group. Server roles change.	BICMACCONT	3/8/21 19:25:14
✓	40	Start replication on new recovery server.	BICMAC	3/8/21 19:30:55
✓	50	Start replication on new production server.	BICMACCONT	3/8/21 19:32:12



Once the failover is completed the AUI will display the status:



## Failback Procedure using VSP:

Click failback and “run” to start the failback to production



**Run Failback Procedure** [X]

Instance: DB2

Replication group: DB2  
 New production server: DR

Roles:

	<b>Production</b>	<b>Recovery</b>
Current:	DR	PROD
After failback:	PROD	DR

Procedure: Failback  
 Step: Unmount file systems on current production server.  
 Run on server: DR

Backlog size: 27.4 KB  
 Estimated time: 0 sec

**Application/DB must be stopped prior to failback**

You requested to move production back to the configured production server. Before running this procedure, all applications using the logical volumes in this replication group must be stopped. Applications are not available until this procedure completes.

During the failback, all data in the backlog is replicated, file systems are unmounted, and any existing snapshots are deleted.

You must run each step in the procedure manually. The Procedures portlet and Steps portlet on the Procedures page will guide you through each step.

To confirm all applications are stopped and to start the failback, click OK. To cancel, click Cancel.

OK Cancel Help

Click “resume” until there is a checkmark by each step.

**Steps** [Icons]

Instance: DB2

Procedure: Failback Replication group: DB2 DR → PROD  
 Failback server: PROD  
 Status: ● Stopped

Run... Resume... Cancel... Acknowledge...

Status	Sequence Number	Step	Run on Server	Started	Ended	Duration
▶ ✓	10	Unmount file systems on current production server.	DR	2/28/21 15:44:56	2/28/21 15:44:59	00:00:03
●	20	Stop replication on current production server.	DR	-	-	-
■	30	Failback configured production server.	PROD	-	-	-
■	40	Failback configured recovery server.	DR	-	-	-



## Steps



Instance: DB2

Procedure: Failback    Replication group: DB2 PROD → DR

Failback server: PROD

Status: ✔ Completed

Run...    Resume...    Cancel...    Acknowledge...

Status	Sequence Number	Step	Run on Server	Started	Ended	Duration
▶✔	10	Unmount file systems on current production server.	DR	2/28/21 15:44:56	2/28/21 15:44:59	00:00:03
▶✔	20	Stop replication on current production server.	DR	2/28/21 15:46:06	2/28/21 15:46:25	00:00:19
▶✔	30	Failback configured production server.	PROD	2/28/21 15:46:39	2/28/21 15:47:10	00:00:31
▶✔	40	Failback configured recovery server.	DR	2/28/21 15:47:21	2/28/21 15:47:35	00:00:14



# Unplanned Switch Procedure:

Overview:

1. Production Server is involved in a Disaster of some kind and cannot be readily recovered.
2. Using VSP/AUI on DR use regular snapshot to test if database can be started.
3. If Step 2 fails, use snapshot to earlier point in time or event marker.
4. During either step 2 or 3 test Database thoroughly.
5. Resume failover procedure as guided by VSP.

Login to VSP on the DR server: [http://drserver\\_hostname:8410](http://drserver_hostname:8410)

When production is down or unreachable the AUI display will resemble the fig below.

Replication	Production	Recovery						
Group	Processes	Server	Backlog	Processes	Server	Procedures	Snapshot	Actions
DB2	?	PROD	0.03	■	DR	✓	-	Select...

Click “procedures” and run on unplanned failover

Procedure	Replication Group	Current Servers		Last Started	Actions
		Production	Recovery		
✓ Failback	DB2	PROD	DR	2/28/21 15:44:56	Select...
✓ Planned Failover	DB2	PROD	DR	2/28/21 15:38:38	Select...
Unplanned Failover	DB2	PROD	DR	-	Run...



The following screen is displayed:

**Run Unplanned Failover Procedure** [X]

Instance: DB2

Replication group:	DB2	
New production server:	DR	
Roles:	<b>Production</b>	<b>Recovery</b>
Current:	PROD	DR
After failover:	DR	PROD

Procedure: Unplanned Failover  
Step: Create snapshot on failover server.  
Run on server: DR

**select PIT and take the most recent date**

**!** You requested to move production to a recovery server. Because the production server is not available, you may need to rollback the new production server before failing over. Validating the rollback location using a snapshot is recommended. If you have created a snapshot and validated a rollback location, select Location Already Validated. A snapshot will not be created.

To create a snapshot, specify a location in the rollback window on the new production server. After you validate the rollback location by running applications with the snapshot, resume this procedure. If you need to validate a different rollback location, this procedure will guide you through creating another snapshot.

Location in new production server rollback window:  [v]

Date and time:

You must run each step in the procedure manually. The Procedures portlet and Steps portlet on the Procedures page will guide you through each step.

To confirm the snapshot location and to start the unplanned failover, click OK. To cancel, click Cancel.

[OK] [Cancel] [Help]

## Steps

Instance: DB2

Procedure: Unplanned Failover    Replication group: DB2 PROD → DR

Failover server: DR

Status: ● Stopped

Run...   Resume...   Cancel...   Acknowledge...

Status	Sequence Number	Step	Run on Server	Started	Ended	Duration
▶ ✓	10	Create snapshot on failover server.	DR	3/1/21 12:17:28	3/1/21 12:17:30	00:00:02
●	20	Delete snapshot on failover server.	DR	-	-	-
■	30	Rollback failover server.	DR	-	-	-
■	40	Failover replication group. Server roles change.	DR	-	-	-
■	50	Start replication on new recovery server.	PROD	-	-	-
■	60	Start replication on new production server.	DR	-	-	-

step 10 will create a snapshot to current time. Test the data on the DR server.

when testing is done stop the DB and click "resume"

### Resume Unplanned Failover Procedure

Instance: DB2

Replication group: DB2 PROD → DR

Procedure: Unplanned Failover

Step: Delete snapshot on failover server

Run on server: DR

Rollback location:

Point in time: 3/01/2021 11:51:21

Container ID: 40

**!** This step deletes the snapshot on the new production server that was used to validate the rollback location. All applications using the snapshot must be stopped. File systems are unmounted when the snapshot is deleted.

Do you have a validated rollback location?

Yes. Continue to next step.

No. Return to the previous step and create another snapshot with a different rollback location.

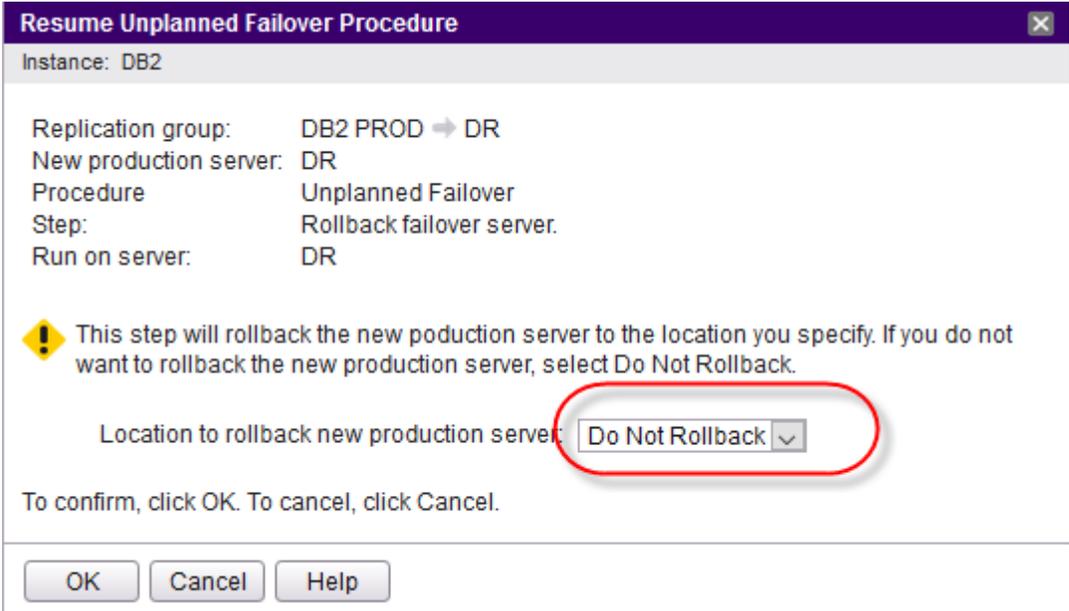
Select "Yes" if a good recovery point was found. Select "No" if you are continuing to look for good recovery point

If you select "No" you will be returned to the previous screen to select a different point-in-time to rollback to, while staying on "step 30"

Note that this is just a snapshot to an earlier point in time. Test your application again until a suitable recovery point is found. When you do find the suitable recovery point make a note of the exact time that you used. Click resume to delete the last snapshot and continue.



If the application startup was successful using the default current point in time choose "do not rollback" in the next window as below:



**Resume Unplanned Failover Procedure** [X]

Instance: DB2

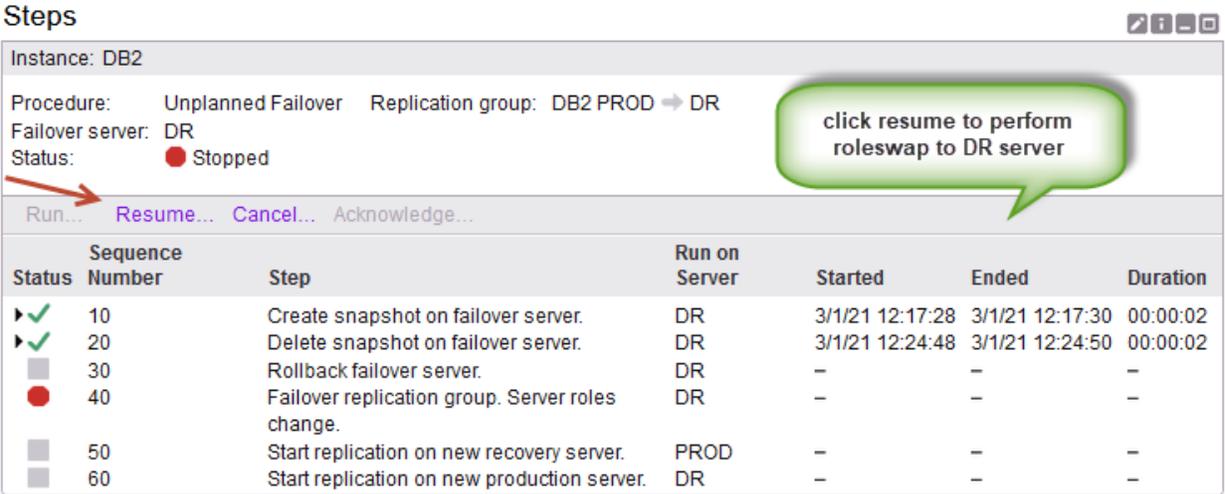
Replication group: DB2 PROD → DR  
New production server: DR  
Procedure: Unplanned Failover  
Step: Rollback failover server.  
Run on server: DR

**!** This step will rollback the new production server to the location you specify. If you do not want to rollback the new production server, select Do Not Rollback.

Location to rollback new production server: **Do Not Rollback** [v]

To confirm, click OK. To cancel, click Cancel.

OK Cancel Help



**Steps** [Icons]

Instance: DB2

Procedure: Unplanned Failover    Replication group: DB2 PROD → DR  
Failover server: DR  
Status: ● Stopped

Run... **Resume...** Cancel... Acknowledge...

**click resume to perform roleswap to DR server**

Status	Sequence Number	Step	Run on Server	Started	Ended	Duration
▶✓	10	Create snapshot on failover server.	DR	3/1/21 12:17:28	3/1/21 12:17:30	00:00:02
▶✓	20	Delete snapshot on failover server.	DR	3/1/21 12:24:48	3/1/21 12:24:50	00:00:02
■	30	Rollback failover server.	DR	-	-	-
●	40	Failover replication group. Server roles change.	DR	-	-	-
■	50	Start replication on new recovery server.	PROD	-	-	-
■	60	Start replication on new production server.	DR	-	-	-

**Please wait** as this step may take some time to complete depending on the performance of the DR server and the size of the replicated data.



## Steps

Instance: DB2						
Procedure: Unplanned Failover		Replication group: DB2 DR				
Failover server: DR						
Status: <span style="color: red;">●</span> Stopped						
Run... Resume... Cancel... Acknowledge...						
Status	Sequence Number	Step	Run on Server	Started	Ended	Duration
▶✓	10	Create snapshot on failover server.	DR	3/1/21 12:17:28	3/1/21 12:17:30	00:00:02
▶✓	20	Delete snapshot on failover server.	DR	3/1/21 12:24:48	3/1/21 12:24:50	00:00:02
■	30	Rollback failover server.	DR	-	-	-
▶✓	40	Failover replication group. Server roles change.	DR	3/1/21 12:29:09	3/1/21 12:29:31	00:00:22
●	50	Start replication on new recovery server.	PROD	-	-	-
■	60	Start replication on new production server.	DR	-	-	-

Once step 40 is complete the DR server is ready for use as production. Step 50 and 60 can only be completed once the production server/site is fixed

Do not press "Cancel" so that you can return to this screen later.



# Re-introduce Failed Server after Unplanned Switch Procedure (DR):

It may take several days to repair the original Production Server before it can be re-introduced as the new Recovery Server.

Login to VSP.

Select Procedures.

### Steps

Instance: DB2  
 Procedure: Unplanned Failover    Replication group: DB2 DR → PROD  
 Failover server: DR  
 Status: ● Stopped

Run... Resume... Cancel... Acknowledge...

Status	Sequence Number	Step	Run on Server	Started	Ended	Duration
▶✓	10	Create snapshot on failover server.	DR	3/1/21 12:17:28	3/1/21 12:17:30	00:00:02
▶✓	20	Delete snapshot on failover server.	DR	3/1/21 12:24:48	3/1/21 12:24:50	00:00:02
■	30	Rollback failover server.	DR	-	-	-
▶✓	40	Failover replication group. Server roles change.	DR	3/1/21 12:29:09	3/1/21 12:29:31	00:00:22
●	50	Start replication on new recovery server.	PROD	-	-	-
■	60	Start replication on new production server.	DR	-	-	-

### Steps

Instance: DB2  
 Procedure: Unplanned Failover    Replication group: DB2 DR  
 Failover server: DR  
 Status: ● Stopped

Run... Resume... Cancel... Acknowledge...

Status	Sequence Number	Step	Run on Server	Started	Ended	Duration
■	10	Create snapshot on failover server.	DR	-	-	-
■	20	Delete snapshot on failover server.	DR	-	-	-
■	30	Rollback failover server.	DR	-	-	-
■	40	Failover replication group. Server roles change.	DR	-	-	-
▶✓	50	Start replication on new recovery server.	PROD	3/1/21 12:36:35	3/1/21 12:37:01	00:00:25
●	60	Start replication on new production server.	DR	-	-	-



Once step 60 is complete replication is taking place from DR Site to original Production Site. Click the "summary" tab to show status.

The screenshot shows a web-based interface for managing database replication. At the top, there are tabs for 'Summary', 'Clusters', 'Replication', 'Recovery', and 'Procedures'. The 'Replication' tab is active. Below the tabs, the title 'Replication Groups' is displayed with some icons on the right. A header bar shows 'Instance: DB2' and 'Nodes: DR, PROD', along with a 'Configuration' dropdown menu. Below this, there are buttons for 'Start...', 'Stop...', and 'Send Partial Container...'. The main area contains a table with columns for 'Replication', 'Production', and 'Recovery'. The 'DB2 (Failed Over)' row is circled in red. The table has the following data:

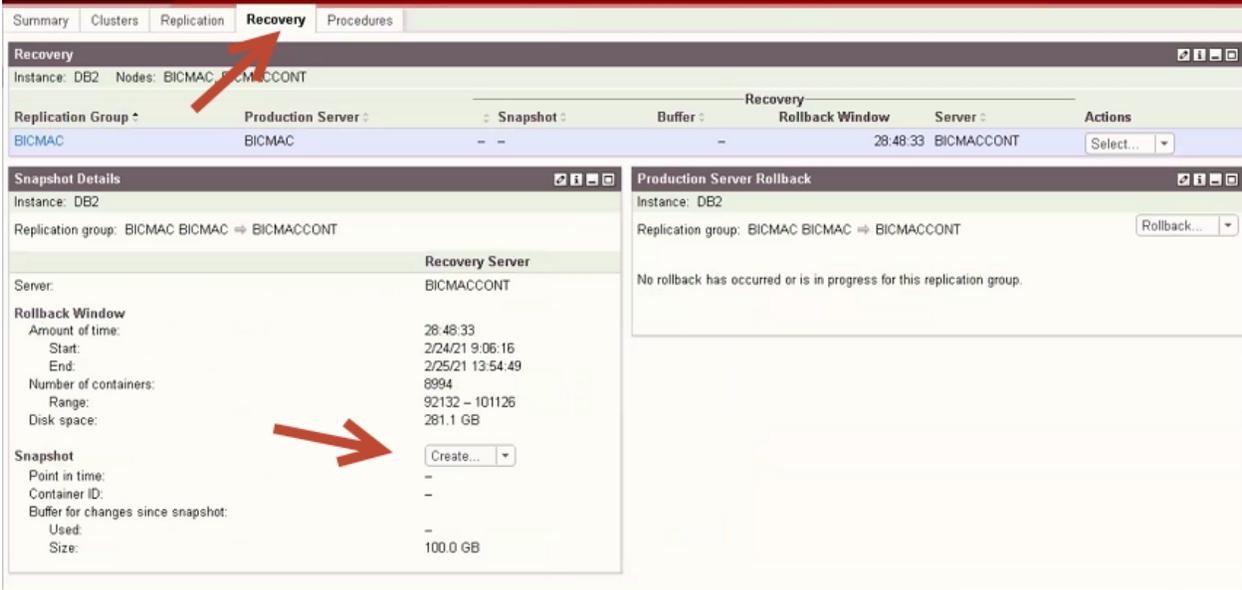
	Group	Production Processes	Production Server	Production Backlog	Recovery Processes	Recovery Server	Procedures	Snapshot	Actions
<input type="checkbox"/>	DB2 (Failed Over)	■	DR	4.57	■	PROD	✓	-	Select...



# Creating a Snapshot (Virtual Failover)

Login to VSP:

Click Recovery Tab, then replication group ; then create



To delete snapshot , stop DB2 and then:



The screenshot displays the 'Recovery' tab in a management console. At the top, there are tabs for 'Summary', 'Clusters', 'Replication', 'Recovery', and 'Procedures'. The 'Recovery' tab is active, showing a table with columns: 'Replication Group', 'Production Server', 'Snapshot', 'Buffer', 'Rollback Window', 'Server', and 'Actions'. The table contains one entry for 'BICMAC' with a status of '0%' and a 'Select...' dropdown.

Below the table are two panels:

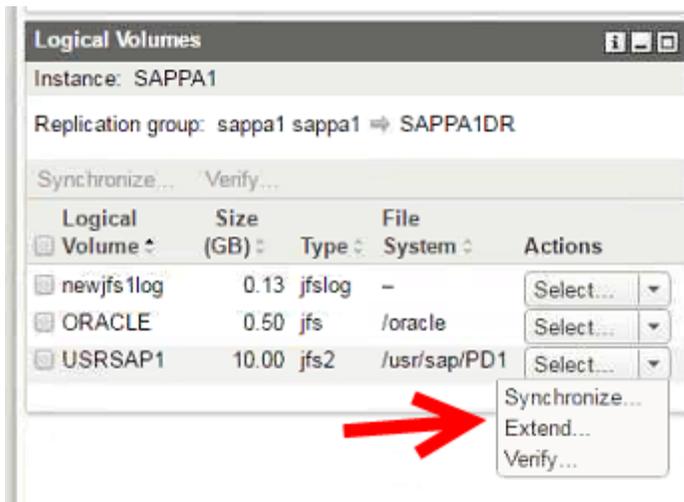
- Snapshot Details:** Shows instance 'DB2' and replication group 'BICMAC BICMAC ⇒ BICMACCONT'. It lists 'Recovery Server' as 'BICMACCONT'. Under 'Rollback Window', it shows 'Amount of time: 28:53:05', 'Start: 2/24/21 9:06:17', 'End: 2/25/21 13:59:22', 'Number of containers: 8998', 'Range: 92134 - 101132', and 'Disk space: 281.2 GB'. Under 'Snapshot', it shows 'Point in time: -', 'Container ID: 101132', 'Buffer for changes since snapshot: 0%', and 'Size: 100.0 GB'. A red arrow points to a 'Delete...' dropdown button.
- Production Server Rollback:** Shows instance 'DB2' and replication group 'BICMAC BICMAC ⇒ BICMACCONT'. It contains a 'Rollback...' dropdown button and the text: 'No rollback has occurred or is in progress for this replication group.'

## Increasing Filesystem size:

DO NOT increase filesystems directly from AIX . use the VSP as follows:  
 Click replication tab. Click instance name DB2 then go down to logical volumes. Under “Actions” select “extend” for filesystem that needs to be increased.

For example:





# Monitoring Replication:

Click replication tab.

The screenshot shows a management console with tabs for Summary, Clusters, Replication, Recovery, and Procedures. The Replication tab is active, displaying the 'Replication Groups' section for instance TRICEPS3. A table lists the 'triceps3' group with a backlog of 0.41. Below this, the 'Replication Status' and 'Replication Statistics' panels are shown. In the 'Replication Status' panel, the 'Drivers' section shows 'Loaded' for both Production and Recovery servers, and 'Send' and 'Apply' processes are 'Active'. In the 'Replication Statistics' panel, the 'Backlog' section shows a size of 6.5 MB and a transfer rate of 6.85 MB/sec. A red box highlights the 'Backlog' section in the statistics panel and the 'Drivers' section in the status panel.

Replication Group	Processes	Server	Backlog	Processes	Server	Procedures	Snapshot	Actions
triceps3		rosetriceps2	0.41		echotryroseville		-	Select...

Roles	Production Server	Recovery Server
Configured:	rosetriceps2	echotryroseville
Current:	rosetriceps2	echotryroseville
Drivers:	Loaded	Loaded
Container processes:		
Send:	Active	-
Apply:	-	Active
Archive:	-	-

Backlog	Value
Size:	6.5 MB
Transfer rate:	6.85 MB/sec
Estimated time:	0 sec
Containers not sent:	0.41
Last sent:	2/5/21 10:58:30
Containers not applied:	
Recovery server:	0

Drivers must be loaded and “send” and “receive” active. Keep an eye on the backlog



## Failover/Failback using Command line :

### Planned Switch Procedure (command line)

To manually move the Mimix application to the Recovery Server, follow the procedure below:

1. **Production server:** Stop the Database and/or other Applications.
2. **Production server:** Stop Mimix  
`/usr/scrt/bin/rtstop -FSC1`
3. **Production server:** If the above command fails because some processes are holding the filesystem, you can run “fuser -kxuc /<unmounted filesystem>” to kill those processes, and then run:  
`/usr/scrt/bin/rtstop -FSC1`

Now you are ready to perform the failover.

4. on the **Recovery server:**  
`/usr/scrt/bin/rtldr -C1 failover`

Answer y

Answer y again.

5. The final screen should say that the filesystems have been mounted.
6. Now you can start the Database/application



## Resynchronization and Fallback Procedure (command line)

Once you are ready to initiate resynchronization from the recovery server to the production server, perform the following:

- 1. Recovery Server:** Initiate the resynchronization procedure.  
`/usr/scrt/bin/rtdr -C1 resync`
- 2. Production Server:** Initiate the resynchronization procedure:  
`/usr/scrt/bin/rtdr -C1 resync`

Answer y to the question.

Answer y again.

The bottom of the screen should say:

*“Failover context <17> is enabled and ready for re-sync”*

Now replication has started to occur from the recovery server to the production server.

- 3. Recovery Server:** Monitor the scrt-lca-17.out log.

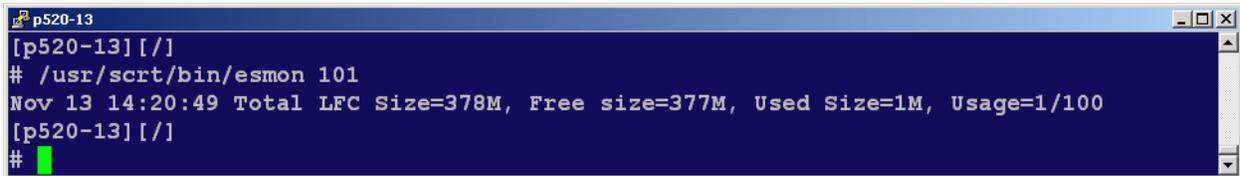
```
tail -f /var/log/EchoStream/scrt-lca-17.out.log
```

When it says “***Dynamic SuperTransaction recovery complete***”, the two servers are in sync, and you can plan for the fallback procedure.

## Fallback to Production ( command line):

Open a terminal window to the recovery server, and verify that there is no significant buffering occurring on that server. The “Usage” should be close to 1/100.

`/usr/scrt/bin/esmon 17`

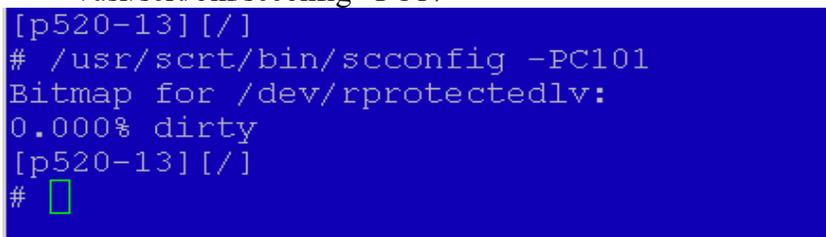


```
[p520-13] [/#]
# /usr/scrt/bin/esmon 101
Nov 13 14:20:49 Total LFC Size=378M, Free size=377M, Used Size=1M, Usage=1/100
[p520-13] [/#]
#
```

If there is a lot of buffering, you should not initiate failback, you would need to wait for EchoStream to catch up with the replication.

1. **Recovery server:** Stop the Database/Applications.
2. **Recovery server:** Stop Mimix  
`/usr/scrt/bin/rtstop -FSC17`
3. **Recovery server:** If the above command fails because some processes are holding the filesystem, you can run “`fuser -kxuc /<unmounted filesystem>`” to kill those processes, and then run:  
`/usr/scrt/bin/rtstop -FSC17`

4. Verify that the statemaps are clean:  
`/usr/scrt/bin/scconfig -PC17`



```
[p520-13] [/#]
# /usr/scrt/bin/scconfig -PC101
Bitmap for /dev/rprotectedlv:
0.000% dirty
[p520-13] [/#]
#
```

Above I only have one logical volume, but you should ensure that the statemap is clean for all of your logical volumes.

5. **Production server:** perform data validation using snapshot.



6. Verify that the database started correctly. If it did not, do not proceed with the fallback procedure because the recovery server's image is not consistent.
7. Stop the database and remove the snapshot:
8. Now you are ready to perform the fallback procedure.
9. On the **Recovery server**:  
`/usr/scrt/bin/rtdr -C1 failback`  
Answer y  
Answer y again.
10. The tail end of your screen should say:  
*“---Primary context<1> is enabled ---“*
11. **Production Server**: Now you will perform fallback on the Production server:  
`/usr/scrt/bin/rtdr -C1 failback`  
  
Answer y  
Answer y again
12. **Production server**: Now you are ready to start Application/Database
13. **Production server**: Monitor `/var/log/EchoStream/scrt_lca-1.out` file to ensure that replication is occurring correctly.



## Unplanned Failover ( command line):

Data has to be verified on DR/Recovery server. A snapshot to the most current PIT is the default.

1. **Recovery server:** `scrt_ra -C1 -X`
2. **Recovery server:** `rtmnt -C1` (fsck may be needed)
3. **Recovery :** Verify data by starting application
4. **Recovery:** Stop DB/application.
5. **Recovery :** Unmount filesystems and Remove snapshot `rtumnt -C1 ; scrt_ra -WC1`
6. **If data has to rolled back to earlier PIT : (if not skip to step 7)**
  - For example, to make a restore snapshot to October 27, 2020 at 17:21:57:  
`scrt_ra -C1 -D "10/27/20 17:21:57"`
  - mount the filesystems `rtmnt -C1` , test, `rtumnt -C1`, delete snapshot - repeat as needed.
  - Once an appropriate PIT has been found, the replica needs to be rolled back to this PIT prior to failover.  
`scrt_ra -C1 -F -D "10/27/20 17:21:57"`
7. **Recovery server:** Stop Mimix and failover  
`/usr/scrt/bin/rtstop -FC1 ; rtdr -C1 failover`



# Contacting Vision CustomerCare

## Contacting Vision Solutions CustomerCare

1. Research On-line Knowledge Base – **requires a username password**  
To request access to the CustomerCare Support Central Web Portal  
<http://portal.visionsolutions.com/signupnewuser.aspx>  
  
To access the CustomerCare Online Support and Knowledgebase:  
<http://portal.visionsolutions.com/extlogin.aspx>
2. Open an On-line Incident – **requires a username password**  
To log an Incident with CustomerCare for Technical Support:  
<http://portal.visionsolutions.com/extlogin.aspx>
3. Phone  
Mimix for AIX, RecoverNow/GeoCluster 24x7 CustomerCare Technical Support:  
**U.S. and Canada: (800) 337-8214 OPTION 3**  
International: +1 (949) 724-5465
4. Email  
CustomerCare Support Email: [support@syncsort.com](mailto:support@syncsort.com)

## CustomerCare Support Overview

**Hours:** Qualified Support Analysts Available 24X7

- Business Hours: 5:00AM – 5:00PM PST, Monday - Friday
- After Hours Support: 5:00PM – 5:00AM PST, Monday – Friday,
- Friday 5:00 PM PST through Monday 5:00 AM PST, Holidays\*

\*Company Observed Holidays

## Service Level Agreements

*Our first goal is to connect you to a Qualified Support Specialist upon your first call. In the event that you phone us and all our specialists are assisting other customers, we will log your call and set it up for a call back according to severity. We try to make every effort in returning calls right away; however the Service Level Agreements below show what the maximum time could be to receive a return call in the event of a call back.*

*During Business Hours and After Hours – Expected Response Times (including goals)*

*Phone*

Severity One: 30 Minutes (95% of the time)

Severity Two: 1 Hour (80% of the time)

Severity Three: 1 Business Day (80% of the time)

Severity Four: 2 Business Days (80% of the time)

*During Business Hours only – Expected Response Times (including goals)*

*Email/Web*

Severity One: Not accepted, please phone in all urgent issues.

Severity Two: 4 Hours (80% of the time)

Severity Three: 8 Hours (80% of the time)

Severity Four: 1 Business Day (80% of the time)



# Third-party Licensing Information

Insert as appropriate



## Appendix A

### Copy customized scripts

## Command line options

scconfig -q : displays the Context number that you should be using the following commands.  
The examples below will assume Context=1

All Mimix commands are in the **/usr/scrt/bin** directory

rtstart -C1 : Start RN

rtstop -F(S)C1 : Stop RN “S” option is valid only on production to sync the backlog before stop of RN

### Logs:

tail -f /var/log/EchoStream/scrt\_lca-1.out (source)

tail -f /var/log/EchoStream/scrt\_aba-1.out (target)

stopsrc -s scrt\_lca-1: stop LCA daemon

stopsrc -s scrt\_aba-1: stop ABA daemon

startsrc -s scrt\_lca-1: start LCA daemon

startsrc -s scrt\_aba-1: start ABA daemon

stopsrc -cs scconfigd: stop config daemon (VSP uses this daemon)

startsrc -s scconfigs: start config daemon

scsetup -MC1 : recreates all containers that RN needs and that are defined in the RN odm.

**Statemap commands:** the statemap has to be manipulated when a complete resync of all or some LV's to the DR site are required.

scconfig -M: Mark statemaps dirty (need to resync all)

scconfig -W: Wipe statemaps clean (don't resync)

scconfig -P: summary status of statemaps

scconfig -Pv: detailed status of statemaps



