Backup/Restore for IRIS AWS deployments

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This document describes the procedure for AWS Backup/Restore Snapshot procedure and allows consistent restore of the mirrored system to the point in time at which backup was taken.

Combination of Backup+Journals restore or “arbitrary point in time” restore is not in scope of this document.

Automated Backup/Restore procedure would use AWS EBS Snapshot functionality against these volumes and require execution of shell/Object Script commands on IRIS instances as well as monitoring state of the instances via messages.log files and/or parsing ‘iris.list’ output.

Provision IRIS mirrored configuration, using the procedure and CloudFormation template here: <https://community.intersystems.com/post/intersystems-iris-deployment%C2%A0guide-aws%C2%A0using-cloudformation-template>

<https://github.com/antonum/AWSIRISDeployment>

Graphical user interface, application

Description automatically generated

Both IRIS Mirror Node 1 and IRIS Mirror Node 2 would have the following EBS volumes attached to them:

|  |  |  |
| --- | --- | --- |
| Linux mount point | Volume Type | Alias/Device |
| /iris/sys | DB Sys Volume | /dev/sdb /dev/nvme1n1 |
| /iris/db | Database Volume | /dev/sdc /dev/nvme2n1 |
| /iris/jrnl | Journals | /dev/sdd /dev/nvme3n1 |

# Backup

Identify Backup IRIS node (“Backup” here is the same as “not primary”. Not to be confused with “Bachup as in backup/restore”!)

On that node:

* Execute Write Daemon Freeze command <https://docs.intersystems.com/irisforhealthlatest/csp/docbook/DocBook.UI.Page.cls?KEY=GCDI_backup#GCDI_backup_methods_ext>
* Perform Take AWS EBS Volume Snapshot of both DB and Journal volumes
* Execute Write Daemon Thaw

Two snapshots would constitute consistent backup for the time of the last successful WD cycle before WD Freeze. (validate!)

Optionally backup DB SYS volume for both nodes. Required only if security/configuration changes were made. Might not be out of the box compatible with “rebuild with new instances” procedure. Requires additional clarification.

# Restore

If system is still operational, but requires data restore from existing backup – use existing instances and configuration. If not – rebuild the system with empty databases first.

Optionally restore DB SYS snapshot on individual instances. Requires additional clarification.

With already configured mirrored system in place:

* Stop IRIS on both mirror nodes
* Create volumes from DB and Journal snapshots in Availability zones of both mirror nodes
* Mount volumes on EC2 nodes, replacing existing volumes
* Start IRIS on node 1
* Wait for “becoming primary” message to appear in messages.log
* Start IRIS on node 2
* Wait for Primary+Backup status for IRIS nodes.
* Let users in

See appendix 1 for the example walkthrough

# Appendix 1 – Example AWS simplified walkthrough for Backup/Restore of DB volume

IRIS External backup with Freeze/Thaw. <https://docs.intersystems.com/irisforhealthlatest/csp/documatic/%25CSP.Documatic.cls?PAGE=CLASS&LIBRARY=%25SYS&CLASSNAME=Backup.General#ExternalFreeze>

EBS snapshot <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ebs-restoring-volume.html>

**BACKUP:**

instance i-013bcb2cc1ae42586

identify DB volume /dev/sdc

=> vol-0f604334a3ff5d0b4

IRIS WD Freeze

create snapshot vol-0f604334a3ff5d0b4

=> snap-066e310586b422f1c

IRIS WD Thaw

**RESTORE:**

create volume from snapshot. Watch for AZ!!!

=> vol-01c42167fe072b89c

stop iris

umount /iris/db

detach vol-0f604334a3ff5d0b4

attach vol-01c42167fe072b89c i-013bcb2cc1ae42586 /dev/sdc

mount /dev/sdc /iris/db

start iris