



IBM i – Migration to Skytap using Commvault

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Introduction

Today 60% of enterprises are running Power/iSeries for their mission critical application and database. It is renowned for its reliability and stability and is deemed irreplaceable by many. There are however some issues:

- The veteran admins for Power/iSeries have been retiring and this has been an ongoing concern for IT departments.
- Older generations of Power hardware are becoming EOL and losing support
- IBM withdrew support for Power6 and Power7 in 2019.
- IBM i backs-up locally to tape creating silos of data requiring on-site expertise

Customers are trying to get out of the datacenter business and move to cloud, and with Power hardware becoming EOL now it the perfect time to think about migrating these workloads to cloud.

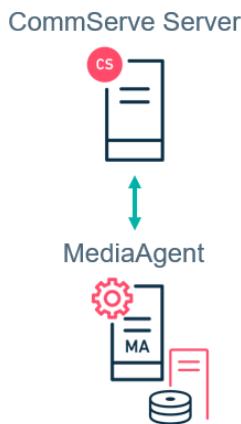
This is where Commvault and Skytap come in, Skytap is the front end for Microsoft's Power offering.

- Skytap claims to provide a 40% TCO savings for Power servers moving to the Azure cloud (compute, storage, labor)

Commvault is the perfect method to migrate these workloads, provide data protection, enable multi-site replication and disaster recovery, automation, and above all simplicity.

This guide will cover the full process of migrating on-prem IBM i to Skytap. It includes best practices and optional steps to make the process smoother. Many of the steps must be performed by an IBM iSeries expert so do not attempt this process without the correct resources available.

This guide will assume an on-prem CommServe Server and MediaAgent (with a deduplicated storage pool) are already configured with Commvault 11.24 or later per the diagram below.



Everything else will be deployed and configured using this guide.

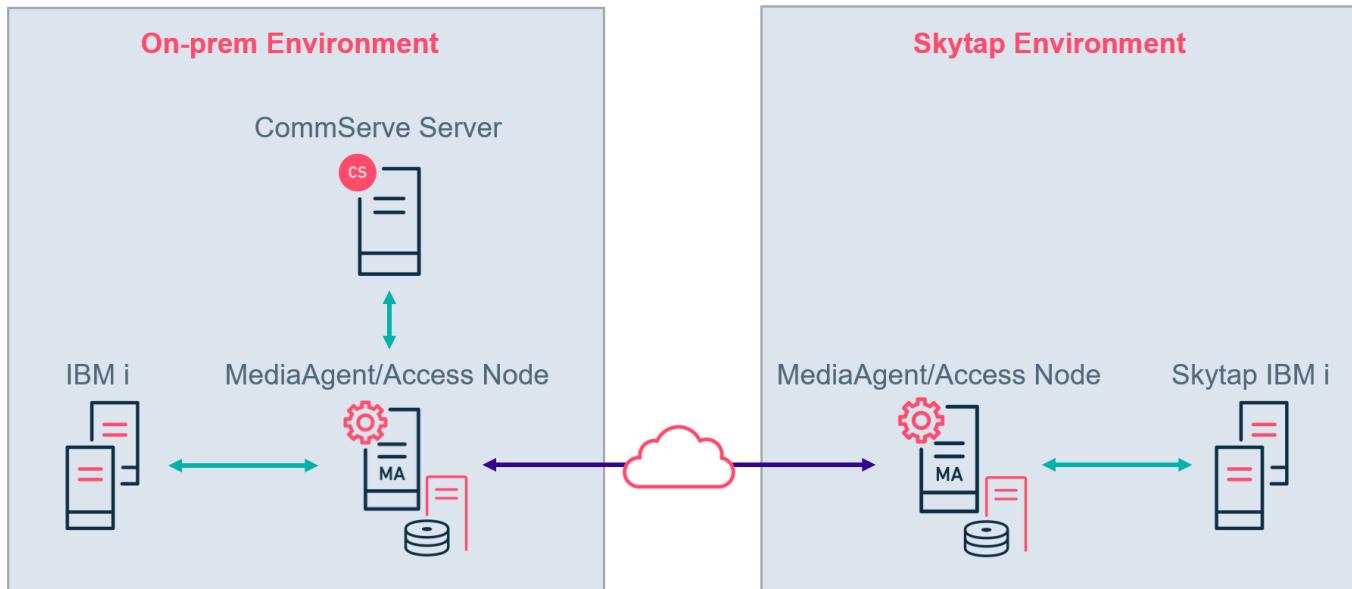
Disclaimer

This guide is accurate for the current release at the time of writing, FR11.24. It is to be used as a guideline, please ensure you fully understand the process and everything that is associated before usage. This process should not be attempted without an IBM i expert.

Solution Overview

Solution Architecture

This guide will use the architecture depicted below. This is just an example and Commvault can support any configuration provided an Access Node has direct communication with both source and destination IBM i Systems.



Systems

- CommServe Server
 - Orchestrates and monitors all jobs in this guide
 - Used to upload ISO image to Skytap
- On-prem MediaAgent/Access Node
 - Supported Linux Operating System (see documented system requirements on documentation.commvault.com)
 - Direct network (TCP/IP) communication with on-prem IBM i
 - Backup target for on-prem IBM i
 - DASH Copy Source
 - Network Gateway
 - Storage Accelerator (if Storage Pool is cloud based)
- On-prem IBM i
 - Migration Source
- Skytap MediaAgent/Access Node
 - Supported Linux Operating System (see documented system requirements on documentation.commvault.com)
 - Direct communication with Skytap IBM i
 - DASH Copy destination
 - Network Gateway
- Skytap IBM i
 - Migration Target

High Level Process

Pre-requisite: Install CommServe Server, MediaAgent, configure deduplicated Storage Pool following documentation best practices.

https://documentation.commvault.com/v11/essential/145241_migrating_on_premises_ibm_i_to_skytap.html

1. Install IBM i File System Agent on Media Agent
2. Optional: Create a plan for migration
3. Configure on-prem IBM i as an IBM i Client
4. Perform DR backup prerequisites on IBM i
5. Run IBM i Disk Space Report
6. Apply additional setting (SingleDVDImage)
7. Perform an IBM i backup of the DR Subclient.
8. Perform an IBM i backup of all non-DR subclients.
9. Create and deploy MediaAgent (with appropriate storage) on Skytap
10. Create a deduplicated storage pool on Skytap MediaAgent
11. Create a secondary copy for the non-DR Backup subclients pointing to the Skytap storage pool
12. DASH copy subclient backups to Skytap MediaAgent
13. Create IBM i virtual machine in Skytap
14. Configure Skytap IBM i as an IBM i Client
15. Start 1-Touch Restore process from CommServe Server
 - a. Restore the DR Backup ISO to the Skytap MediaAgent
1-Touch restore job is suspended at this point
 - b. Upload the DR Backup ISO to Skytap (temporarily disabling the Skytap session timeout is required if the upload will take longer than 15min)
 - c. Change the VM hardware configuration to boot in *D Mode side – Manual*
 - d. Start the VM
 - e. As soon as the media icon is available on the VM, mount the ISO image
 - f. Restore the minimal operating system from the DVD image
 - g. Recover System Data and Commvault Libraries from the DR Backup
 - h. Power down the system
 - i. Change the VM hardware configuration to boot in *B Mode side – Normal*.
 - j. Power on the system and wait for it to boot.
 - k. Resume the 1-Touch restore job.

Commvault IBM i Data Protection

Commvault Configuration

Once configured an IBM i client will by automatically have seven data subclients and one DR subclient:

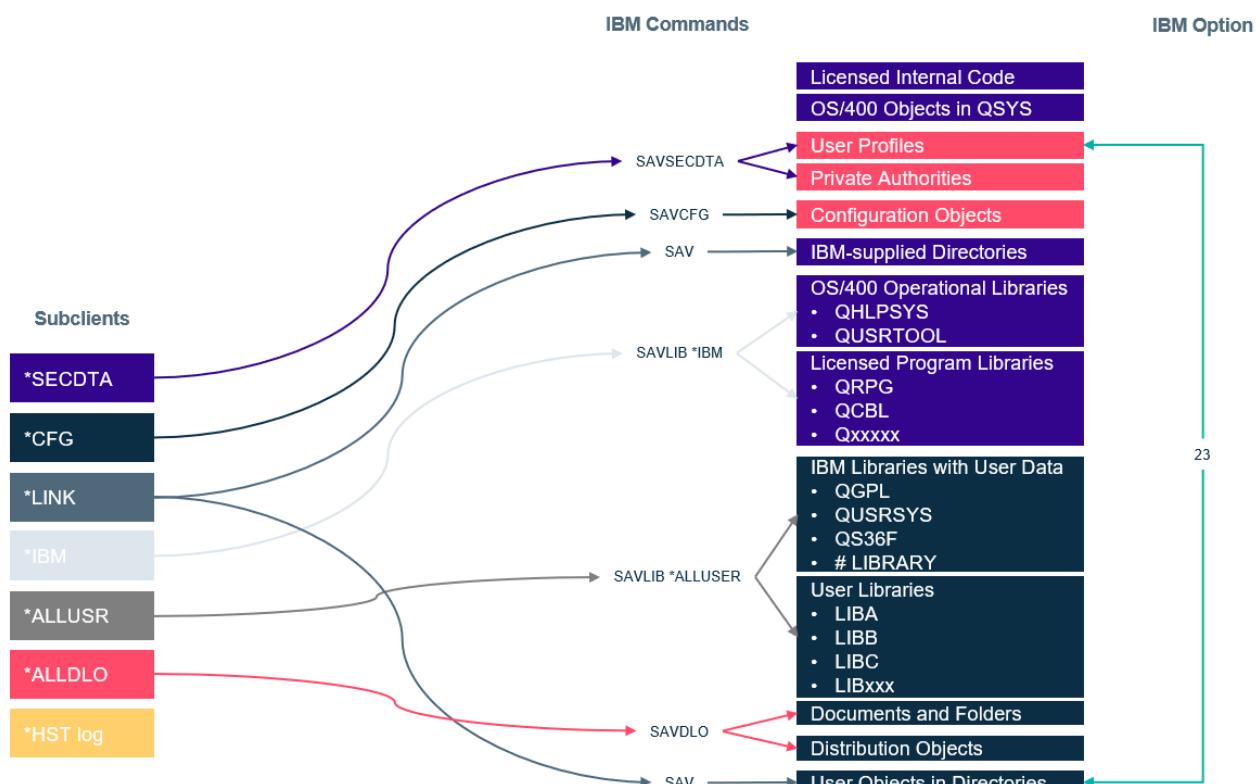
Subclient Name	Contents
*ALLDLO	All documents and folders
*ALLUSR	All user libraries
*CFG	The configuration objects
*HST log	The history logs
*IBM	All IBM supplied libraries
*LINK	The system directories, user directories, and the objects that the directories contain
*SECDTA	The security data
DR Subclient	Creates a bootable ISO with the contents mapped below

Anything not protected by these subclients will need to be added to a new custom subclient, so it can be migrated.

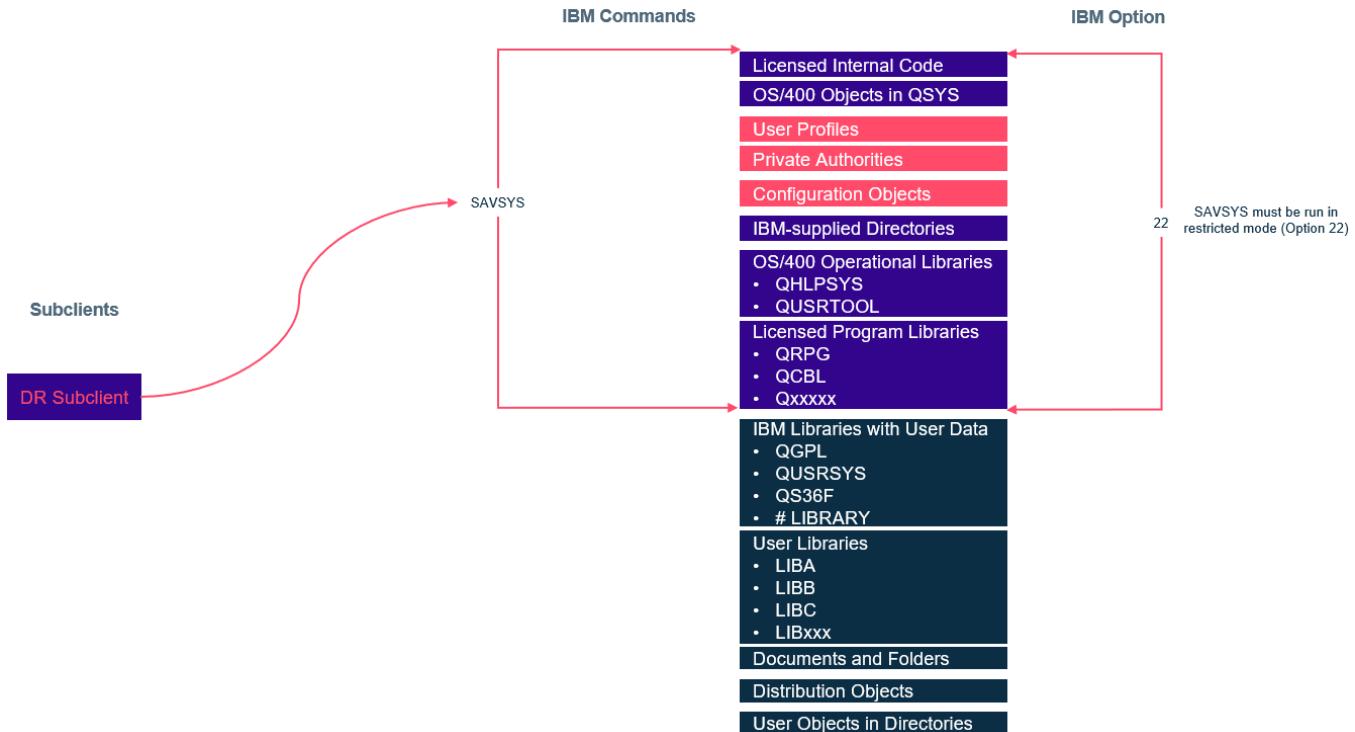
Subclient to IBM i Mapping

These diagrams show the data protected by each of the subclients, the IBM Command that is run to protect them, and the IBM option that is required. All subclients are pre-configured, these diagrams are just for awareness.

Data Subclients



DR Subclient

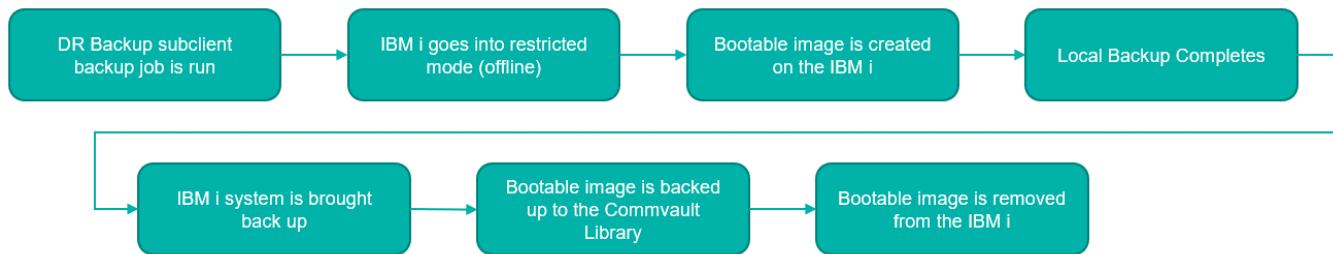


Job Steps

The following steps are automated

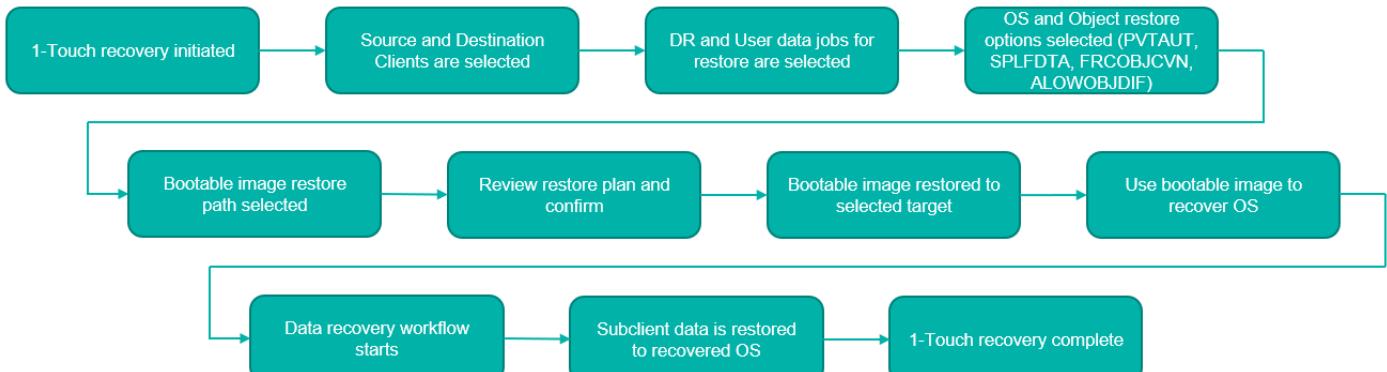
DR Backup

These steps happen in the background when the DR Subclient job runs



1-Touch Restore

Most of these steps are automated, anything requiring interactions is detailed in the guide.



Procedure

Machines

This guide will use the following machines (machine names are for illustration purpose only, actual machine/client name may be different)

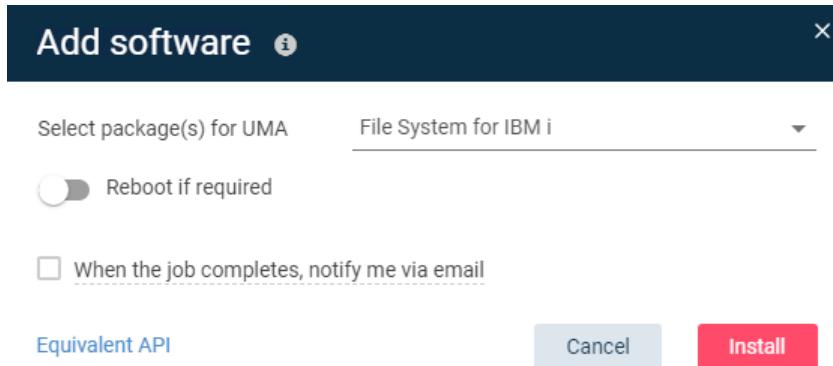
Function	Client Name	Client Hostname
CommServe Server	dpr-cs11	dpr-cs11.lab.local
On-prem MA/Access Node	dpr-uxma01	dpr-uxma01.lab.local
On-prem IBM i	Ipar6	Ipar6.lab.local
Skytap MA/Access Node	st-uxma01	generated by Skytap on boot
Skytap IBM i	st-Ipar6	10.0.0.2
IBM i User	CVBKP	

Install CommServe Server, On-Prem MediaAgent, and configure deduplicated Storage Pool

- This guide assumes the CommServe Server, and Linux MediaAgent have been pre-installed. We also assume, that a deduplicated storage pool has been created on the MediaAgent.
- This guide requires the Commserve, MediaAgents, Access Nodes all to be running Commvault FR 11.24+.
- The deduplicated storage pool should have sufficient free space to backup the whole IBM i that is being migrated.

Install IBM i File System Agent on Media Agent

1. Manage > Servers > Click the Actions button next to the MediaAgent > Add Software
2. Select the File System for IBM i package



3. Complete the installation
 - a. A download job will automatically be started if the software cache is missing the required packages

Create a plan for migration

1. Manage > Plans > Create plan > Server backup
2. Give it a name: *IBM i Data Subclients*

Plans

Create server backup plan

General

Create a new plan
New backup plan from scratch

Use existing base plan
Create plan by inheriting setting from base plan

Plan name *

IBM i Data Subclients

CANCEL

NEXT

3. Add storage pool from the on-prem MediaAgent
4. Set other options as desired

Configure on-prem IBM i as an IBM i Client

Pre-requisite: SSH and SFTP is required between the access node and the IBM i client, if this is not possible please see documentation for [manual steps](#) to deploy the CVINSTPKG.savf package after the client has been configured.

1. Protect > File Servers > Add Server > IBM i
2. Enter details of the IBM i we are going to protect

Add IBM i server i

Server name	LPAR6
Host name	lpar6.lab.local
Commvault data path	/var/commvault
CVD port	9401
Plan <small>Optional</small>	IBM i Data Subclients
Does not associate schedules from plan for DR subclient	
IBMi user credentials	
User name	CVBKP
Password	*****
Confirm password	*****
Access node client	drp-uxma01
Subsystem description	QSYS/QSERVER
Job queue	QSYS/QPWF SERVER
<input type="checkbox"/> Create job queue	
Job priority	5
Run priority	50

3. Click Save

Perform DR backup prerequisites on IBM i

- These steps should be carried out by the IBM administrator
 - The goal of the prerequisites is to make the created ISO as small as possible by removing items unnecessary for restore, details can be found here:
https://documentation.commvault.com/v11/essential/108621_performing_ibm_i_file_system_dr_backups.html
 - After the backup succeeds, the following data is backed up in the format of bootable optical volumes:
 - SAVSYS
 - LIC - License internal code.
 - OS/400 Objects in QSYS
 - SAVSECDTA
 - User profiles
 - Private authorities
 - SAVCFG (configuration objects)
 - *IBM Libraries (system libraries)
 - System libraries with user data: QSYS2, QGPL, QUSRSYS
 - Commvault Libraries: CVLIB, CVLIBOBJ
 - System files and Commvault files with logs
 - /QIBM/ProdData
 - /QOpenSys/QIBM/ProdData
1. Do not create, or include the following under QGPL, QSYS2, and QUSRSYS libraries, if they are present and can be removed safely, please remove them:
 - a. Applied PTFs
 - b. Compiled programs
 - c. Image catalog
 - d. Journal or Journal receivers
 - e. OS related image catalog files
 - f. SAVF files
 - g. Spool output files
 2. Do not create any library starting with the letter 'Q'.

Run IBM i Disk Space Report

If there is an available Disk Space Report on the IBM i system, that was run within the last 3 days, this will be used to predict the size of the 1-Touch recovery DVD.

The Disk Space Report should be run/scheduled by an IBM i administrator and can take some time to run.

The backup job will verify if there is sufficient free disk space to run the 1-Touch backup. The job will fail if the free space is less than double the estimated DVD size.

Apply additional setting

This additional setting will create a single ISO image, instead of spanning the image over multiple ISOs.

Note: This is default behavior in FR11.26, so the additional setting is only needed in FR1124 and FR11.25 environments.

Additional Setting	SingleDVDImage
Description	Use this additional setting to create a single DVD image during an IBM i DR backup.
Category	ProxyClients
Type	Boolean
Value	TRUE
Where to apply	Source Access Node
URL	SingleDVDImage

Run IBM i Client Backups

1. Click Protect > File servers > LPAR6
2. Click Actions next to DR Subclient > Back up
3. Select Resume (*STSSBS) > OK
4. Once the backup is complete run Full backups for all other subclients

Recommendations:

- You can run *ALLDLO, *CFG, *HST Log, and *SECDTA simultaneously
- *IBM and *LINK should be run individually
- If *ALLUSR has very large libraries separate them into smaller subclients

Create and deploy MediaAgent (with appropriate storage) on Skytap

1. Login to Skytap
2. Environments > New environment
3. Select a template, for this guide we will use *CentOS 7.5 Server Firstboot*
4. Create Environment

My Company Skytap All

Sort by date created ↓

CentOS 7.5 Server Firstboot

Project Owner Region: US-Virginia-M-1

VM Status Type Storage Metered RAM Licenses Endpoints

CentOS 7 Server x64 Powered off x86 30 GB 1 GB --

5. Optional: Name your environment, and MediaAgent

6. Select VM settings

- a. Network Adapters: Configure appropriate network interfaces
- b. Hardware: Configure appropriate CPU, RAM, Disks (be sure to have enough free space for the backups and the ISO to be restored)

In this guide we are using local disk on the Skytap MA, you can also use cloud storage but be aware of additional costs that may be incurred.

Compute

Type: x86

RAM: 8 GB

vCPUs: 4 - (4 sockets x 1 core per socket)

Storage

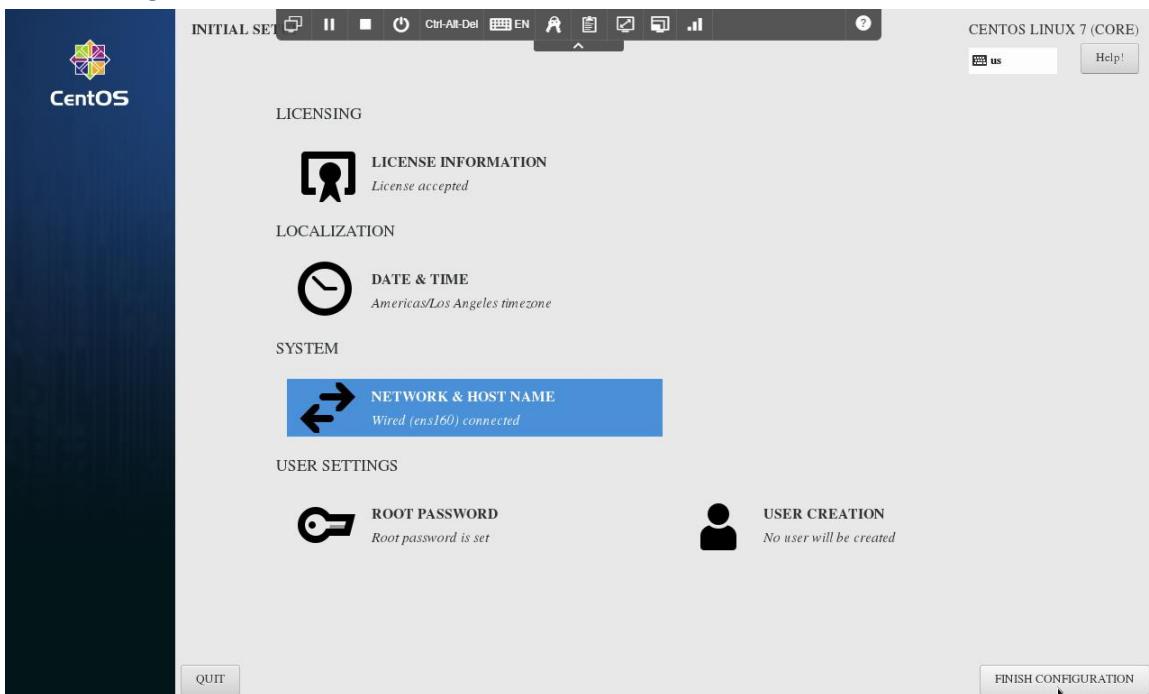
Disk size	Disk ID
250 GB	SCSI Controller: 0, LUN: 0
100 GB	SCSI Controller: 0, LUN: 1
1024 GB	SCSI Controller: 0, LUN: 2

4,096 GB limit - 1,374 GB used, 2,722 GB available

3 of 15 in use

7. Power on the MediaAgent
8. Accept the License
9. Set a root password
10. Optional: Set time zone, configure users, etc

11. Finish Configuration



12. Login and update the MediaAgent

- For CentOS: yum update -y

13. Configure storage

```
[root@st-uxma01 ~]# df -h
Filesystem           Size  Used Avail Use% Mounted on
devtmpfs              3.9G   0    3.9G  0% /dev
tmpfs                3.9G   0    3.9G  0% /dev/shm
tmpfs                3.9G  17M  3.9G  1% /run
tmpfs                3.9G   0    3.9G  0% /sys/fs/cgroup
/dev/mapper/centos_centos7sx64-root  27G  6.1G  21G  23% /
/dev/mapper/store_vg-store_lv       1.0T  33M  1.0T  1% /store
/dev/mapper/ddb_vg-ddb_lv          70G  33M  70G  1% /ddb
/dev/sda1                1014M 241M  774M  24% /boot
//gw/shared               10G  1.5G  8.6G  15% /media/shared_drive
tmpfs                 783M   0   783M  0% /run/user/0
```

14. Create appropriate network topologies to allow communication between on-premise and Skytap components

15. Deploy the MediaAgent to the CommCell using best practices for your environment installing the *MediaAgent* and *File System for IBM i* packages at minimum.

Create a deduplicated storage pool on Skytap MediaAgent

1. Storage > Disk > Add
2. Give the Storage Pool a Name: *Skytap Migration Pool*
3. Add the storage and deduplication DB based on the previously configured mountpoints.

Add storage

MediaAgent	st-uxma01	<input type="button" value="+"/>
Backup location	/store	<input type="button" value=""/>
<input checked="" type="checkbox"/> Use deduplication		
Deduplication DB location	/ddb	<input type="button" value=""/>

4. Save

Create a secondary copy pointing to the Skytap storage pool

1. Manage > Plans > *IBM i Data Subclients*
2. Under Backup Destinations > Click Add > Copy
3. Enter copy details

Add copy

Name	Skytap Copy
Storage	Skytap Migration Pool
Source	Primary
Backups to copy	All Jobs
Retention rules	
Retention period	1 Month(s) <input type="button" value="▼"/>
<input checked="" type="checkbox"/> Extended Retention rules	

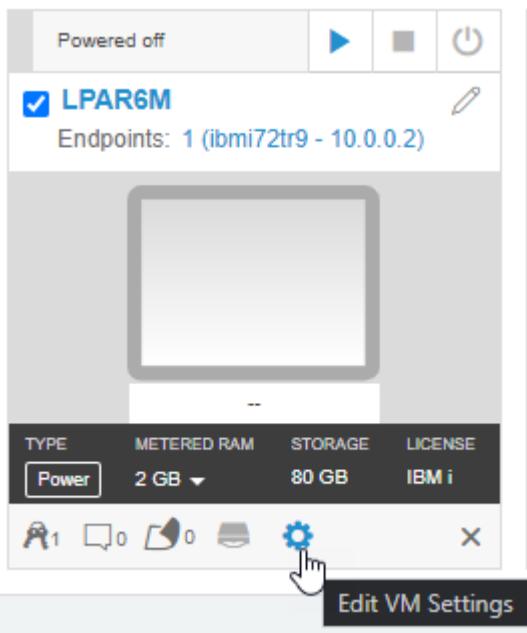
4. Save

Copy jobs to Skytap MediaAgent

1. Plans will have an automatic schedule for Secondary copies
2. Click Jobs
3. After 5 min there should be an Auxiliary Copy running.
4. The Auxiliary copy can run while the next steps are being completed

Create IBM i virtual machine in Skytap

1. In the Skytap environment > Click Add VMs
2. Select an appropriate IBM i template
3. Add VM(s)
4. Once created give it a name: *LPAR6M*
5. Edit the VM Settings



6. Hardware
7. Set the required RAM, CPU, Disks
8. Under VM & Guest OS
9. Set Boot mode to *D Mode side – Manual*

This will allow us to boot from the DVD

VM & Guest OS

Guest OS Setting the Guest OS determines available hardware for the VM. [Learn more](#).
IBM i

Boot mode Enable alternate IPL sources and operating modes to permit administrative tasks such as applying fixes or installing programs. [Learn more](#).
D Mode side - Manual

Services The VM must be running to activate [dedicated service tools](#) (function 21) or [main storage dump](#) (function 22).

Activate dedicated service tools

Main storage dump

Configure Skytap IBM i as an IBM i Client

1. Protect > File Servers > Add Server > IBM i
2. Enter details of the IBM i we are going to restore to

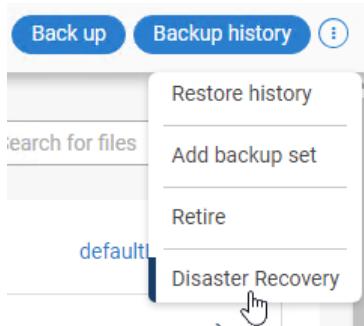
Add IBM i server ⓘ

Server name	LPAR6M
Host name	10.0.0.2
Commvault data path	/var/commvault
CVD port	9401
Plan <small>Optional</small>	Click to select
IBMi user credentials	
User name	CVBKP
Password
Confirm password
Access node client	st-uxma01
Subsystem description	QSYS/QSERVER
Job queue	QSYS/QPWFSERVER
<input type="checkbox"/> Create job queue	
Job priority	5
Run priority	50

3. Click Save

Start 1-Touch Restore process

1. Protect > File Servers > LPAR6 > Actions > Disaster Recovery



2. Fill in:

- Destination Client
- BackupSet to restore from
- DR backup job to recover
- Restore the DVD image to the Skytap MediaAgent
- Select the Copy Precedence to restore from, we want to restore this data from the Skytap MediaAgent:
 - If using plans (as in this guide):
 - Copy precedence 1 will be the default created snap copy on the local MediaAgent
 - Copy precedence 2 will be on the local MediaAgent.
 - Copy Precedence 3 will be on the Skytap MediaAgent

Disaster Recovery

Destination client	LPAR6M
User data backupset	defaultBackupSet
DR backup job to recover	1047233
Client to restore DVD images	st-uxma01
Destination path to store DVD images	/iso
Copy precedence for restore jobs	3
Log output destination <small>Optional</small>	
<input type="checkbox"/> Restore SPLFTDA	

- If using storage policies choose the appropriate copy precedence pointing to your Skytap copy.

3. Press Submit

1-Touch restore job is suspended at this point

At this point the IBM i DR Recovery Job will be suspended waiting on the restore of the ISO on the Skytap IBM i

1047985 - [IBM i DR Recovery] X

[View job details](#) [Resume](#) [Kill](#) [More actions ▾](#)

Job summary

Type	Current phase
IBM i DR Recovery	SuspendWorkflow
Status	Progress
Suspended	<div style="width: 100%;">100%</div>
Elapsed time	Source client computer
27 min 27 sec	DPR-CS11
Last update time	Start time
Sep 22, 2021 7:01:31 AM	Sep 22, 2021 6:51:28 AM
Job started by	Workflow name
DPR\rfowler (Third Party)	IBM i DR Recovery
Number of files transferred	
0	

Error summary

19:857 Waiting for user to confirm when IBM i OS recovery is completed.

Source: DPR-CS11, Process: Workflow

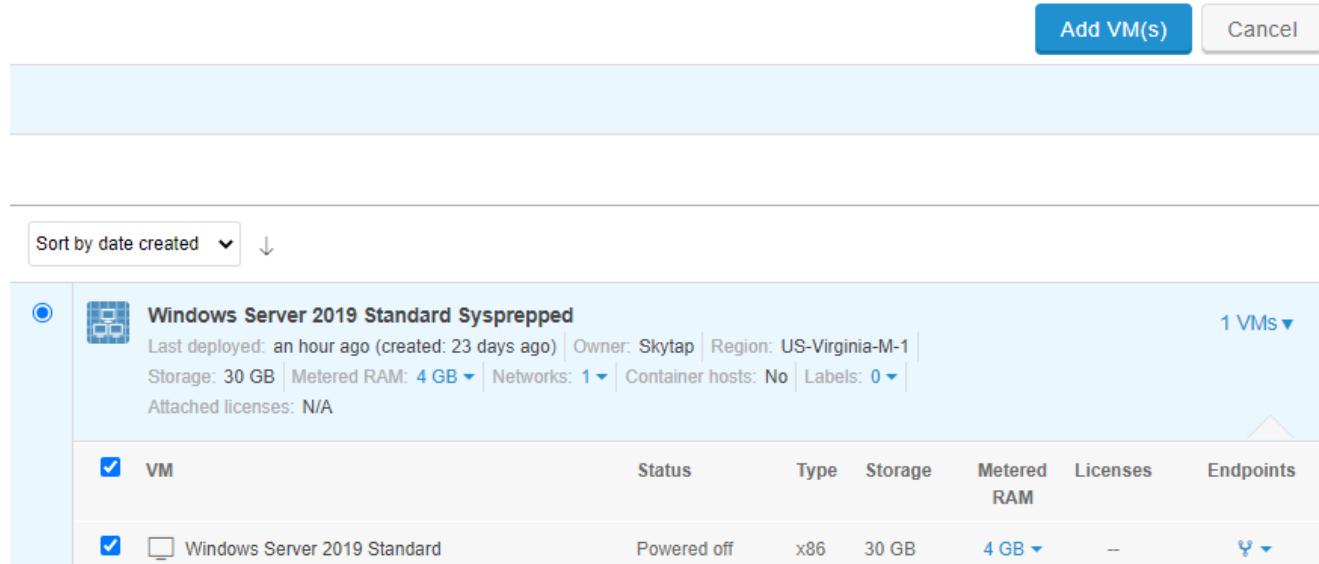
Events

Severity...↑	Event ID	Description	⋮
Info	4282658	Workflow [IBM i DR Recovery] started.	4282658

Upload DR Backup ISO to Skytap

To upload the ISO we need a GUI and a browser, as the ISO resides on the Skytap MediaAgent, there is two options. The first being to install a GUI on the MediaAgent and upload directly, the second is to configure another VM with a GUI. This time we are going to

1. Create a new Windows server 2019 VM in the Skytap environment (any VM with a GUI/browser and SCP would work)



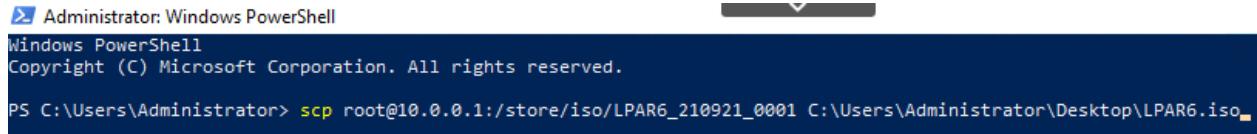
The screenshot shows the Skytap interface for creating a new VM. At the top right are 'Add VM(s)' and 'Cancel' buttons. Below is a table listing a single VM:

Windows Server 2019 Standard Sysprepped		1 VMs▼						
		Last deployed: an hour ago (created: 23 days ago) Owner: Skytap Region: US-Virginia-M-1 Storage: 30 GB Metered RAM: 4 GB Networks: 1 Container hosts: No Labels: 0 Attached licenses: N/A						
<input checked="" type="checkbox"/>	VM	Status	Type	Storage	Metered RAM	Licenses	Endpoints	
<input checked="" type="checkbox"/>	Windows Server 2019 Standard	Powered off	x86	30 GB	4 GB	-	Y	

2. Configure it with a big enough disk to hold the ISO and complete the basic setup
3. Copy the ISO from the Skytap MediaAgent to the Windows server

- a. Open PowerShell and use the SCP command

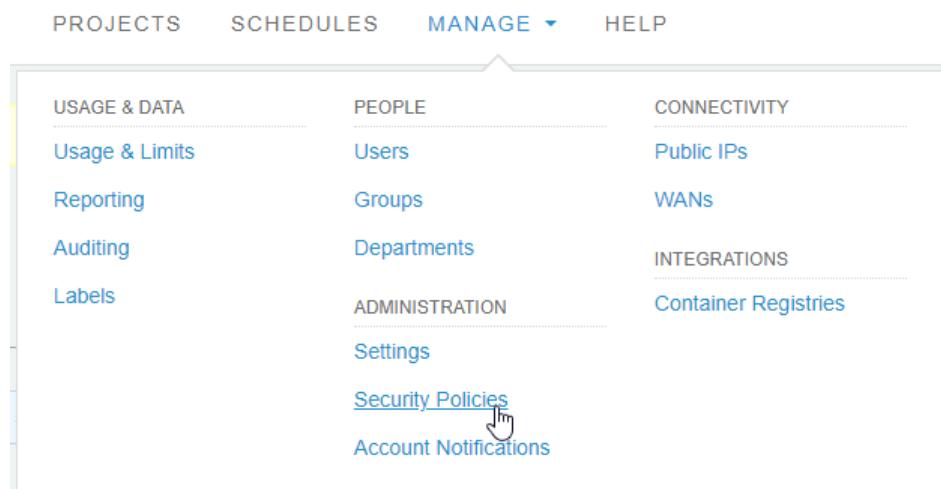
```
scp user@Skytap MediaAgent IP:/path/isofile x:\DesktinationPath\DestinationFile.iso
```



```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

PS C:\Users\Administrator> scp root@10.0.0.1:/store/iso/LPAR6_210921_0001 C:\Users\Administrator\Desktop\LPAR6.iso
```

4. From the Skytap Windows VM > login to Skytap > Manage > Security Policies



The screenshot shows the Skytap management interface with the 'MANAGE' tab selected. Under the 'SECURITY' section, the 'Security Policies' link is highlighted with a cursor icon.

5. Set the Session Expiration Time to Never Expire

6. Press Save

Session Expiration Time **Never expire***

* Setting the session

7. Click Assets > Upload assets

8. Select the iso to upload



Upload assets

Upload to: **US-Virginia-M-1** ▾

Drop your files here or

LPAR6_210921_0001.iso	Status: Ready to upload Region: US-Virginia-M-1 Size: 39 GB	
------------------------------	---	--

9. Press Upload 1 file and keep this window open until the upload is complete

This window must remain open while files are uploading.

Upload speed: 13.14 MB/sec

LPAR6_210921_0001.iso	Status: Uploading Region: US-Virginia-M-1 Size: 39 GB	4% completed Pause Delete
------------------------------	---	--

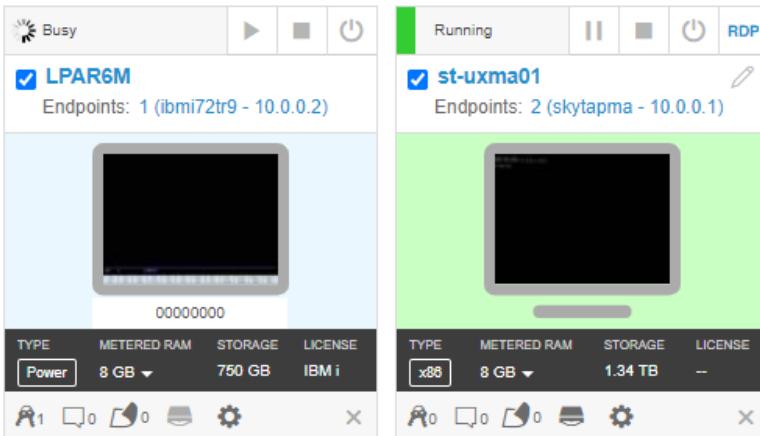
10. This VM is no longer required

Restore the OS on the Skytap IBM i

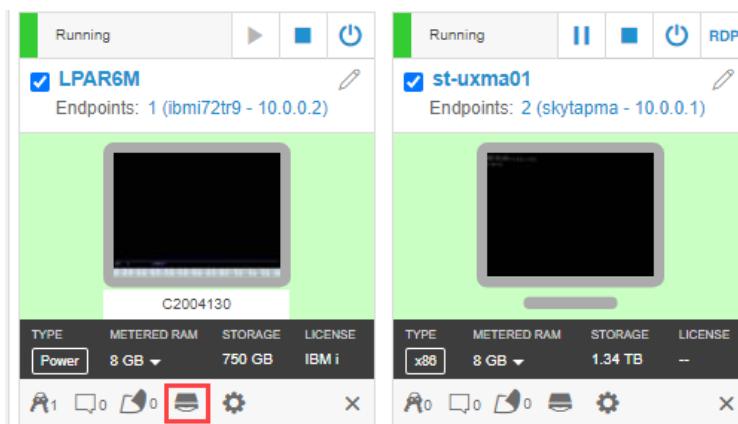
Documentation used for these steps can be found here:

https://documentation.commvault.com/v11/expert/16271_restoring_minimal_operating_system_for_ibm_i_file_system_agent_client.html

1. Power on the Skytap IBM i VM



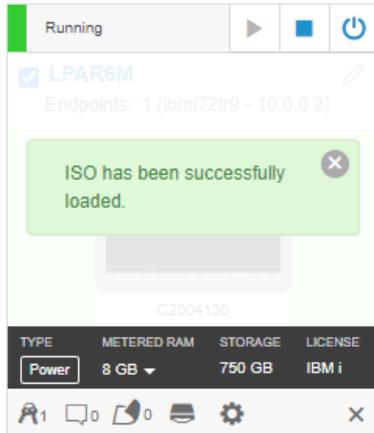
2. As soon as the Load ISO icon is available click on it.



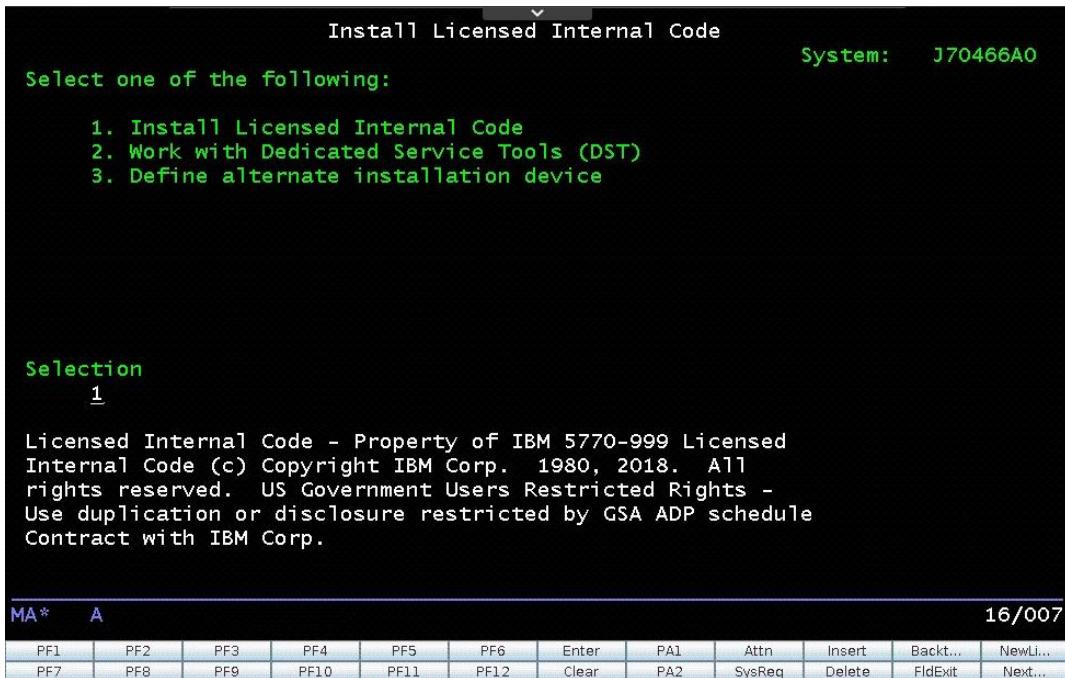
3. Select the uploaded ISO and press Load ISO



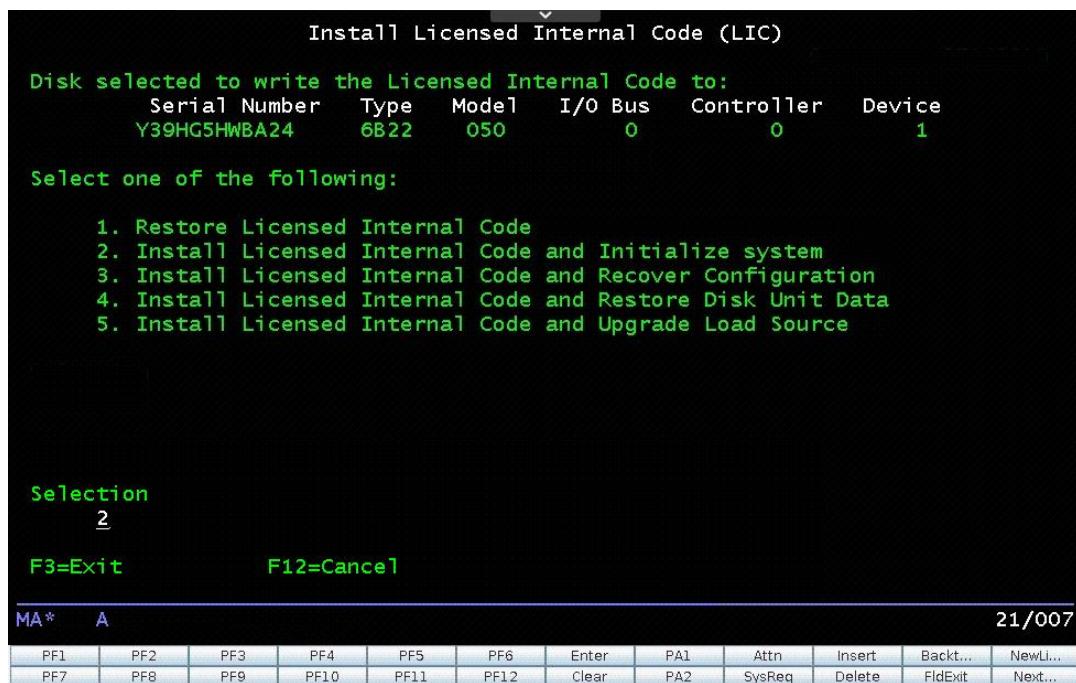
4. There will be a confirmation message on the VM



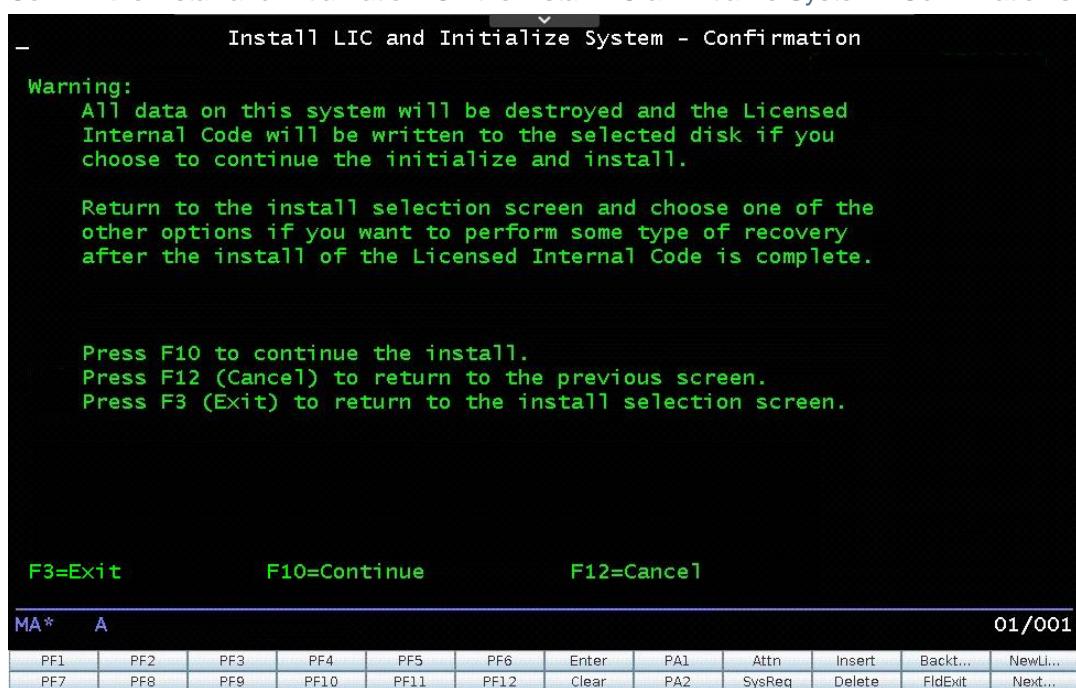
5. Install the Licensed Internal Code (LIC). On the Install Licensed Internal Code screen, select 1 to install the code and then press Enter.



6. Install the Licensed Internal Code (LIC) and initialize the system. On the Install Licensed Internal Code screen, select 2 to install the code and initialize the system and then press Enter.



7. Confirm the install and initialization. On the Install LIC an Initialize System - Confirmation screen, press F10.



8. Wait for the status screens to complete. The Initialize the Disk - Status screen displays followed by the Install Licensed Internal Code - Status screen. You do not need to press anything on these screens.

Initialize the Disk - Status

The load source disk is being initialized.

Elapsed time in minutes : 26.5

Please wait.

Wait for next display or press F16 for DST main menu

MA*	A	01/001										
PF1	PF2	PF3	PF4	PF5	PF6	Enter	PA1	Attn	Insert	Back...	NewLi...	
PF7	PF8	PF9	PF10	PF11	PF12	Clear	PA2	SysReq	Delete	FldExit	Next...	

Install Licensed Internal Code - Status

Install of the Licensed Internal Code in progress.

Percent complete | 95% |

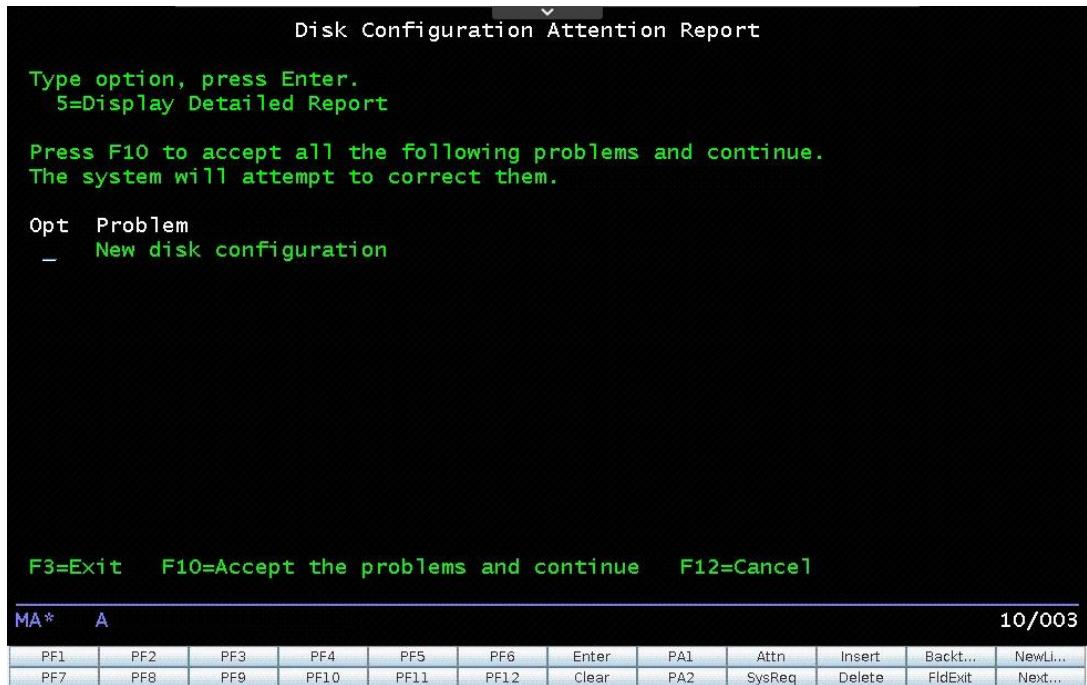
Elapsed time in minutes : 4.0

Please wait.

Wait for next display or press F16 for DST main menu

MA*	A	01/001									
PF1	PF2	PF3	PF4	PF5	PF6	Enter	PA1	Attn	Insert	Back...	NewLi...
PF7	PF8	PF9	PF10	PF11	PF12	Clear	PA2	SysReq	Delete	FldExit	Next...

9. Accept the warnings on the report. Press F10 on the Disk Configuration Problem Report screen.



Disk Configuration Attention Report

Type option, press Enter.
5=Display Detailed Report

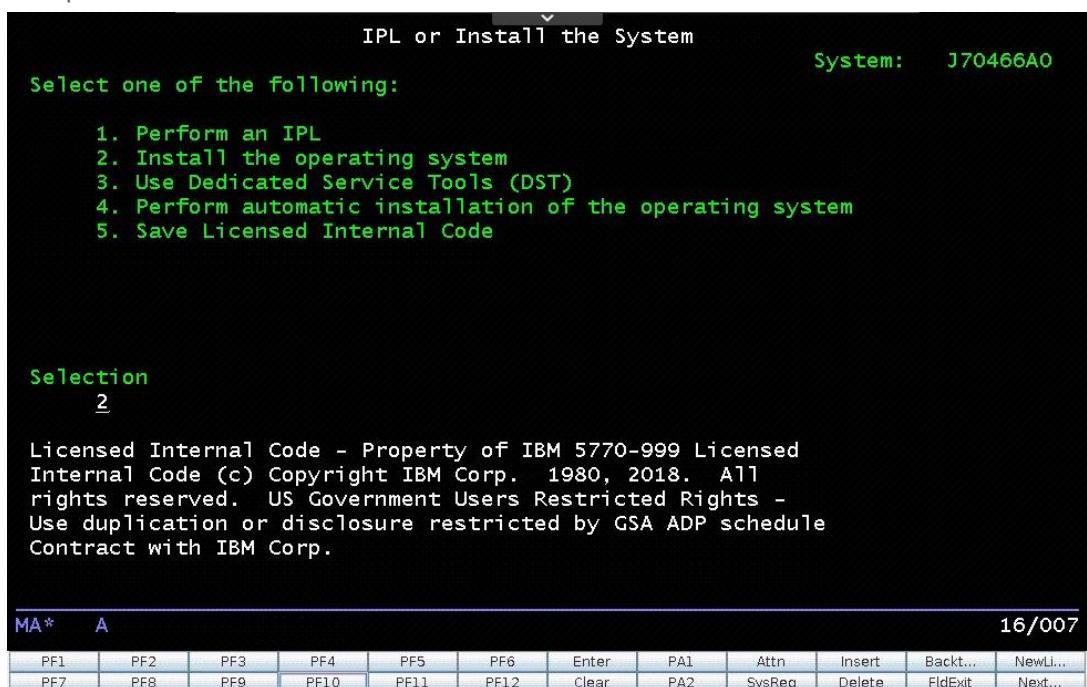
Press F10 to accept all the following problems and continue.
The system will attempt to correct them.

Opt Problem
— New disk configuration

F3=Exit F10=Accept the problems and continue F12=Cancel

MA*	A	10/003									
PF1	PF2	PF3	PF4	PF5	PF6	Enter	PA1	Attn	Insert	Backt...	NewLi...
PF7	PF8	PF9	PF10	PF11	PF12	Clear	PA2	SysReq	Delete	FldExit	Next...

10. On the IPL or Install the System screen, select 2 to install the operating system and initialize the system and then press Enter.



IPL or Install the System System: J70466A0

Select one of the following:

1. Perform an IPL
2. Install the operating system
3. Use Dedicated Service Tools (DST)
4. Perform automatic installation of the operating system
5. Save Licensed Internal Code

Selection
2

Licensed Internal Code - Property of IBM 5770-999 Licensed Internal Code (c) Copyright IBM Corp. 1980, 2018. All rights reserved. US Government Users Restricted Rights - Use duplication or disclosure restricted by GSA ADP schedule Contract with IBM Corp.

MA*	A	16/007									
PF1	PF2	PF3	PF4	PF5	PF6	Enter	PA1	Attn	Insert	Backt...	NewLi...
PF7	PF8	PF9	PF10	PF11	PF12	Clear	PA2	SysReq	Delete	FldExit	Next...

11. Select 2 to use the optical device for the installation

```
Install Device Type Selection
System: J70466AO

Select the installation device type:

1. Tape
2. Optical
3. Virtual device - preselected image catalog
4. Current alternate selected device
5. Network device
6. Optical Container

Selection
2

F3=Exit F12=Cancel

MA* A 20/007

PF1 PF2 PF3 PF4 PF5 PF6 Enter PA1 Attn Insert Backt... NewLi...
PF7 PF8 PF9 PF10 PF11 PF12 Clear PA2 SysReq Delete FldExit Next...
```

12. Confirm your selection of the operating system installation, press Enter.

```
- Confirm Install of the Operating System
System: J70466AO

Press Enter to confirm your choice to install the operating
system.

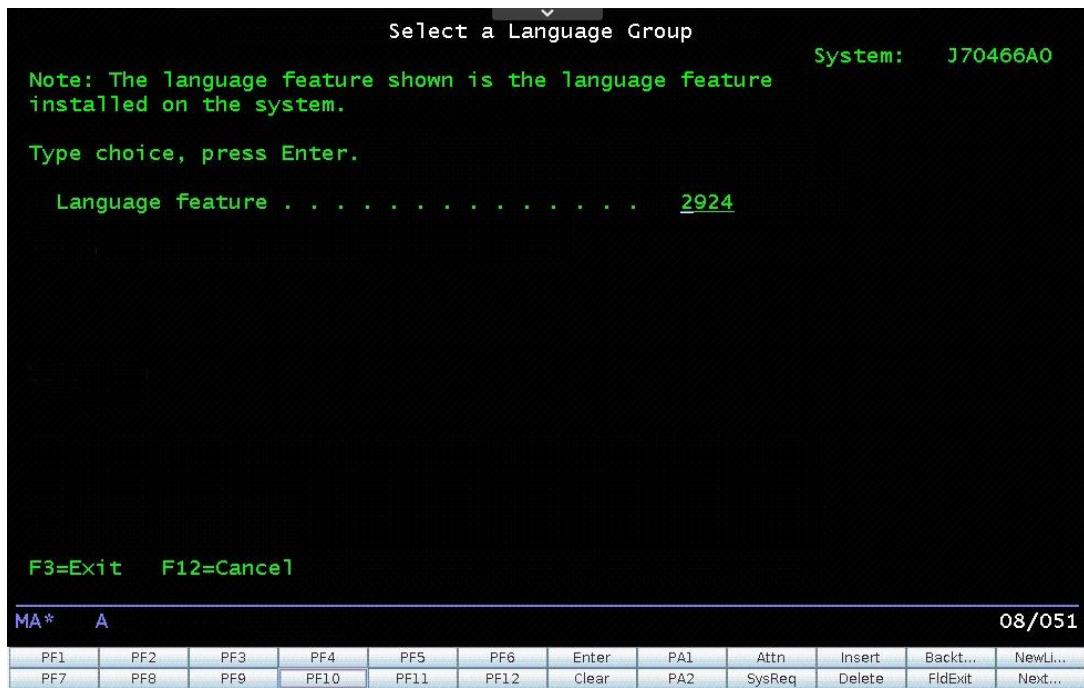
Press F12 to return and cancel your choice to install the
operating system.

F12=Cancel

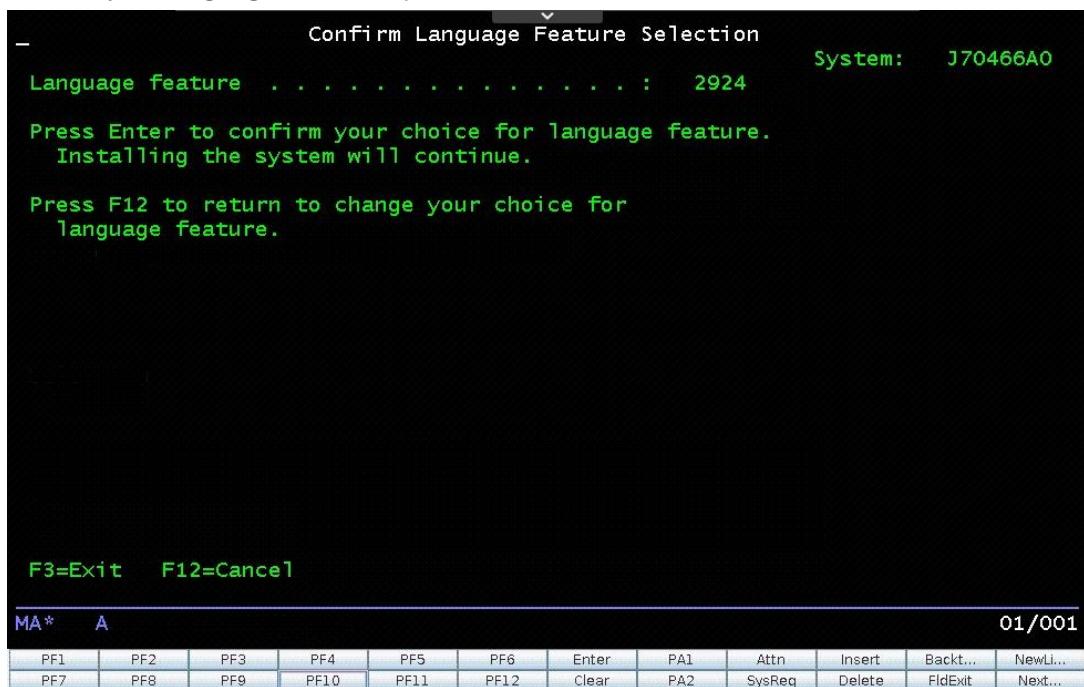
MA* A 01/001

PF1 PF2 PF3 PF4 PF5 PF6 Enter PA1 Attn Insert Backt... NewLi...
PF7 PF8 PF9 PF10 PF11 PF12 Clear PA2 SysReq Delete FldExit Next...
```

13. To use English as the language, on the Select a Language Group screen, enter 2924 and then press Enter. In case your IBM i system uses a different language feature, please choose the correct language number.



14. Confirm your language selection, press Enter.



15. Select the DASD option.

- If you have completed the DASD configuration, select the Keep the current disk configuration option (1).

- If you need to configure DASD, select one of the following:

- Add all disk units to the system auxiliary pool

Select this option to add all non-configured disk units to the system auxiliary pool (ASP 1).

Use this option when the system ASP has a few units and you have many non-configured units. All data stored on the units that are added will be deleted before adding units to the

system.

Note: This option will not balance data in the system ASP.

A series of screens display the status and any problems. If you see a problem screen, press F10. The process is complete when the "IPL step.....: Start the operating system" message appears.

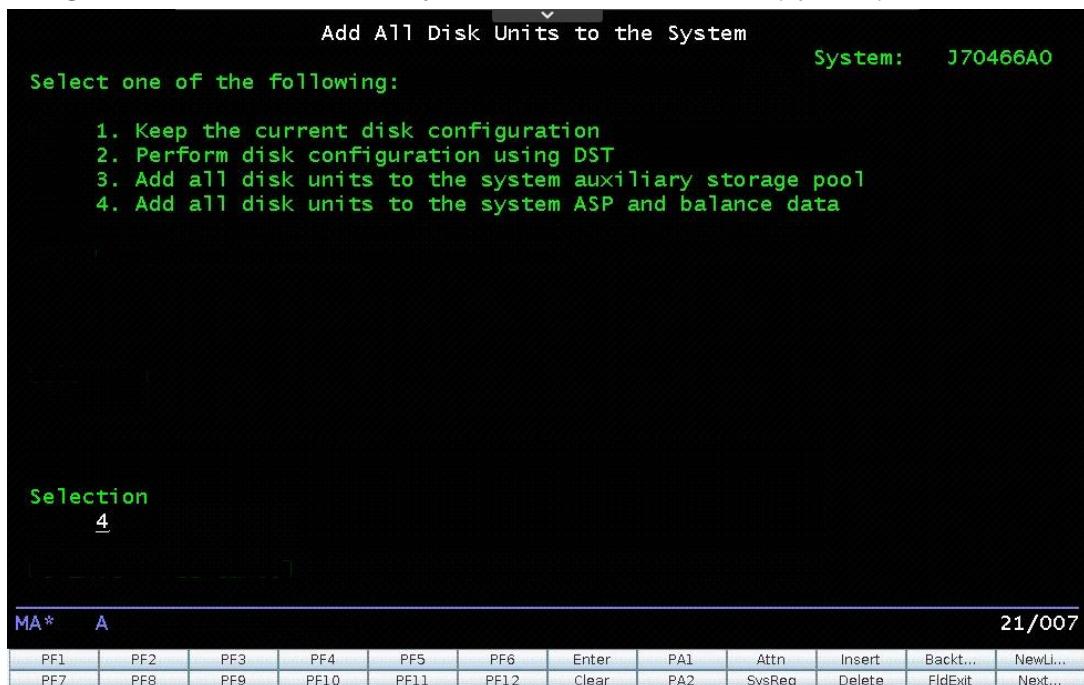
ii. Add all disks to the system ASP and balance data

This option adds all the non-configured disk units to the system ASP and then balances the data in the system ASP. Use this option when there are a few non-configured disk units, or when the system ASP contains many disk units. All data stored on the added units are deleted before they are added to the system ASP.

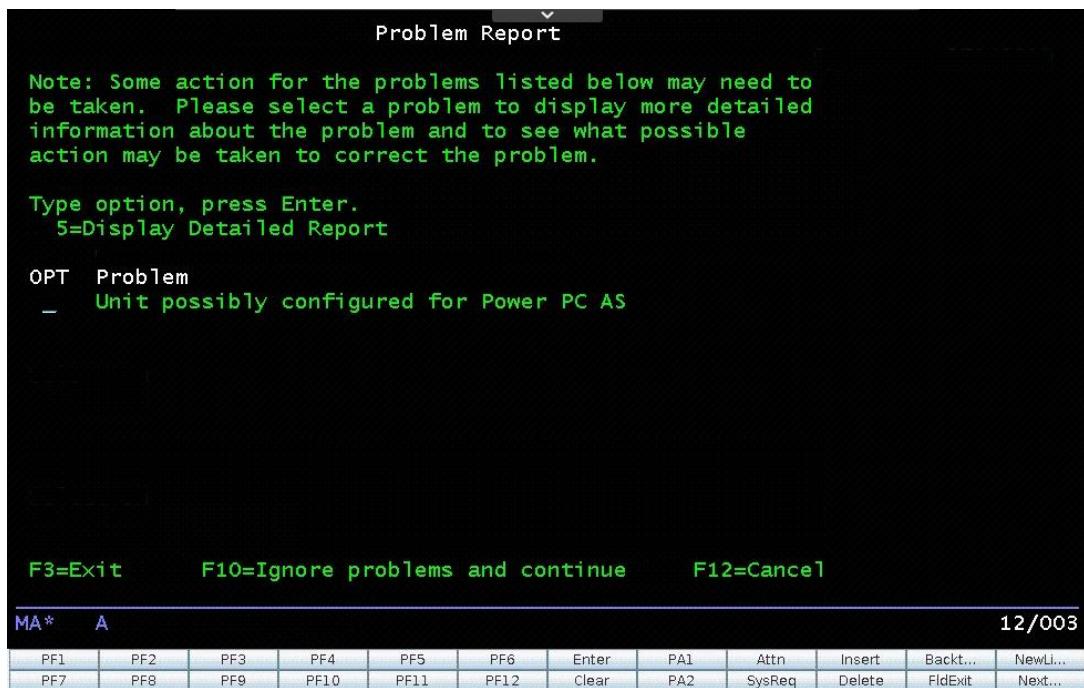
Note: You may have to wait for a few minutes with this option.

A series of screens display the status and any problems. If you see a problem screen, press F10. The process is complete when the "IPL step.....: Start the operating system" message appears.

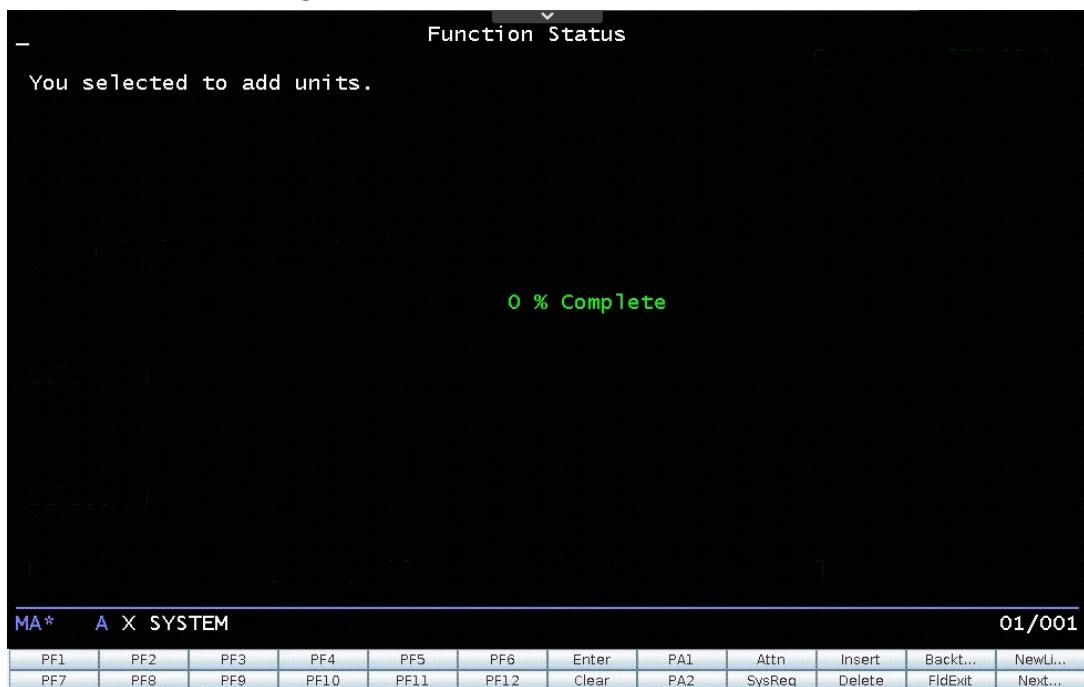
This guide will add all disks to the system ASP and balance data (option 4)



16. Press F10 to continue



17. Disks will be added/configured



18. Change the install options. On the Install the Operating System screen select 2 to make updates.

```

Install the Operating System

Type options, press Enter.

Install
option . . . . . 2
      1=Take defaults (No other
          options are displayed)
      2=Change install options

Date:
Year . . . . . 21      00-99
Month . . . . . 09      01-12
Day . . . . . 24      01-31

Time:
Hour . . . . . 09      00-23
Minute . . . . . 48      00-59
Second . . . . . 14      00-59

MA*   A                               11/025
PF1  PF2  PF3  PF4  PF5  PF6  Enter  PA1  Attn  Insert  Backt...  NewLi...
PF7  PF8  PF9  PF10 PF11 PF12 Clear  PA2  SysReq Delete  FldExit  Next...

```

19. Press Enter. A status screen displays. There is no action required.

20. Choose the restore options. On the Specify Install Options screen:

- To restore the program and language options from the backup, select 1 for the Restore option.
- To clear the job queue, select 1 for the Job and output queues option.
- To distribute the operating system, select 1 for the Distribute Operating System On available disk units option.
- Verify that all options are 1 and then press Enter.

```

Specify Install Options

Type options, press Enter.

Restore option . . . . . 1  1=Restore programs and language objects
                           from the current media set
                           2=Do not restore programs or
                           language objects
                           3=Restore only language objects
                           from current media set
                           4=Restore only language objects
                           from a different media set using the
                           current install device

Job and output
queues option . . . . . 1  1=Clear, 2=Keep

Distribute operating system
on available disk units. . 1  1=Yes, 2=No

MA*   A                               05/035
PF1  PF2  PF3  PF4  PF5  PF6  Enter  PA1  Attn  Insert  Backt...  NewLi...
PF7  PF8  PF9  PF10 PF11 PF12 Clear  PA2  SysReq Delete  FldExit  Next...

```

21. Verify the restore options. On the Specify Restore Options screen, verify all entries are set to 1 and then press Enter.

Specify Restore Options

Type options, press Enter.

Restore from the installation media:

System information	<u>1</u>	1=Restore, 2=Do not restore
Edit descriptions	<u>1</u>	1=Restore, 2=Do not restore
Message reply list	<u>1</u>	1=Restore, 2=Do not restore
Job descriptions	<u>1</u>	1=Restore, 3=Keep customization
Subsystem descriptions . . .	<u>1</u>	1=Restore, 3=Keep customization

22. The install will proceed

23. Sign into the system. On the SIGN ON screen, enter QSECOFR and then press Enter.
You do not need to enter a password.

Sign On	
System	: IBMIP9A
Subsystem	: QCTL
Display	: QCONSOLE
User	<u>QSECOFR</u>
Program/procedure	_____
Menu	_____
Current library	_____

24. Set the system options. On the IPL Options screen, set the following options:

- a. Set the date and time.
 - b. Set the Start system to restricted state option to Y.
 - c. Set the Set Major System Options option to Y.
 - d. Set the Define or Change System at IPL option to Y.

IPL Options

Type choices, press Enter.

System date	09 / 24 / 21	MM / DD / YY
System time	06 : 26 : 00	HH : MM : SS
System time zone	QNO500EST	F4 for list
Clear job queues	N	Y=Yes, N=No
Clear output queues	N	Y=Yes, N=No
Clear incomplete job logs	N	Y=Yes, N=No
Start print writers	N	Y=Yes, N=No
Start system to restricted state	Y	Y=Yes, N=No
Set major system options	Y	Y=Yes, N=No
Define or change system at IPL	Y	Y=Yes, N=No

Last power-down operation was ABNORMAL

MA* A 05/047

25. Press Enter.

26. Set the automatic configuration. On the Set Major System Options screen:

- a. Set Enable automatic configuration to Y
 - b. Set Device configuration naming to *NORMAL

```

Set Major System Options

Type choices, press Enter.

Enable automatic configuration . . . . . Y
Device configuration naming . . . . . *NORMAL
Y=Yes, N=No
*NORMAL, *S36
*DEVADR
Default special environment . . . . . *NONE
*NONE, *S36

MA* A 05/047
PF1 PF2 PF3 PF4 PF5 PF6 Enter PA1 Attn Insert Backt... NewLi...
PF7 PF8 PF9 PF10 PF11 PF12 Clear PA2 SysReq Delete FldExit Next...

```

27. Set the system values. On the Define or Change the System at IPL screen, select 3 and then press Enter.

```

Define or Change the System at IPL System: IBMIP9A
Select one of the following:
1. Configuration commands
2. Change user profile
3. System value commands
4. Network attribute commands
5. General object commands
6. Work with shared pools
7. Change IPL attributes

Selection
3

F3=Exit and continue IPL
(C) COPYRIGHT IBM CORP. 1980, 2018.
MA* A 21/007
PF1 PF2 PF3 PF4 PF5 PF6 Enter PA1 Attn Insert Backt... NewLi...
PF7 PF8 PF9 PF10 PF11 PF12 Clear PA2 SysReq Delete FldExit Next...

```

28. Select option 3 to work with the system values

```
System Value Commands
System: IBMIP9A

Select one of the following:

1. Display system value
2. Change system value
3. Work with system values

Selection
2

F3=Exit F12=Cancel
(CC) COPYRIGHT IBM CORP. 1980, 2018.

MA* A 21/007

PF1 PF2 PF3 PF4 PF5 PF6 Enter PA1 Attn Insert Backt... NewLi...
PF7 PF8 PF9 PF10 PF11 PF12 Clear PA2 SysReq Delete FldExit Next...
```

29. Set the values per the table:

Screenshots below the table show how to set the value of 1 for the system value QVFYOBJRST

Press tab until you find the desired value and set the option to 2 > press enter to change

Enter a new value > press enter to set

System Value	New Setting
QALWOBJRST	*ALL
QFRCCVNRST	0
QINACTITV	*NONE
QIPLTYPE	2
QJOBMSGQFL	*PRTWRAP
QJOBMSGQMX	30 (minimum, 64 recommended)
QLMTDEVSSN	0
QLMTSECOFR	0
QMAXSIGN	*NOMAX
QPFRADJ	2
QPWDEXPITV	*NOMAX
QSCANFSCTL	*NOPOSTRST
QVFYOBJRST	1

e.g.

Work with System Values

System: IBMIP9A

Position to Starting characters of system value
 Subset by Type *ALL F4 for list

Type options, press Enter.
 2=Change 5=Display

Option	Value	Type	Description
-	QTSEPOOL	*STG	Time slice end pool
-	QUPSDLYTIM	*SYSCTL	Uninterruptible power supply delay time
-	QUPSMMSGQ	*SYSCTL	Uninterruptible power supply message queue
-	QUSEADPAUT	*SEC	Use adopted authority
-	QUSRLIBL	*LIBL	User part of the library list
-	QUTCOFFSET	*DATTIM	Coordinated universal time offset
2	QVFYOBJRST	*SEC	Verify object on restore
-	QYEAR	*DATTIM	Year

Bottom

F3=Exit F4=Prompt F5=Refresh F11=Display names only F12=Cancel

System value QVFYOBJRST changed from 3 to 1.

MA* A 18/004

PF1	PF2	PF3	PF4	PF5	PF6	Enter	PA1	Attn	Insert	Backt...	NewLi...
PF7	PF8	PF9	PF10	PF11	PF12	Clear	PA2	SysReq	Delete	FldExit	Next...

Change System Value

System value : QVFYOBJRST
 Description : Verify object on restore

Type choice, press Enter.

Verify object on
 restore 1 1-5

1 Do not verify signatures on restore. Restore user-state objects regardless of their signature.

2 Verify signatures on restore. Restore unsigned user-state objects. Restore signed user-state objects, even if the signatures are not valid.

3 Verify signatures on restore. Restore unsigned user-state objects. Restore signed user-state objects only if the signatures are valid.

More...

F3=Exit F5=Refresh F12=Cancel

MA* A 10/029

PF1	PF2	PF3	PF4	PF5	PF6	Enter	PA1	Attn	Insert	Backt...	NewLi...
PF7	PF8	PF9	PF10	PF11	PF12	Clear	PA2	SysReq	Delete	FldExit	Next...

Work with System Values

System: IBMIP9A

Position to Starting characters of system value
 Subset by Type *ALL F4 for list

Type options, press Enter.
 2=Change 5=Display

Option	Value	Type	Description
-	QTSEPOOL	*STG	Time slice end pool
-	QUPSDLYTIM	*SYSCTL	Uninterruptible power supply delay time
-	QUPSMMSGQ	*SYSCTL	Uninterruptible power supply message queue
-	QUSEADPAUT	*SEC	Use adopted authority
-	QUSRLIBL	*LIBL	User part of the library list
-	QUTCOFFSET	*DATTIM	Coordinated universal time offset
-	QVFYOBJRST	*SEC	Verify object on restore
-	QYEAR	*DATTIM	Year

Bottom

F3=Exit F4=Prompt F5=Refresh F11=Display names only F12=Cancel

System value QVFYOBJRST changed from 3 to 1.

MA*	A	17/004									
PF1	PF2	PF3	PF4	PF5	PF6	Enter	PA1	Attn	Insert	Backt...	NewLi...
PF7	PF8	PF9	PF10	PF11	PF12	Clear	PA2	SysReq	Delete	FldExit	Next...

30. Press F3 twice to return to the Define or Change the System at IPL screen

31. Select 4 for Network attributes commands

Define or Change the System at IPL

System: IBMIP9A

Select one of the following:

- 1. Configuration commands
- 2. Change user profile
- 3. System value commands
- 4. Network attribute commands
- 5. General object commands
- 6. Work with shared pools
- 7. Change IPL attributes

Selection

4

F3=Exit and continue IPL

MA*	A	21/007									
PF1	PF2	PF3	PF4	PF5	PF6	Enter	PA1	Attn	Insert	Backt...	NewLi...
PF7	PF8	PF9	PF10	PF11	PF12	Clear	PA2	SysReq	Delete	FldExit	Next...

32. Select 2 to Change network attributes

```

Network Attribute Commands
System: IBMIP9A
Select one of the following:
1. Display network attribute
2. Change network attribute

Selection
2

F3=Exit F12=Cancel
(CC) COPYRIGHT IBM CORP. 1980, 2018.

MA* A 21/007
PF1 PF2 PF3 PF4 PF5 PF6 Enter PA1 Attn Insert Backt... NewLi...
PF7 PF8 PF9 PF10 PF11 PF12 Clear PA2 SysReq Delete FldExit Next...

```

33. Set the Local control point name and Default local location to match your configuration

```

Change Network Attributes (CHNETA)

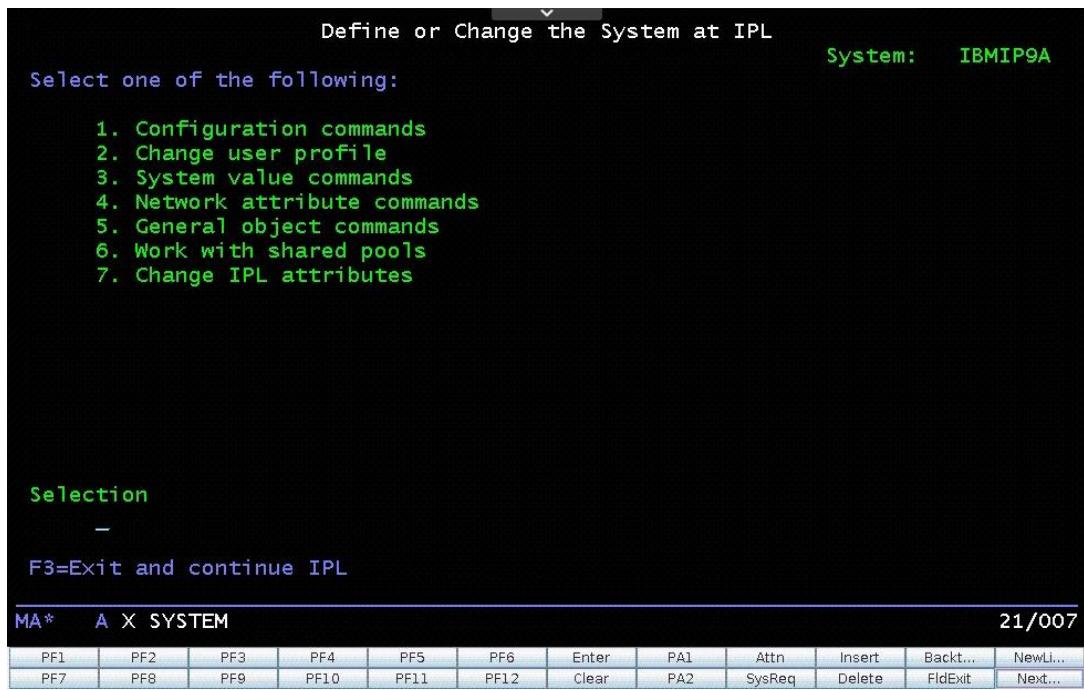
Type choices, press Enter.

System name . . . . . *SAME Name, *SAME
Local network ID . . . . . *SAME Name, *SAME
Local control point name . . . U209746W Name, *SAME
Default local location name . . U209746W Name, *SAME
Default mode . . . . . *SAME Name, *SAME
Node type . . . . . *SAME *SAME, *ENDNODE, *NETNODE...
Data compression . . . . . *SAME 1-2147483647, *SAME, *NONE...
Intermediate data compression . . *SAME 1-2147483647, *SAME, *NONE...
Maximum intermediate sessions . . *SAME 0-9999, *SAME
Route addition resistance . . . *SAME 0-255, *SAME
Network node servers:
  Server network ID . . . . . *SAME Name, *SAME, *NONE, *LCLNETID
  Control point name . . . . . + for more values Name, *ANY
Alert status . . . . . . *SAME *SAME, *ON, *OFF, *UNATTEND
Alert logging status . . . . . *SAME *SAME, *NONE, *LOCAL, *RCV...
More...
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

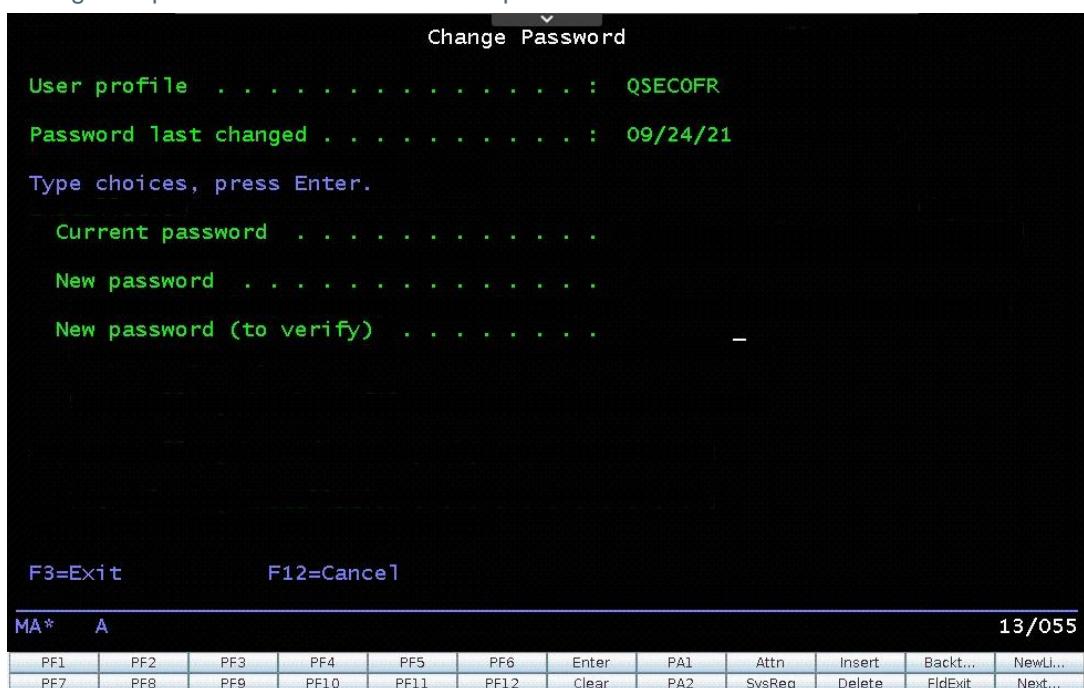
MA* A 09/037
PF1 PF2 PF3 PF4 PF5 PF6 Enter PA1 Attn Insert Backt... NewLi...
PF7 PF8 PF9 PF10 PF11 PF12 Clear PA2 SysReq Delete FldExit Next...

```

34. A message appears indicating the network attributes have changes. Press F12 and then F3. To continue the IPL



35. Wait for the Sign On information screen to appear.
 36. Change the password for QSECOFR and press enter

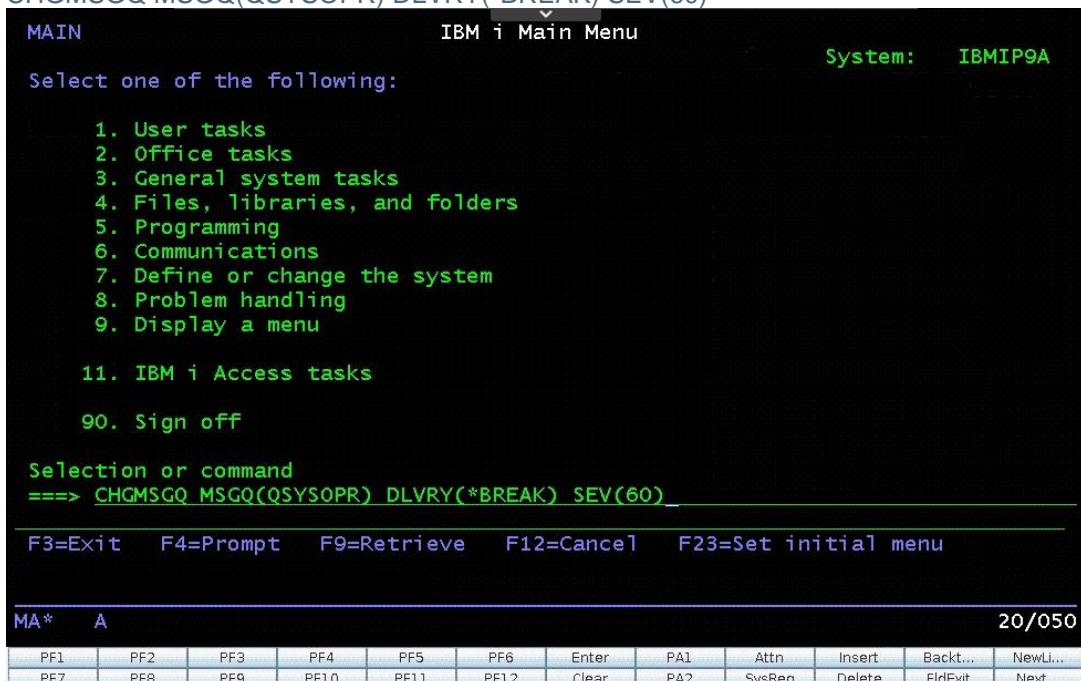


37. The basic OS is restored

Recover System Data and Commvault Libraries from the DR Backup

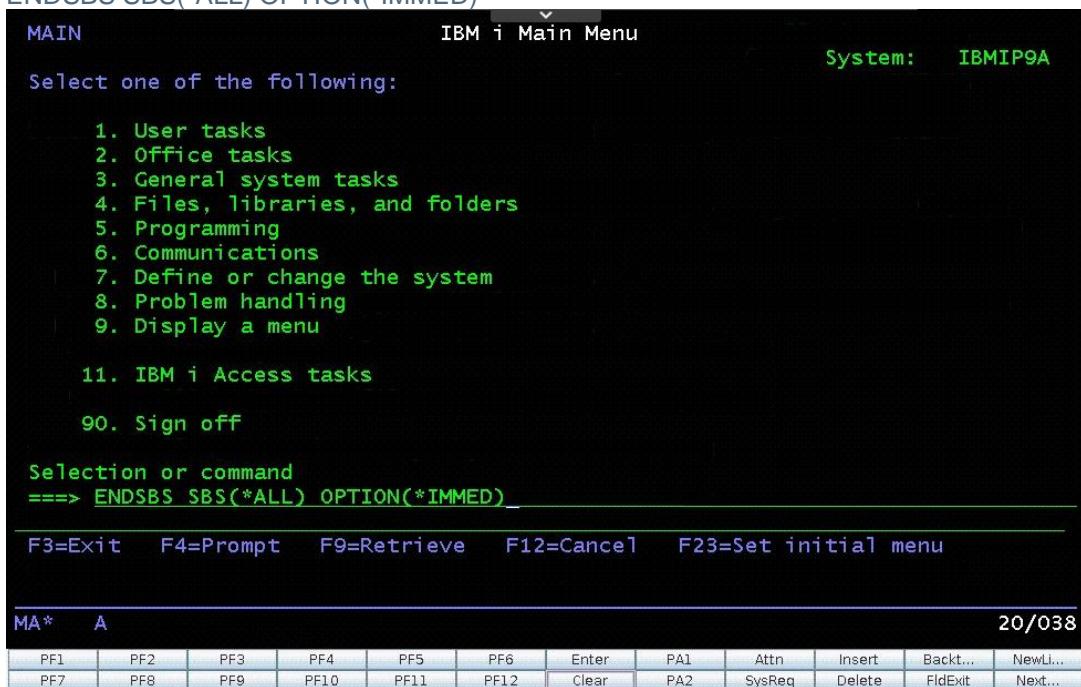
1. Clear the system messages.

- On the command line, type the following command, and then press Enter.
`CHGMSGQ MSGQ(QSYSOPR) DLVRY(*BREAK) SEV(60)`



MAIN IBM i Main Menu System: IBMIP9A
Select one of the following:
1. User tasks
2. Office tasks
3. General system tasks
4. Files, libraries, and folders
5. Programming
6. Communications
7. Define or change the system
8. Problem handling
9. Display a menu
11. IBM i Access tasks
90. Sign off
Selection or command
====> `CHGMSGQ MSGQ(QSYSOPR) DLVRY(*BREAK) SEV(60)`
F3=Exit F4=Prompt F9=Retrieve F12=Cancel F23=Set initial menu
MA* A 20/050
PF1 PF2 PF3 PF4 PF5 PF6 Enter PA1 Attn Insert Backt... NewLi...
PF7 PF8 PF9 PF10 PF11 PF12 Clear PA2 SysReq Delete FldExit Next...

- On the command line, type the following command, and then press Enter.
`ENDSBS SBS(*ALL) OPTION(*IMMED)`



MAIN IBM i Main Menu System: IBMIP9A
Select one of the following:
1. User tasks
2. Office tasks
3. General system tasks
4. Files, libraries, and folders
5. Programming
6. Communications
7. Define or change the system
8. Problem handling
9. Display a menu
11. IBM i Access tasks
90. Sign off
Selection or command
====> `ENDSBS SBS(*ALL) OPTION(*IMMED)`
F3=Exit F4=Prompt F9=Retrieve F12=Cancel F23=Set initial menu
MA* A 20/038
PF1 PF2 PF3 PF4 PF5 PF6 Enter PA1 Attn Insert Backt... NewLi...
PF7 PF8 PF9 PF10 PF11 PF12 Clear PA2 SysReq Delete FldExit Next...

- c. After the message appears that states the system is in a restricted state, press Enter.

```

Display Messages
System: IBMIP9A
Queue . . . . : QSYSOPR Program . . . . : *DSPMSG
Library . . . . : QSYS Library . . . . :
Severity . . . . : 60 Delivery . . . . : *BREAK

Type reply (if required), press Enter.
- ENDSBS SBS(*ALL) command being processed.
- System ended to restricted condition.

Bottom
F3=Exit F11=Remove a message F12=Cancel
F13=Remove all F16=Remove all except unanswered F24=More keys

```

MA*	A	08/001									
PF1	PF2	PF3	PF4	PF5	PF6	Enter	PA1	Attn	Insert	Backt...	NewLi...
PF7	PF8	PF9	PF10	PF11	PF12	Clear	PA2	SysReq	Delete	FldExit	Next...

2. Verify that the DVD image is loaded in the optical drive. On the command line, type the following command, substituting OPTXX with the optical device name.

CHKOPTVOL VOL(*MOUNTED) DEV(OPTXX)

```

MAIN IBM i Main Menu System: IBMIP9A
Select one of the following:
1. User tasks
2. Office tasks
3. General system tasks
4. Files, Libraries, and folders
5. Programming
6. Communications
7. Define or change the system
8. Problem handling
9. Display a menu

11. IBM i Access tasks

90. Sign off

Selection or command
====> CHKOPTVOL VOL(*MOUNTED) DEV(OPT06)

F3=Exit F4=Prompt F9=Retrieve F12=Cancel F23=Set initial menu

Operation in progress, please wait.

```

MA*	A X SYSTEM	20/007									
PF13	PF14	PF15	PF16	PF17	PF18	Enter	Rule	EndFld	ErInp	Reset	DUP ...
PF19	PF20	PF21	PF22	PF23	PF24	Clear	AltCur	ErFld	ErEOF	Next...	

Operation in progress message will display, followed by a progress percentage, then a completion message

3. Restore the CVLIB. On the command line, type the following command, substituting OPTXX with the optical device name.

RSTLIB SAVLIB(CVLIB CVLIBOBJ) DEV(OPTXX)

MAIN		IBM i Main Menu										System: IBMIP9A		
Select one of the following:														
1. User tasks 2. Office tasks 3. General system tasks 4. Files, libraries, and folders 5. Programming 6. Communications 7. Define or change the system 8. Problem handling 9. Display a menu 11. IBM i Access tasks 90. Sign off														
Selection or command														
====> RSTLIB SAVLIB(CVLIB CVLIBOBJ) DEV(OPT06)														
F3=Exit F4=Prompt F9=Retrieve F12=Cancel F23=Set initial menu														
Check Optical Volume completed. 0 damaged files were found.														
MA*	A	20/047												
PF13	PF14	PF15	PF16	PF17	PF18	Enter	Rule	EndFld	ErInp	Reset	DUP ...			
PF19	PF20	PF21	PF22	PF23	PF24	Clear	AltCur	ErFld	ErEOF	Next...				

There will be some file not found warnings press page down until at the end of the output to confirm the completion of the restore.

4. Restore the system backup data. On the command line, type the following command, substituting OPTXX with the optical device name.

CVLIB/CVSYSRST DEV(OPTXX) VOL(*MOUNTED)

MAIN		IBM i Main Menu										System: IBMIP9A		
Select one of the following:														
1. User tasks 2. Office tasks 3. General system tasks 4. Files, libraries, and folders 5. Programming 6. Communications 7. Define or change the system 8. Problem handling 9. Display a menu 11. IBM i Access tasks 90. Sign off														
Selection or command														
====> CVLIB/CVSYSRST DEV(OPT06) VOL(*MOUNTED)														
F3=Exit F4=Prompt F9=Retrieve F12=Cancel F23=Set initial menu														
MA*	A	20/046												
PF13	PF14	PF15	PF16	PF17	PF18	Enter	Rule	EndFld	ErInp	Reset	DUP ...			
PF19	PF20	PF21	PF22	PF23	PF24	Clear	AltCur	ErFld	ErEOF	Next...				

5. On the command line, type YES, and then at the next dialog box prompt, press Enter.

Display Messages

Queue : QSYSOPR	System: IBMIP9A
Library : QSYS	Program : *DSPMSG
Severity : 90	Library :
	Delivery : *BREAK

Type reply (if required), press Enter.

System data Restore is about to start. Make sure you are already in restricted state. Please load the next volume to the device. Reply 'YES' to proceed with the restore or Reply 'NO' to cancel the restore process.

Reply . . . YES

Bottom

F3=Exit F11=Remove a message F12=Cancel
F13=Remove all F16=Remove all except unanswered F24=More keys

MA* A 11/023

PF13	PF14	PF15	PF16	PF17	PF18	Enter	Rule	EndFld	ErInp	Reset	DUP ...
PF19	PF20	PF21	PF22	PF23	PF24	Clear	AltCur	FrFlld	FrEOF	Nxt	

This will return to the main menu, recheck the DVD, then perform the restore, progress messages show in the status bar.

```
          Status bar

MAIN                               IBM i Main Menu
                                         System: IBMIP9A

Select one of the following:

  1. User tasks
  2. Office tasks
  3. General system tasks
  4. Files, libraries, and folders
  5. Programming
  6. Communications
  7. Define or change the system
  8. Problem handling
  9. Display a menu

  11. IBM i Access tasks

  90. Sign off

Selection or command
==> CVLIB/CVSYSRST DEV(OPT06) VOL(*MOUNTED)

F3=Exit   F4=Prompt   F9=Retrieve   F12=Cancel   F23=Set initial menu

12 of 89 libraries processed. 1100 objects restored to QBRM.

MA* A X SYSTEM
                                         20/00

PF13 PF14 PF15 PF16 PF17 PF18 Enter Rule EndId Errng Reset Dup ...

```

MAIN IBM i Main Menu System: IBMIP9A

Select one of the following:

1. User tasks
2. Office tasks
3. General system tasks
4. Files, libraries, and folders
5. Programming
6. Communications
7. Define or change the system
8. Problem handling
9. Display a menu

11. IBM i Access tasks

90. Sign off

Selection or command
==== CVLIB/CVSYRST DEV(OPT06) VOL(*MOUNTED)

F3=Exit F4=Prompt F9=Retrieve F12=Cancel F23=Set initial menu

Started processing 53007 objects, completed 51500 objects.

MA A X SYSTEM 20/007

PF13	PF14	PF15	PF16	PF17	PF18	Enter	Rule	EndId	Endp	Reset	DUP...
------	------	------	------	------	------	-------	------	-------	------	-------	--------

6. Once the restore is complete, type OK and press Enter.

```

Display Messages
System: IBMIP9A
Queue . . . . : QSYSOPR Program . . . . : *DSPMSG
Library . . . . : QSYS Library . . . . :
Severity . . . . : 90 Delivery . . . . : *BREAK

Type reply (if required), press Enter.
Restore is completed from Optical device. You can proceed with Network
configuration and start the TCP servers to restore the remaining data
from Commvault backup
Reply . . . OK

Bottom
F3=Exit F11=Remove a message F12=Cancel
F13=Remove all F16=Remove all except unanswered F24=More keys

```

MA*	A	11/022									
PF13	PF14	PF15	PF16	PF17	PF18	Enter	Rule	EndFld	ErInp	Reset	DUP ...
PF19	PF20	PF21	PF22	PF23	PF24	Clear	AltCur	ErFld	ErEOF	Next...	

7. Have an IBM i admin configure the TCP/IP configuration from the command line.

8. Perform the initial program load (IPL). On the command line, type the following command:
PWRDWNNSYS OPTION(*IMMED) RESTART(*YES)

```

TCPADM TCP/IP Administration System: IBMIP9A
Select one of the following:
1. Configure TCP/IP
2. Configure TCP/IP applications
3. Start TCP/IP
4. End TCP/IP
5. Start TCP/IP servers
6. End TCP/IP servers
7. Work with TCP/IP network status
8. Verify TCP/IP connection
9. Start TCP/IP FTP session
10. Start TCP/IP TELNET session
11. Send TCP/IP spooled file
20. Work with TCP/IP jobs in QSYSWRK subsystem

Selection or command
====> PWRDWNNSYS OPTION(*IMMED) RESTART(*YES)

F3=Exit F4=Prompt F9=Retrieve F12=Cancel

MA* A 21/045

```

PF13	PF14	PF15	PF16	PF17	PF18	Enter	Rule	EndFld	ErInp	Reset	DUP ...
PF19	PF20	PF21	PF22	PF23	PF24	Clear	AltCur	ErFld	ErEOF	Next...	

9. Press F16 to confirm (accessible by clicking the Next button at the bottom of the terminal)

```

-                                         Confirm Power Down of System
System . . . . . : IBMIP9A

To confirm power down, press F16.
To cancel, press F12.

Bottom
F12=Cancel F16=Confirm

```

MA*	A	01/001									
PF13	PF14	PF15	PF16	PF17	PF18	Enter	Rule	EndFld	ErInp	Reset	DUP ...
PF19	PF20	PF21	PF22	PF23	PF24	Clear	AltCur	ErFld	ErEOF	Next...	

10. Select Option 1 and then perform the IPL following IBM documentation

```

IPL or Install the System                                         System: IBMIP9A
Select one of the following:
1. Perform an IPL
2. Install the operating system
3. Use Dedicated Service Tools (DST)
4. Perform automatic installation of the operating system
5. Save Licensed Internal Code

Selection
1

Licensed Internal Code - Property of IBM 5770-999 Licensed
Internal Code (c) Copyright IBM Corp. 1980, 2018. All
rights reserved. US Government Users Restricted Rights -
Use duplication or disclosure restricted by GSA ADP schedule
Contract with IBM Corp.


```

MA*	A	16/007									
PF1	PF2	PF3	PF4	PF5	PF6	Enter	PA1	Attn	Insert	Backt...	NewLi...
PF7	PF8	PF9	PF10	PF11	PF12	Clear	PA2	SysReq	Delete	FldExit	Next...

11. After the IPL is complete power down the system
 PWRDWNSYS OPTION(*IMMED) RESTART(*NO)

```

MAIN                               IBM i Main Menu
System:    IBMIP9A

Select one of the following:

  1. User tasks
  2. Office tasks
  3. General system tasks
  4. Files, libraries, and folders
  5. Programming
  6. Communications
  7. Define or change the system
  8. Problem handling
  9. Display a menu
 10. Information Assistant options
 11. IBM i Access tasks

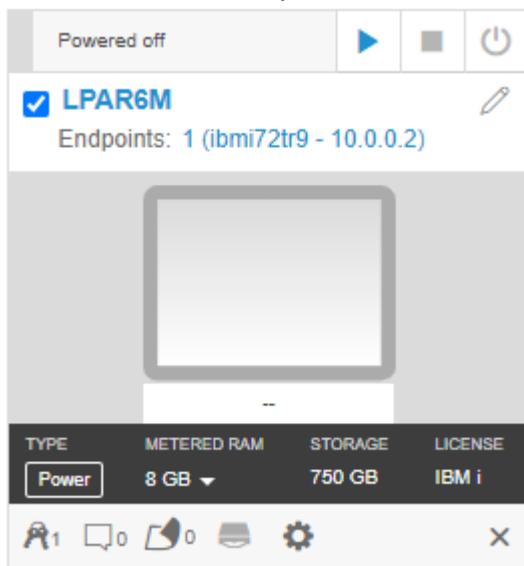
 90. Sign off

Selection or command
====> PWRDWNNSYS OPTION(*IMMED) RESTART(*NO)

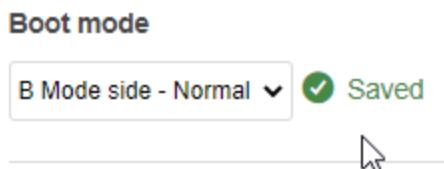
F3=Exit   F4=Prompt   F9=Retrieve   F12=Cancel   F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 2018.
MA* A                                         20/044
PF1 PF2 PF3 PF4 PF5 PF6 Enter PA1 Attn Insert Backt... NewLi...
PF7 PF8 PF9 PF10 PF11 PF12 Clear PA2 SysReq Delete FldExit Next...

```

12. Once the VM shows as powered off select the settings cog



13. Change the Boot mode to B Mode side - Normal



14. Power on the VM

15. Wait for the VM to boot and become operational.

Resume the 1-Touch Restore job

1. Click Jobs > press Actions on the IBM i DR Recovery job > Resume



2. This will trigger the restore jobs for the other subclients in order
3. Once the workflow has restored all the subclients, have an IBM admin IPL the system, and the migration is then complete.

Result

The migration process is now complete, you should have a replica of the on-prem IBM i running in Skytap.