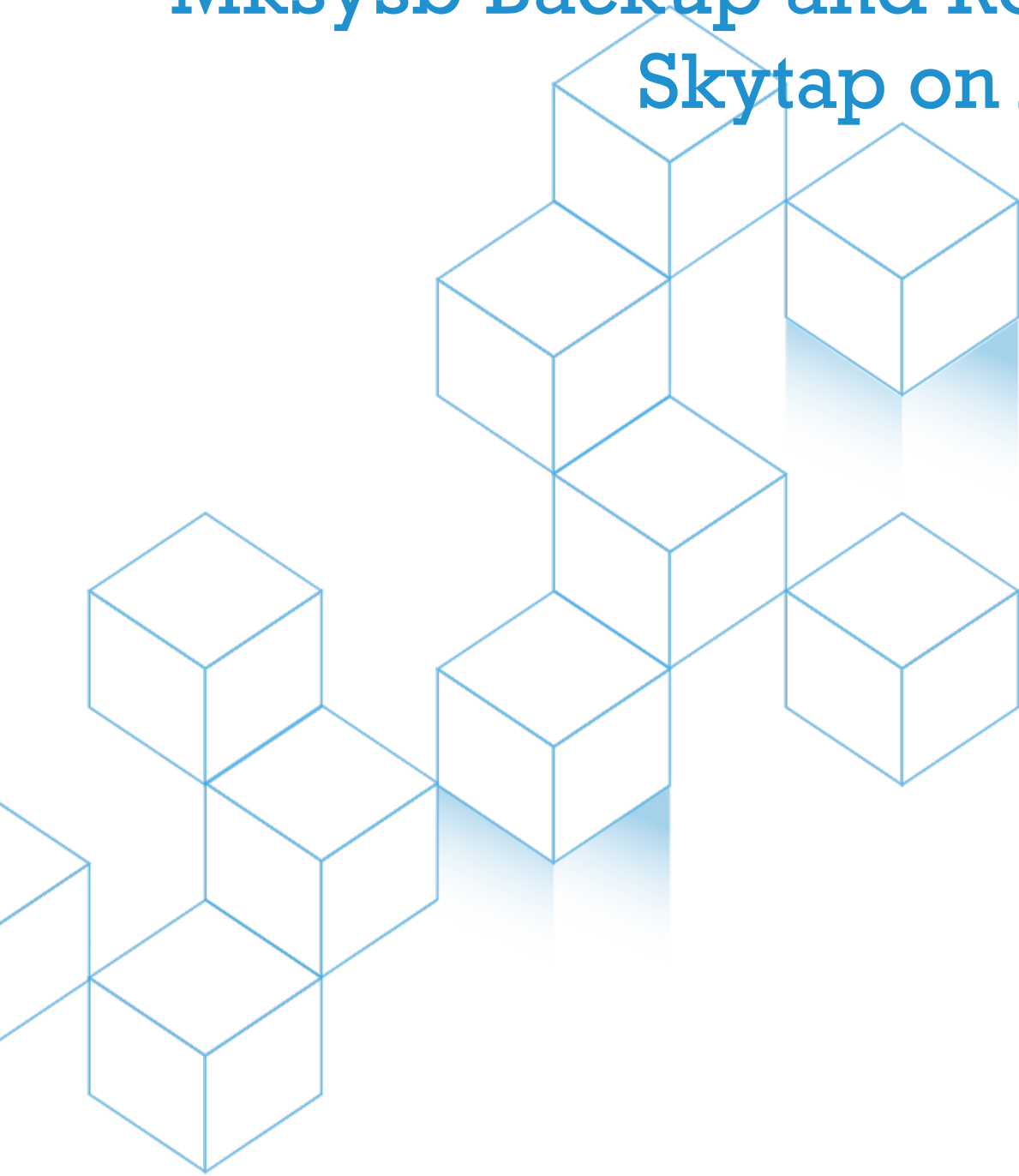


Mksysb Backup and Restore Skytap on Azure



Mksysb Backup and Restore in Skytap

1) Backing up on-prem system using mksysb

a. Prechecks –

- Error logs for any OS level issues
- Check Software inconsistencies using # lppchk -v
- Resolve any operating system level issue to take a healthy system Backup
- Enough free space to backup all files in a filesystem

b. Backup execution

- Populate the /tmp/exclude.rootvg file for excluding the filesystems from the backup
- Use command # mksysb -ipX /<FS>/<hostname>.mksysb

```
# mksysb -ipX /backup/myhost.mksysb
Creating information file (/image.data) for rootvg.
Creating list of files to back up
Backing up 78998 files.....
78998 of 78998 files backed up (100%)
0512-038 mksysb: Backup Completed Successfully.
```

- It may take some time to complete the backup
- Verify content of mksysb using # lsmksysb -lf /<FS>/<hostname>.mksysb

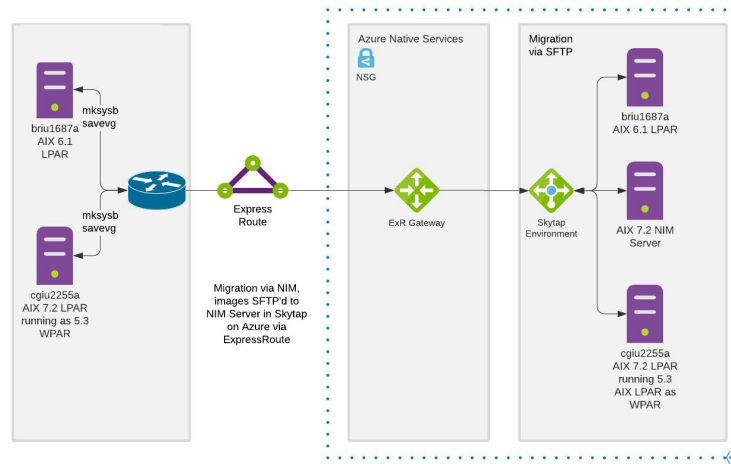
```
# lsmksysb -lf /backup/myhost.mksysb
VOLUME GROUP:      rootvg
BACKUP DATE/TIME:  Thu Dec 16 00:38:18 UTC 2021
UNAME INFO:        AIX sapaix 2 7 00C97B604B00
BACKUP OSLEVEL:    7.2.3.15
MAINTENANCE LEVEL: 7200-03
SERVICEPACK LEVEL: 7200-03-02-1846
BACKUP SIZE (MB):  28448
SHRINK SIZE (MB):  8483
VG DATA ONLY:     no

rootvg:
LV NAME      TYPE   LPs   PPs   PVs  LV STATE  MOUNT POINT
hd5          boot   1     1     1    closed/syncd  N/A
hd6          paging 16    16    1    open/syncd   N/A
hd8          jfs2log 1     1     1    open/syncd   N/A
hd4          jfs2    168   168   1    open/syncd   /
hd2          jfs2    160   160   1    open/syncd   /usr
hd9var       jfs2    6      6     1    open/syncd   /var
hd3          jfs2    320   320   1    open/syncd   /tmp
hd1          jfs2    160   160   1    open/syncd   /home
hd10opt      jfs2    13    13    1    open/syncd   /opt
```

2) Transferring Mksysb to Skytap

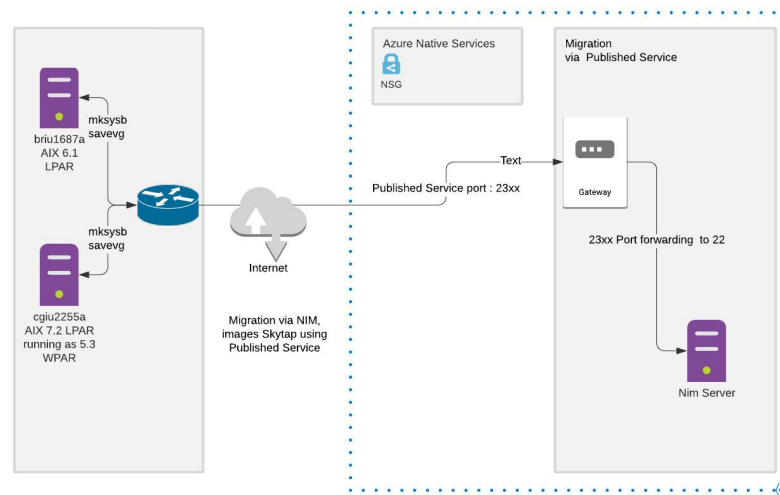
a. Option 1 (Direct Connectivity)

- VPN or ExpressRoute
- Network planning is required ahead of time
- Secured and Fast data transfer
- Future Proof



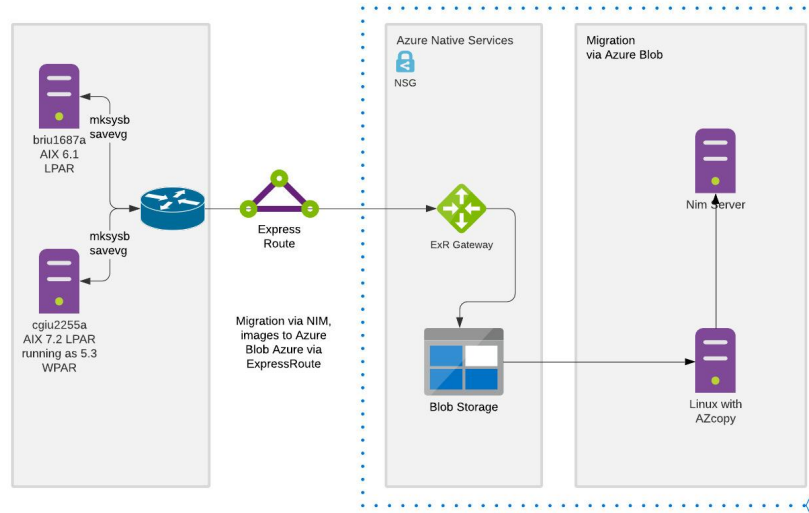
b. Option 2 (Published Service)

- Fastest and cheapest to deploy
- Native Skytap support
- Only Nim server in Skytap is required to started data transfer
- Encrypted Data Transfer over public Internet
- Only recommended for POC



c. Option 3 (Azure Blob)

- Azure Blob Storage
- Secured and Fast data transfer
- Additional VM for AZ copy required
- Future Proof
- Data can be copied over even before Skytap service is Started



3) Restore In Skytap

a. Initiate a NIM server in Skytap

- Deploy a new AIX template using public templates (Latest AIX level Recommended)

Create a new environment 4 → [Create environment](#)

Select a template below to create a new environment.

My Company **Skytap** All Sort by date created ↓

← 2

> Owner: Skytap

> Region: CAN-Toronto 3 → clear

> Status

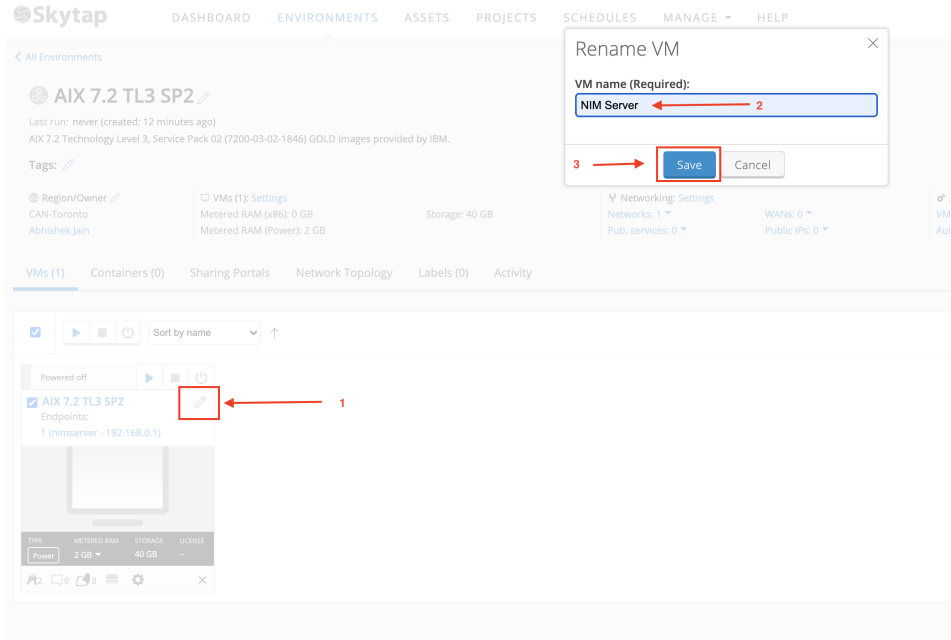
> Date created

> Date last deployed

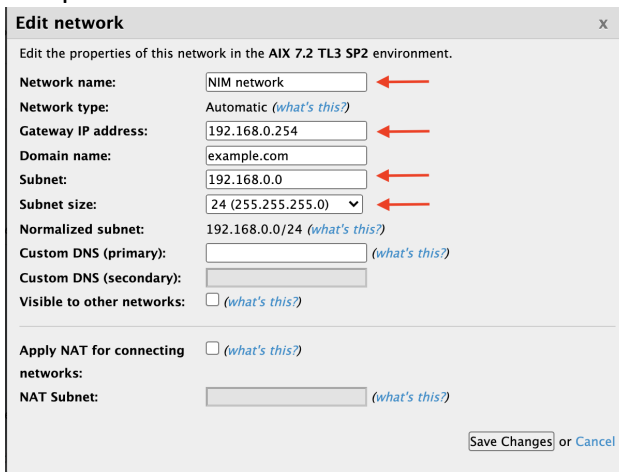
> Attributes

<input type="radio"/>		AIX 7.1 TLS SP3	Last deployed: an hour ago (created: 2 years ago) Owner: Skytap Region: CAN-Toronto Storage: 40 GB Metered RAM: 2 GB Networks: 1 Container hosts: No Labels: 0 Attached Licenses: N/A	1 V			
<input checked="" type="radio"/>		AIX 7.2 TL3 SP2	Last deployed: 19 days ago (created: 2 years ago) Owner: Skytap Region: CAN-Toronto Storage: 40 GB Metered RAM: 2 GB Networks: 1 Container hosts: No Labels: 0 Attached Licenses: N/A	1 V			
<input checked="" type="checkbox"/>	VM	Status	Type	Storage	Metered RAM	Licenses	Endpoints
<input checked="" type="checkbox"/>		AIX 7.2 TL3 SP2	Powered off	Power	40 GB	2 GB	▼
<input type="radio"/>		AIX NIM Master with SPOTs	Last deployed: 21 days ago (created: 2 years ago) Owner: Skytap Region: CAN-Toronto Storage: 60 GB Metered RAM: 2 GB Networks: 1 Container hosts: No Labels: 0 Attached Licenses: N/A	1 V			

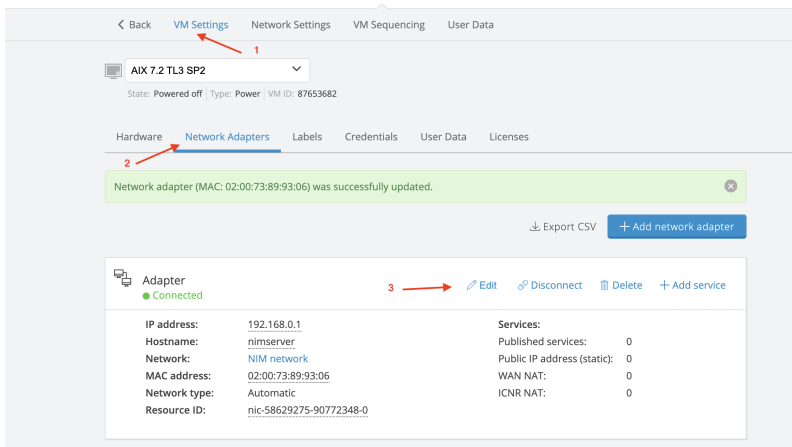
- Rename the Lpar to NIM server

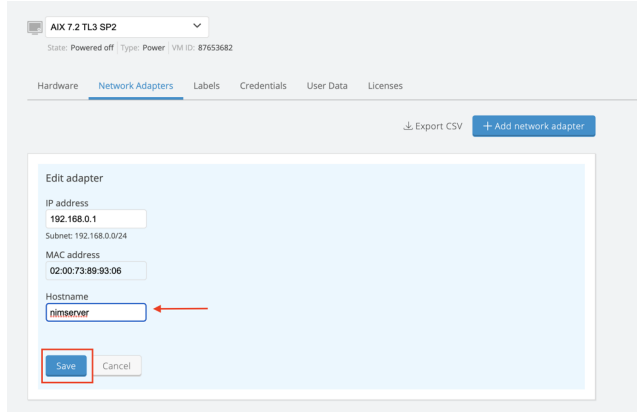


- Setup the Desired Network and attach the network to the Lpar

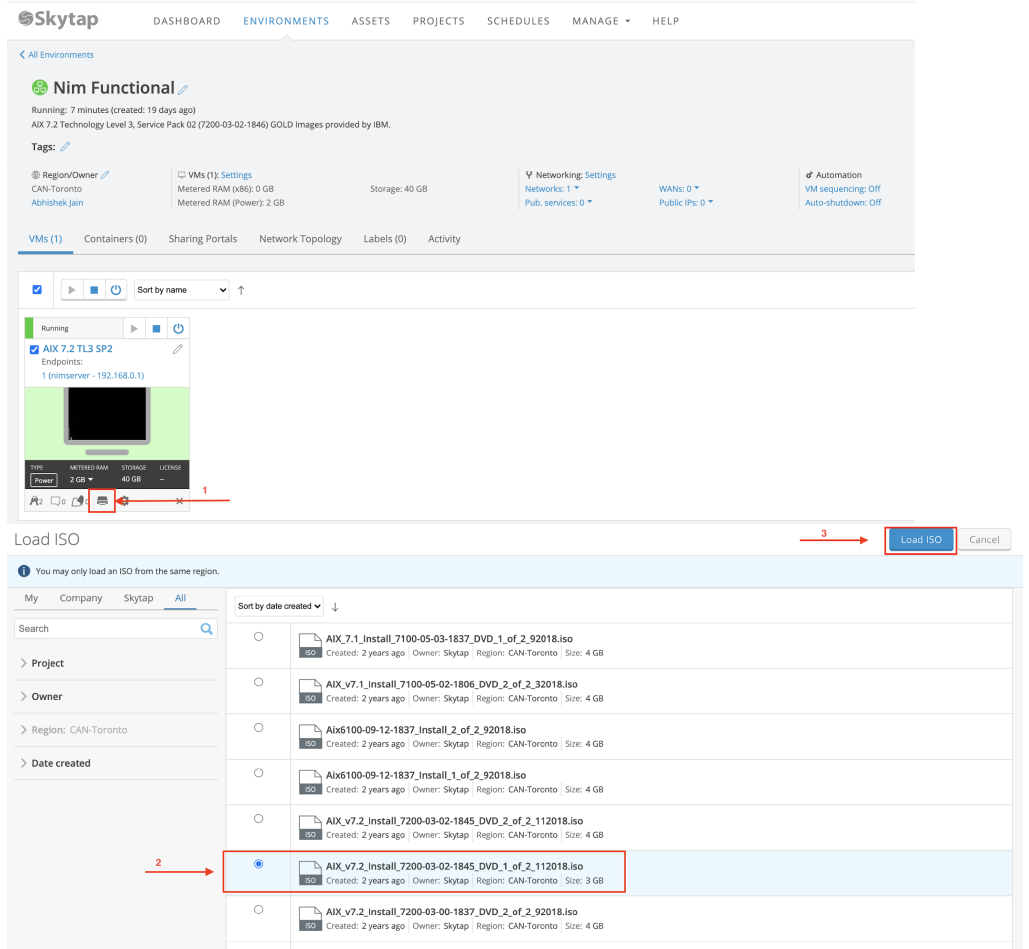


- Set the desired hostname in Adapter setting





- Power on the Lpar and logon with root access
- b. Configure NIM Server
 - Check if required file sets are Installed # `lspp -l | grep -i nim`
 - Attach Install ISO image to the server



- Run `#cfgmgr` in OS to configure CDROM

- List CDROM to confirm # lsdev -Cc cdrom

```
#
#
#
# cfmgr
#
#
# lsdev -Cc cdrom
cd0 Available Virtual SCSI Optical Served by VIO Server
```

- Install file sets from CDROM # smitty install_latest

1. Select CDROM using F4 or esc+4 keys
2. Search for NIM in software to install
3. Select NIM master using F7 or esc+7 keys

```
Install Software
Type or select values in entry fields.
Press Enter AFTER making all desired changes.

[TOP]                                     [Entry Fields]
* INPUT device / directory for software   /dev/cd0
* SOFTWARE to install                     + 7.2.3.15 Network I> +
PREVIEW only? (install operation will NOT occur) no +
COMMIT software updates?                  yes +
SAVE replaced files?                     no +
AUTOMATICALLY install requisite software? yes +
EXTEND file systems if space needed?      yes +
OVERWRITE same or newer versions?        no +
VERIFY install and check file sizes?     no +
Include corresponding LANGUAGE filesets? yes +
DETAILED output?                          no +
Process multiple volumes?                yes +
ACCEPT new license agreements?            yes +
[MORE...11]

F1=Help      F2=Refresh      F3=Cancel      F4=List
Esc+5=Reset  F6=Command     F7=Edit       F8=Image
F9=Shell     F10=Exit       Enter=Do
```

4. Continue installation

```

Ty
Pr
                                SOFTWARE to install
[T] Move cursor to desired item and press F7. Use arrow keys to scroll.
*   ONE OR MORE items can be selected.
*   Press Enter AFTER making all selections.

[MORE...583]

bos.sysmgt                                ALL
 @ 7.2.2.0  Filesystem Quota Commands
 @ 7.2.3.15  HMC Client Runtime
 @ 7.2.3.15  License Management
 > + 7.2.3.15  Network Install Manager - Master Tools
 > + 7.2.3.0  Network Install Manager - SPOT
 @ 7.2.3.15  PowerVC Client Runtime
[MORE...1464]

[M]
F1 F1=Help                F2=F2=Refresh          F3=F3=Cancel
F7 F7=Select             F8=F8=Image           F10=F10=Exit
Es Enter=Do              /=/=Find               n=n=Find Next
F9

                                COMMAND STATUS

Command: OK                stdout: yes            stderr: no

Before command completion, additional instructions may appear below.

[TOP]
geninstall -I "a -cgNQwXY -J" -Z -d /dev/cd0 -f File 2>&1

File:
I: bos.sysmgt.nim.master      7.2.3.15
I: bos.sysmgt.nim.spot       7.2.3.0

+-----+
+-----+
+-----+
+-----+
+-----+
+-----+
Pre-installation Verification...
+-----+
+-----+
Verifying selections...done
Verifying requisites...Verifying requisites...done
[MORE...65]

F1=F1=Help                F2=F2=Refresh          F3=F3=Cancel          F6=F6=Command
F8=F8=Image              F9=F9=Shell           F10=F10=Exit         /=/=Find
n=n=Find Next

```

- Exit installation menu using F10 or esc+0
- Confirm Installation is done # lsipp -l | grep -i nim

```

#
#
# lsipp -l | grep -i nim
bos.sysmgt.nim.client      7.2.3.16  COMMITTED  Network Install Manager -
bos.sysmgt.nim.master      7.2.3.15  COMMITTED  Network Install Manager -
bos.sysmgt.nim.spot        7.2.3.0   COMMITTED  Network Install Manager - SPOT
bos.sysmgt.nim.client      7.2.3.16  COMMITTED  Network Install Manager -
#

```


- Set Hostname and /etc/hosts to exact name as step 3b

```
#
# hostname
nimservr ←
#
# tail /etc/hosts
# line are not interpreted by routines which search this file. Blank
# lines are allowed.

# Internet Address      Hostname      # Comments
# 192.9.200.1           net0sample    # ethernet name/address
# 128.100.0.1           token0sample  # token ring name/address
# 10.2.0.2              x25sample     # x.25 name/address
# 2000:1:1:1:209:6bff:feee:2b7f  ipv6sample    # ipv6 name/address
127.0.0.1              loopback localhost # loopback (lo0) name/address
192.168.0.1           nimservr     ←
#
```

- Run NIM configuration # smitty nim_config_env

```
Configure a Basic NIM Environment (Easy Startup)

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

[TOP]                                     [Entry Fields]
Initialize the NIM Master:
* Primary Network Interface for the NIM Master  [en0] ← +
Basic Installation Resources:
* Input device for installation images          [cd0] ← +
* LPP_SOURCE Name                               [lpp_source1] +
* LPP_SOURCE Directory                          [/export/lpp_source] +
  Create new filesystem for LPP_SOURCE?        [yes] +
  Filesystem SIZE (MB)                         [650] #
  VOLUME GROUP for new filesystem              [rootvg] +
* SPOT Name                                     [spot1] +
* SPOT Directory                               [/export/spot] +
  Create new filesystem for SPOT?              [yes] +
[MORE...26]

F1=Help      F2=Refresh      F3=Cancel      F4=List
Esc+5=Reset  F6=Command      F7=Edit        F8=Image
F9=Shell     F10=Exit        Enter=Do
```

- Press enter to start- this step will take ~30 mins to complete

```
COMMAND STATUS

Command: OK          stdout: yes          stderr: no

Before command completion, additional instructions may appear below.

[TOP]
>>>> Initializing the NIM Master.
0513-071 The nimesis Subsystem has been added.
0513-071 The nimd Subsystem has been added.
0513-059 The nimesis Subsystem has been started. Subsystem PID is 5964144.

>>>> Checking available space for the new filesystems

1000 MB required on rootvg. 22496 MB available.

>>>> Creating the /export/lpp_source filesystem in the rootvg volume
group on the master machine.
[MORE...8957]

F1=Help      F2=Refresh      F3=Cancel      F6=Command
F8=Image     F9=Shell        F10=Exit       /=Find
n=Find Next
```

- Congratulations NIM Server is Ready !!!!

4) Setup Client on NIM server to restore Mksysb

- a. Update the /etc/hosts file with the client hostname

```
# tail /etc/hosts
# lines are allowed.

# Internet Address      Hostname      # Comments
# 192.9.200.1          net0sample   # ethernet name/address
# 128.100.0.1         token0sample # token ring name/address
# 10.2.0.2            x25sample    # x.25 name/address
# 2000:1:1:1:209:6bff:feee:2b7f  ipv6sample   # ipv6 name/address
127.0.0.1             loopback localhost # loopback (lo0) name/address
192.168.0.1          nimserver
192.168.0.2          nimclient ←
#
```

- b. Verify hostname is resolved

```
#
# host 192.168.0.2
nimclient is 192.168.0.2
#
# host nimclient
nimclient is 192.168.0.2
#
```

- c. Add the Client in NIM config # smitty nim_mkmac and enter the client hostname

```
Define a machine
Type or select a value for the entry field.
Press Enter AFTER making all desired changes.

* Host Name of Machine [nimclient] ←
  (Primary Network Install Interface)

F1=Help      F2=Refresh   F3=Cancel    F4=List
Esc+5=Reset  F6=Command   F7=Edit      F8=Image
F9=Shell     F10=Exit     Enter=Do
```

- d. Change the setting as below and press enter

```

Define a machine
Type or select values in entry fields.
Press Enter AFTER making all desired changes.

[TOP]
* NIM Machine Name [Entry Fields] [nimclient]
* Machine Type [standalone] +
* Hardware Platform Type [chrp] +
Kernel to use for Network Boot [64] +
Communication Protocol used by client [] +
Primary Network Install Interface
* Cable Type tp ← +
Network Speed Setting [] +
Network Duplex Setting [] +
* NIM Network network1
* Host Name nimclient
Network Adapter Hardware Address [0]
Network Adapter Logical Device Name []
[MORE...15]

F1=Help F2=Refresh F3=Cancel F4=List
Esc+5=Reset F6=Command F7=Edit F8=Image
F9=Shell F10=Exit Enter=Do

COMMAND STATUS
Command: OK stdout: no stderr: no
Before command completion, additional instructions may appear below.

F1=Help F2=Refresh F3=Cancel F6=Command
F8=Image F9=Shell F10=Exit /=Find
n=Find Next

```

- e. NIM Client is defined and can be verified in # lsnim nimclient

```

#
# lsnim nimclient
nimclient machines standalone
#

```

- f. Copy the Source Mksysb in a new filesystem /export/mksysb

- Create the filesystem # crfs -v jfs2 -m /export/mksysb -A yes -a size=10G -r rootvg

```

# crfs -v jfs2 -m /export/mksysb -A yes -a size=10G -g rootvg
File system created successfully.
10485236 kilobytes total disk space.
New File System size is 20971520
#

```

- List the mksysb file content `lsmksysb -lf <filename>`

```

bash-4.3# lsmksysb -lf myhost.mksysb
VOLUME GROUP:      rootvg
BACKUP DATE/TIME:  Thu Dec 16 00:38:18 UTC 2021
UNAME INFO:        AIX sapaix 2 7 00C97B604B00
BACKUP OSLEVEL:    7.2.3.15
MAINTENANCE LEVEL: 7200-03
SERVICEPACK LEVEL: 7200-03-02-1846
BACKUP SIZE (MB):  28448
SHRINK SIZE (MB):  8483
VG DATA ONLY:     no

rootvg:
LV NAME      TYPE      LPs      PPs      PVs      LV STATE    MOUNT POINT
hd5          boot      1         1         1        closed/syncd  N/A
hd6          paging    16        16        1        open/syncd    N/A
hd8          jfs2log   1          1         1        open/syncd    N/A
hd4          jfs2     168        168        1        open/syncd    /
hd2          jfs2     160        160        1        open/syncd    /usr
hd9var       jfs2      6           6         1        open/syncd    /var
hd3          jfs2     320        320        1        open/syncd    /tmp
hd1          jfs2     160        160        1        open/syncd    /home
hd10opt      jfs2     13         13         1        open/syncd    /opt

```

- g. Create the NIM resources for restoration

- We need two NIM resources to restore Mksysb
 1. Mksysb resource
 2. Spot resource
- Mksysb - # smitty nim_res > define a resource and select mksysb and press enter

```

Manage Resources
Mo
Resource Type
Move cursor to desired item and press Enter. Use arrow keys to scroll.
[MORE...11]
bosinst_data = config file used during base system installation
image_data   = config file used during base system installation
vg data      = config file used during volume group restoration
mksysb       = a mksysb image
script       = an executable file which is executed on a client
resolv_conf  = configuration file for name-server information
savevg       = a savevg image
adapter_def  = directory containing secondary adapter definition f
linux_source = resource containing Linux installation images
devexports   = device handling file used during wpar installation
[MORE...10]
F1=Help      F2=Refresh   F3=Cancel
F8=Image     F10=Exit    Enter=Do
F1/=Find     n=Find Next
F9

```

- Fill in the Name, Server of resource and location of resource (absolute path for location of the mksysb file)

```

Define a Resource
Type or select values in entry fields.
Press Enter AFTER making all desired changes.

[TOP]
* Resource Name          [sapmksysb]
* Resource Type         mksysb
* Server of Resource     [master]
* Location of Resource   [/export/mksysb/myhost]
NFS Client Security Method  []
NFS Version Access       []
Comments                 []

Source for Replication    []
-OR-
System Backup Image Creation Options:
CREATE system backup image? no
NIM CLIENT to backup     []

[MORE...17]

F1=Help      F2=Refresh  F3=Cancel  F4=List
Esc+5=Reset  F6=Command  F7=Edit    F8=Image
F9=Shell     F10=Exit    Enter=Do
  
```

- Define Spot from mksysb resource # smitty nim_res -> define a resource select spot and press enter (Make sure you have enough space in /export/spot filesystem ~2 GB)

```

Manage Resources

Mo
Resource Type
Move cursor to desired item and press Enter. Use arrow keys to scroll.

[TOP]
spot = Shared Product Object Tree - equivalent to /usr file
root = parent directory for client / (root) directories
paging = parent directory for client paging files
dump = parent directory for client dump files
home = parent directory for client /home directories
shared_home = /home directory shared by clients
tmp = parent directory for client /tmp directories
exclude_files = files to be excluded when creating a mksysb or save
lpp_source = source device for optional product images
installp_bundle = an installp bundle file
[MORE...21]

F1=Help      F2=Refresh  F3=Cancel
F8=Image     F10=Exit   Enter=Do
F1           n=Find Next
F9
  
```

- Enter Name, Server of resource, Source of Install images and Location (absolute Path for the resource “/export/spot/sapaix_spot”)

```

Define a Resource
Type or select values in entry fields.
Press Enter AFTER making all desired changes.

[TOP]
* Resource Name           [Entry Fields] [sapaix_spot]
* Resource Type           [spot]
* Server of Resource      [master]
* Source of Install Images [sapmksysb]
*

Source of Install Images
Move cursor to desired item and press Enter.

lpp_source1  resources  lpp_source
spot1        resources  spot
cd0 Available Virtual SCSI Optical Served by VIO Server
sapmksysb    resources  mksysb
[M]
F1=Help      F2=Refresh   F3=Cancel
F8=Image     F10=Exit    Enter=Do
Es /=Find
F9

```

- Creation of spot will take some time ~ 15 to 30 mins

```

Command: OK          stdout: yes          stderr: no
Before command completion, additional instructions may appear below.
Creating SPOT in "/export/spot/sapaix_spot" on machine "master" from "sapmksysb"
...
Restoring files from BOS image. This may take several minutes ...

Checking filesets and network boot images for SPOT "sapaix_spot".
This may take several minutes ...

F1=Help      F2=Refresh   F3=Cancel   F6=Command
F8=Image     F9=Shell    F10=Exit   /=Find
n=Find Next

```

- Assign resources to nimclient machine defined earlier in the document
smitty nim_mac_res -> Allocate Network Install resources and select nimclient from the list and press enter

- Use F7 or Esc+7 to select the sapmksysb and sapaix_spot and press

```

Mo
Available Network Install Resources

Move cursor to desired item and press F7.
ONE OR MORE items can be selected.
Press Enter AFTER making all selections.

[MORE...15]
SystemMgmtClient      installp_bundle
Trusted_AIX           installp_bundle
Trusted_AIX_SYSMGT    installp_bundle
openssh_client        installp_bundle
openssh_server        installp_bundle
bid_ow                bosinst_data
> sapmksysb           mksysb
> sapaix_spot         spot
[BOTTOM]

F1=Help                F2=Refresh            F3=Cancel
F7=Select              F8=Image              F10=Exit
Enter=Do               /=Find                n=Find Next
F9

```

enter

- Command output will be as below exit using F10 or esc+0

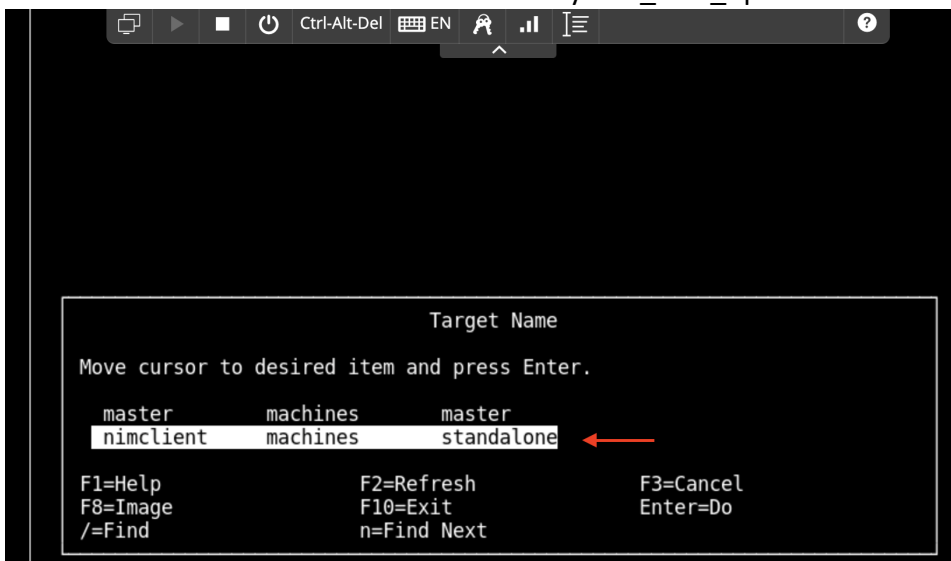
```

COMMAND STATUS
Command: OK          stdout: no          stderr: no
Before command completion, additional instructions may appear below.

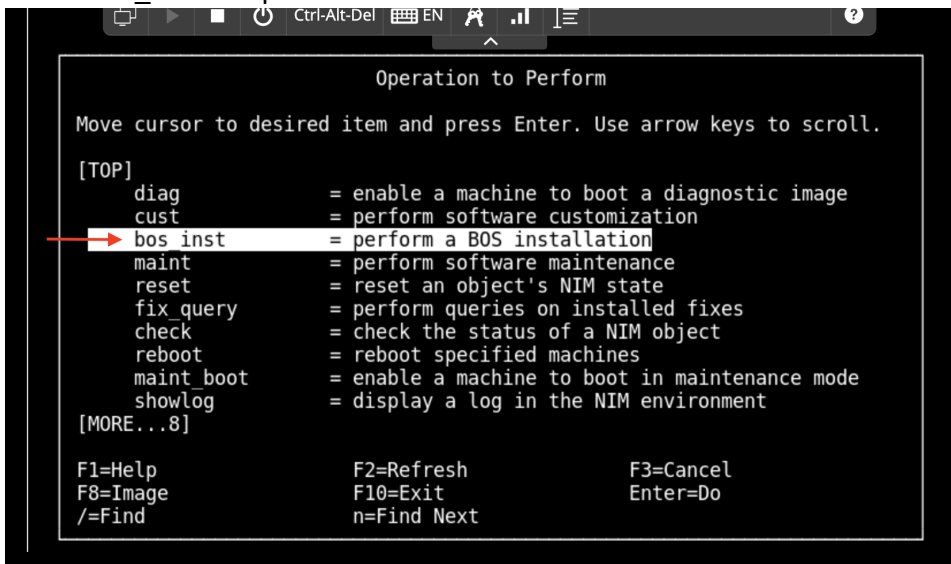
F1=Help                F2=Refresh            F3=Cancel            F6=Command
F8=Image              F9=Shell              F10=Exit             /=Find
n=Find Next

```

- Enable Bos installation for the client # smitty nim_mac_op > nimclient



- Select bos_inst and press enter



- Select the below options for mksysb restore (Use Arrow keys and F4 or Esc+4)

```

Perform a network Install

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

[Entry Fields]
Target Name          nimclient
Source for BOS Runtime Files  → mksysb      +
installp Flags       [-agX]
Fileset Names        []
Remain NIM client after install?  yes      +
Initiate Boot Operation on Client? no        +
Set Boot List if Boot not Initiated on Client? no      +
Force Unattended Installation Enablement? no      +
ACCEPT new license agreements? [yes]     +
Open a console window? [no]      +
Set the DISPLAY environment variable []

F1=Help      F2=Refresh  F3=Cancel   F4=List
Esc+5=Reset  F6=Command  F7=Edit    F8=Image
F9=Shell     F10=Exit   Enter=Do
  
```

- Ready to ROCK n ROLL !

```

COMMAND STATUS

Command: OK      stdout: no      stderr: no

Before command completion, additional instructions may appear below.

█

F1=Help      F2=Refresh  F3=Cancel   F6=Command
F8=Image     F9=Shell    F10=Exit   /=Find
n=Find Next
  
```

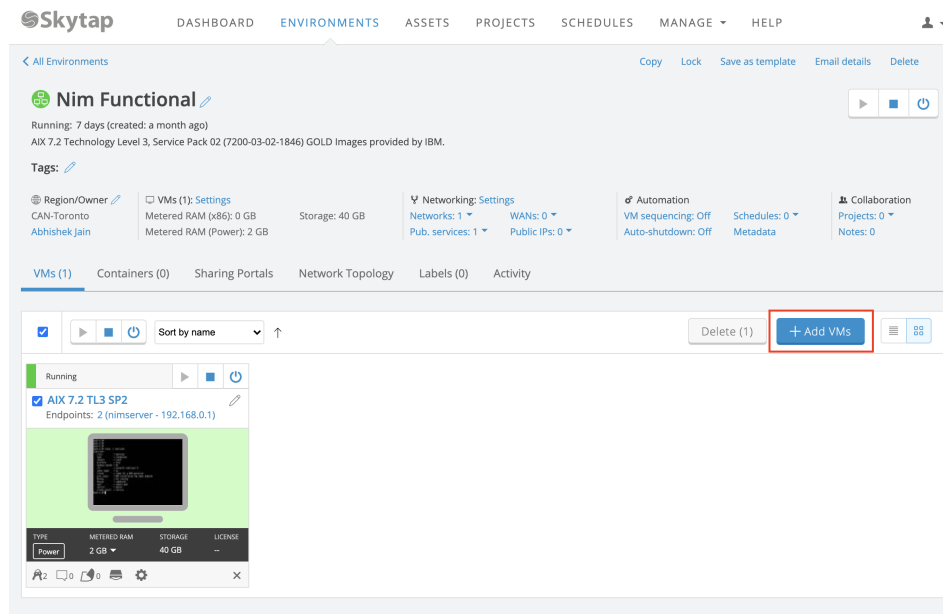
- Verify the client Status # lsnim -l nimclient

```

bash-4.3#
bash-4.3#
bash-4.3#
bash-4.3# lsnim -l nimclient
nimclient:
  class      = machines
  type       = standalone
  connect    = nimsh
  platform   = chrp
  netboot_kernel = 64
  if1        = network1 nimclient 0
  cable_type1 = tp
  Cstate     = ready for a NIM operation
  prev state = BOS installation has been enabled
  Mstate     = not running
  mksysb     = sapaix_sapmksysb
  spot       = sapaix_spot
  control    = master
  Cstate result = failure
bash-4.3#
  
```

h. Setup New lpar to restore the mksysb

- From the Skytap dashboard Add a new lpar in your existing Environment



- Select Templates and choose any AIX template and add VM

Add VMs 5 →

i You must add VMs from the same region.

Environments **Templates** ← 1

My Company **Skytap** All ← 2

← 3

> Owner: Skytap ← 4

> Region: CAN-Toronto

> Status

> Date created

> Date last deployed

> Attributes

Sort by date created ↓

<input checked="" type="radio"/>	AIX 7.1 TL5 SP3 Last deployed: 4 days ago (created: 2 years ago) Owner: Skytap Region: CAN-Toronto Storage: 40 GB Metered RAM: 2 GB Networks: 1 Container hosts: No Labels: 0 Attached licenses: N/A	1 VMs ▾					
<input checked="" type="checkbox"/>	VM	Status	Type	Storage	Metered RAM	Licenses	Endpoints
<input checked="" type="checkbox"/>	AIX 7.1 TL5 SP3	Powered off	Power	40 GB	2 GB ▾	--	▾
<input type="radio"/>	AIX 7.2 TL3 SP2 Last deployed: a month ago (created: 2 years ago) Owner: Skytap Region: CAN-Toronto Storage: 40 GB Metered RAM: 2 GB Networks: 1 Container hosts: No Labels: 0 Attached licenses: N/A	1 VMs ▾					
<input type="radio"/>	AIX NIM Master with SPOTs Last deployed: 2 months ago (created: 2 years ago) Owner: Skytap Region: CAN-Toronto Storage: 60 GB Metered RAM: 2 GB Networks: 1 Container hosts: No Labels: 0 Attached licenses: N/A	1 VMs ▾					

- Edit the setting on VM and Set Hostname and IP

Network Adapters

Adapter	Status	Actions
Adapter	Connected	Edit Disconnect Delete Add service

IP address: 192.168.0.2
 Hostname: aix71tl5sp3
 Network: NIM network
 MAC address: 02:00:EA:36:42:3E
 Network type: Automatic
 Resource ID: nic-58629275-91592928-0

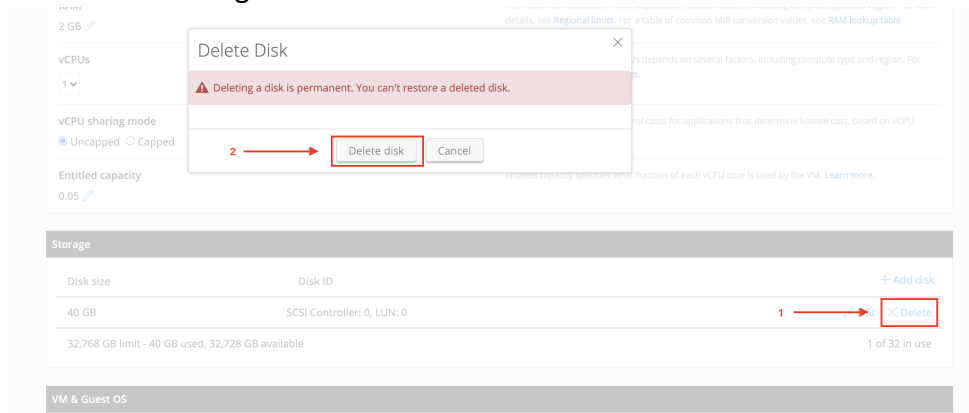
Edit adapter

IP address: 192.168.0.2
 Subnet: 192.168.0.0/24
 MAC address: 02:00:EA:36:42:3E
 Hostname: nimclient

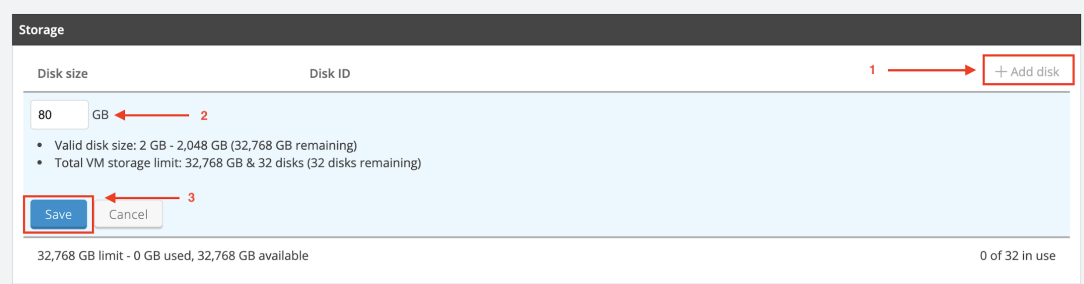
Save Cancel

- From hardware setting assign the disks as per Source lpar rootvg

1. Delete the existing disk and add new disk



2. Add new disk



3. Update the CPU/RAM if required and start the lpar and open the console. System will enter in SMS menu

```

Version FW860.70 (SV860_205)
SMS (c) Copyright IBM Corp. 2000,2016 All rights reserved.
-----
Main Menu
1.  Select Language
2.  Setup Remote IPL (Initial Program Load)
3.  I/O Device Information
4.  Select Console
5.  Select Boot Options

-----
Navigation Keys:
-----
X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:
    
```

- Setup NIC/Ethernet to boot using NIM server using below sequence

1. " 2 - Setup Remote IPL"
2. " 1 - Interpartition Logical LAN"
3. " 1 - IPv4 – Address Format"
4. " 1 - BOOTP"
5. " 1 – IP Parameters"

6. Configure the IPS to match the IP as below

```

Version FW860.70 (SV860_205)
SMS (c) Copyright IBM Corp. 2000,2016 All rights reserved.
-----
IP Parameters
Interpartition Logical LAN: U8284.22A.7829E4X-V13-C3-T1
1. Client IP Address [192.168.0.2] NIMClient IP
2. Server IP Address [192.168.0.1] NIMserver IP
3. Gateway IP Address [192.168.0.254] NIMClientGateway IP
4. Subnet Mask [255.255.255.0] NIMClient Subnet
-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:

```

7. Press esc to return to previous Menu and run "3 - Ping Test" -> press 1 and enter to execute

```

                                     Ping Success.
-----
Press any key to continue.....

```

8. On successful ping press enter and return to main menu using "M"

9. Press X to exit and server should start boot using the LAN adapter

```

TFTP BOOT -----
Server IP.....192.168.0.1
Client IP.....192.168.0.2
Gateway IP.....192.168.0.254
Subnet Mask.....255.255.255.0
( 1 ) Filename...../tftpboot/nimclient.example.com
TFTP Retries.....5
Block Size.....512

TFTP BOOT -----
Server IP.....192.168.0.1
Client IP.....192.168.0.2
Gateway IP.....192.168.0.254
Subnet Mask.....255.255.255.0
( 1 ) Filename...../tftpboot/nimclient.example.com
TFTP Retries.....5
Block Size.....512
PACKET COUNT = 41300

Installing Base Operating System

Please wait...

Approximate      Elapsed time
% tasks complete (in minutes)

█           8           0           1% of mksysb data restored.
    
```

10. It will take 10 – 20 Mins to restore Mksysb and server will reboot with the Mksysb restored

```
#
#
# uname -a
AIX nimclient 2 7 00FB29E44C00
#
# df -g
Filesystem      GB blocks      Free %Used      Iused %Iused Mounted on
/dev/hd4         5.25          5.05   4%      14569    2% /
/dev/hd2         5.00          2.95  41%      45896    7% /usr
/dev/hd9var      0.25          0.16  36%         741    2% /var
/dev/hd3        10.00          6.48  36%       1781    1% /tmp
/dev/hd1         5.00          5.00   1%         61     1% /home
/dev/hd11admin   0.12          0.12   1%         5     1% /admin
/proc            -              -      -         -      - /proc
/dev/hd10opt     0.50          0.13  74%      14141   32% /opt
/dev/livedump    0.25          0.25   1%         4     1% /var/adm/ras/livedump
# █
```

Savevg Backup and Restore in Skytap

- 5) Backup and restore data volumes using savevg
- a. Prechecks –
 - Minimise active read/writing to disk to avoid file or database corruption
 - Verify enough free space to backup volume group to your filesystem
 - b. Backup execution -
 - Verify volume group has desired volumes:
 1. run # lsvg and #lsvg -a app to review volumes to be backed up

```
# lsvg
rootvg
app
data
# lsvg -l app
app:
LV NAME          TYPE      LPs      PPs      PVs  LV STATE    MOUNT POINT
applv            jfs2     1278    1278     1    open/syncd  /app
# █
```

2. run backup to location with sufficient space with the command # savevg -r -f /tmp/backup/app.image app


```
#
# savevg -r -f /tmp/backup/app.image app

Creating information file for volume group app.

Backing up user Volume Group information files only.
Creating list of files to back up.
Backing up 6 files

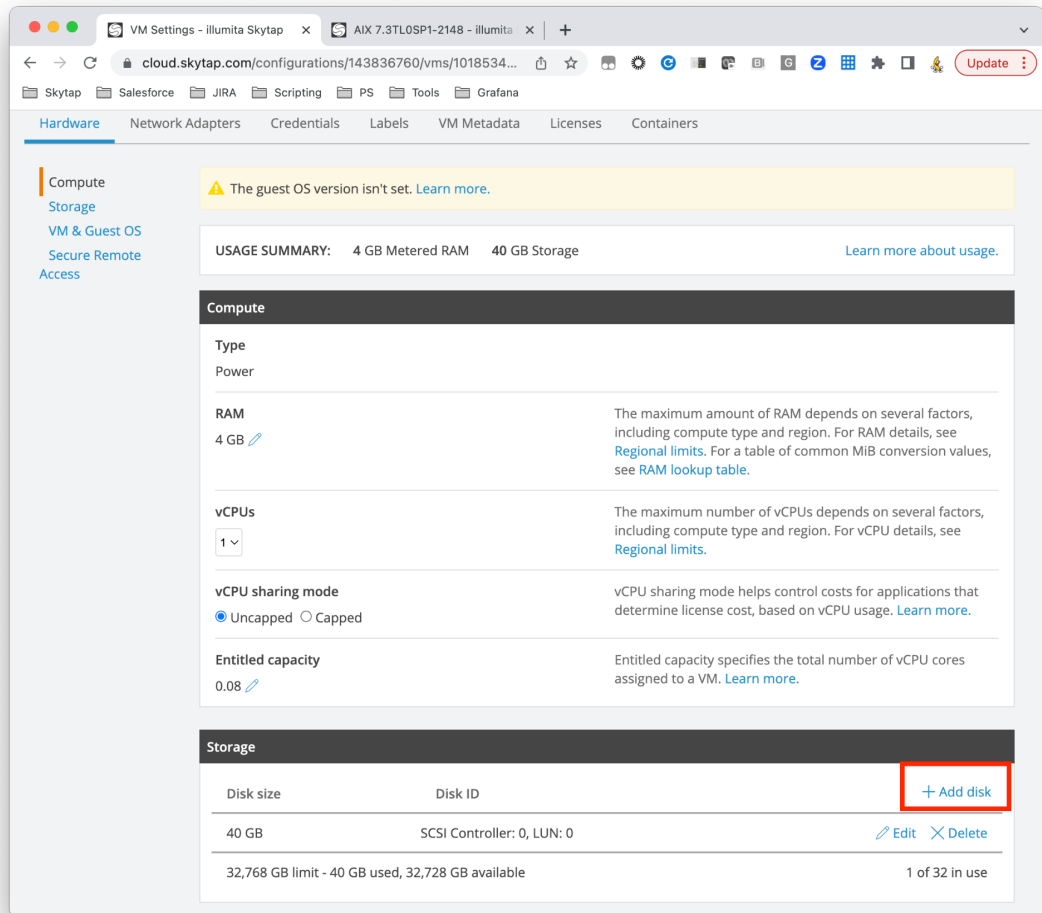
6 of 6 files (100%)
0512-038 savevg: Backup Completed Successfully.
# █
```

- c. Copy backup to Skytap LPAR (see copy methods above for mkysyb)
- d. Prepare system in Skytap to restore volumes. Note: if you want to shrink your volumes when restoring, you should pick smaller sizes that are still sufficient for the data in the volume group.
 - Identify physical volumes associated with the volume and their sizes:
 1. run # lspv and # lspv hdisk1 to confirm the size in megabytes of any necessary disks

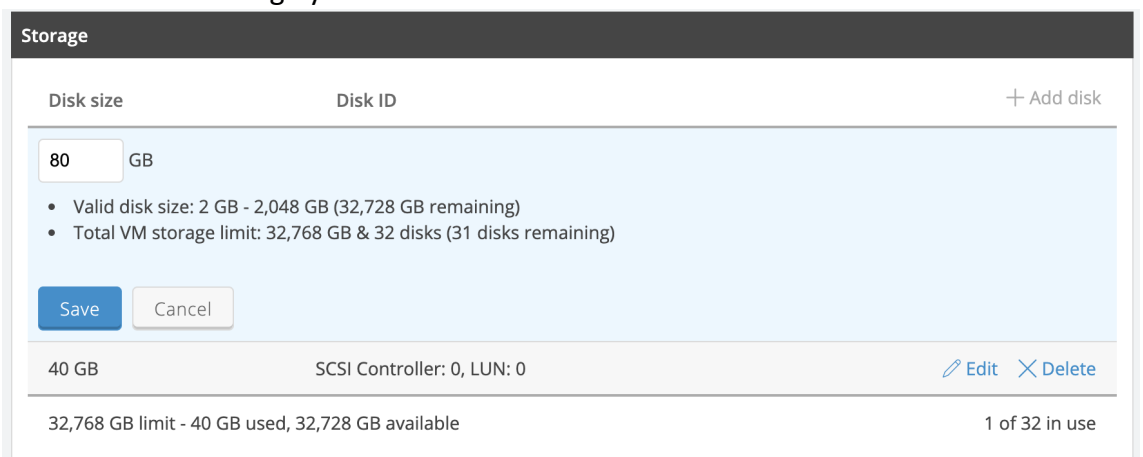
```
#
# lspv
hdisk0          00fb3aca9c0a8fc1      rootvg          active
hdisk1          00fb4f3c486538a2      app              active
hdisk2          00fb4f3c486580b9      data             active
# lspv hdisk1
PHYSICAL VOLUME:  hdisk1          VOLUME GROUP:  app
PV IDENTIFIER:   00fb4f3c486538a2 VG IDENTIFIER   00fb4f3c000004c00000001874
86538b8
PV STATE:        active
STALE PARTITIONS: 0          ALLOCATABLE:   yes
PP SIZE:         64 megabyte(s) LOGICAL VOLUMES: 1
TOTAL PPs:       1278 (81792 megabytes) VG DESCRIPTORS: 2
FREE PPs:        0 (0 megabytes)   HOT SPARE:     no
USED PPs:        1278 (81792 megabytes) MAX REQUEST:   256 kilobytes
FREE DISTRIBUTION: 00..00..00..00..00
USED DISTRIBUTION: 256..256..255..255..256
MIRROR POOL:     None
# █
```

- In Skytap add disks to your restore target of sufficient size

- a. Shut down the restore LPAR in Skytap, go to edit VM and add disks



- b. Pick how much storage you need and save



- c. Repeat for any additional physical disks you need to add
 - d. Start LPAR when disks added
- 6) Run restores for savevg

- a. identify the sizes of your disks to make sure you are restoring to the correct locations with # lspv and # bootinfo -s hdisk1

```
# lspv
hdisk0          00fb3aca9c0a8fc1          rootvg          active
hdisk1          none                      None
hdisk2          none                      None
# bootinfo -s hdisk1
81920
# █
```

- b. run # lssavevg -f app.image -l to confirm contents of savevg file

```
#
# lssavevg -f app.image -l
VOLUME GROUP:      app
BACKUP DATE/TIME:  Mon Apr 3 13:56:22 CDT 2023
UNAME INFO:        AIX aix7 3 7 00FB4F3C4C00
BACKUP OSLEVEL:    7.3.0.0
MAINTENANCE LEVEL: 7300-00
SERVICEPACK LEVEL: 7300-00-01-2148
BACKUP SIZE (MB):  81792
SHRINK SIZE (MB):  3201
VG DATA ONLY:     yes

app:
LV NAME           TYPE           LPs           PPs           PVs           LV STATE           MOUNT POINT
applv             jfs2           1278          1278          1             open/syncd         /app
# █
```

- c. run restore # restvg -f app.image hdisk1 (add flag -s to restore with minimum size, you can specify multiple hdisks if desired)

```
# restvg -f app.image hdisk1

Will create the Volume Group:  app
Target Disks:  hdisk1
Allocation Policy:
    Shrink Filesystems:      no
    Preserve Physical Partitions for each Logical Volume:  no

Enter y to continue: y
█
```

- d. Finished!