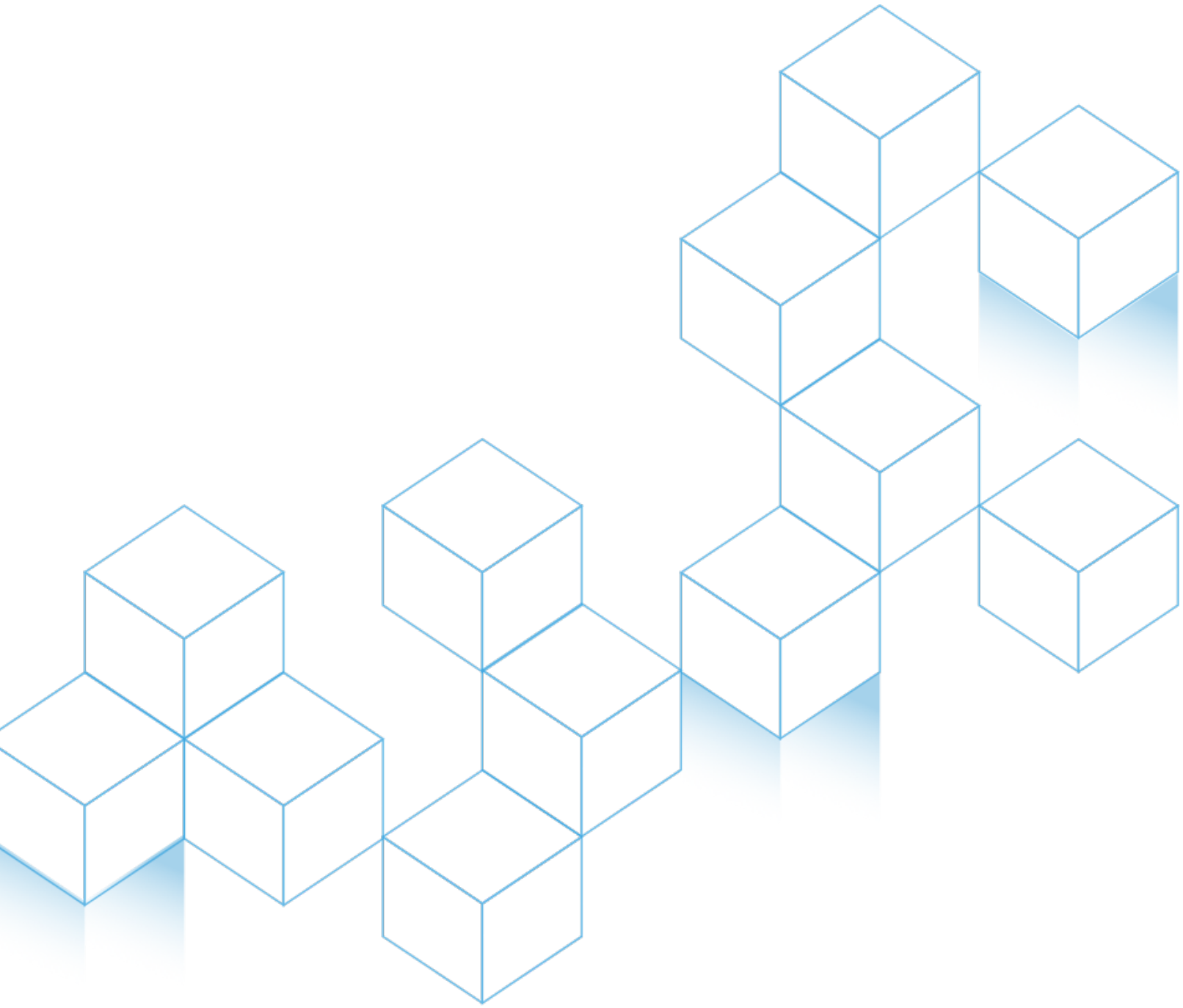


# Mksysb Backup and Restore Skytap on Azure



## 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

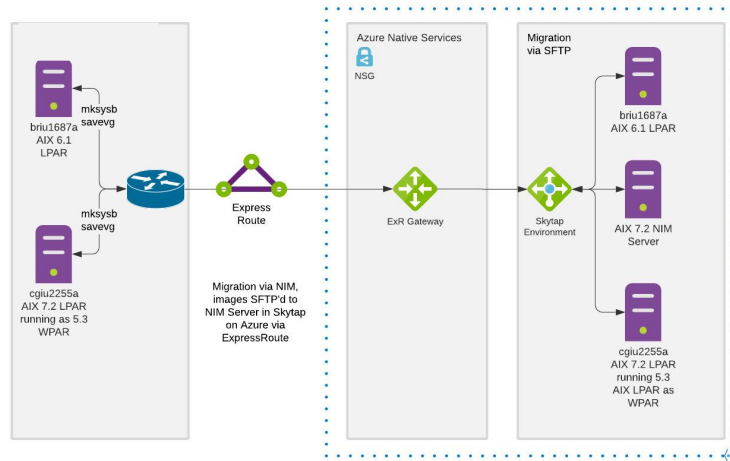
```
# lsmksysb -lf /backup/myhost.mksysb
VOLUME GROUP:      rootvg
BACKUP DATE/TIME:  Thu Dec 16 00:38:18 UTC 2021
UNAME INFO:        AIX sapaix 2 7 00C97B604B00
BACKUP OSLEVEL:    7.2.3.15
MAINTENANCE LEVEL: 7200-03
SERVICEPACK LEVEL: 7200-03-02-1846
BACKUP SIZE (MB):  28448
SHRINK SIZE (MB):  8483
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

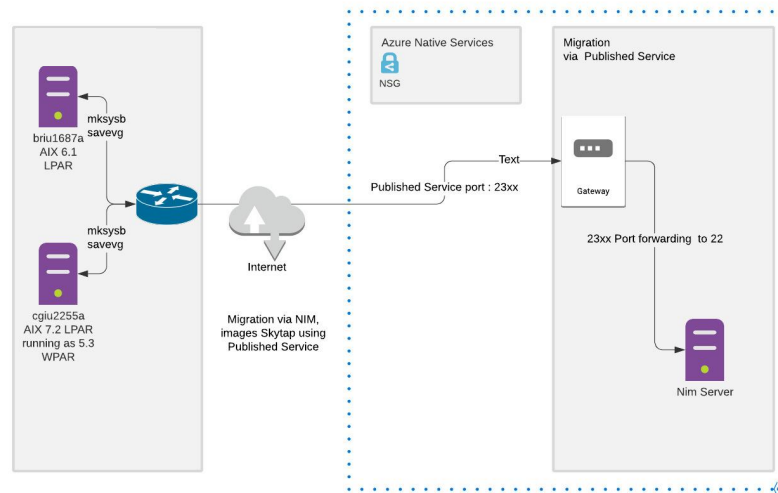
#### a. Option 1 (Direct Connectivity)

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



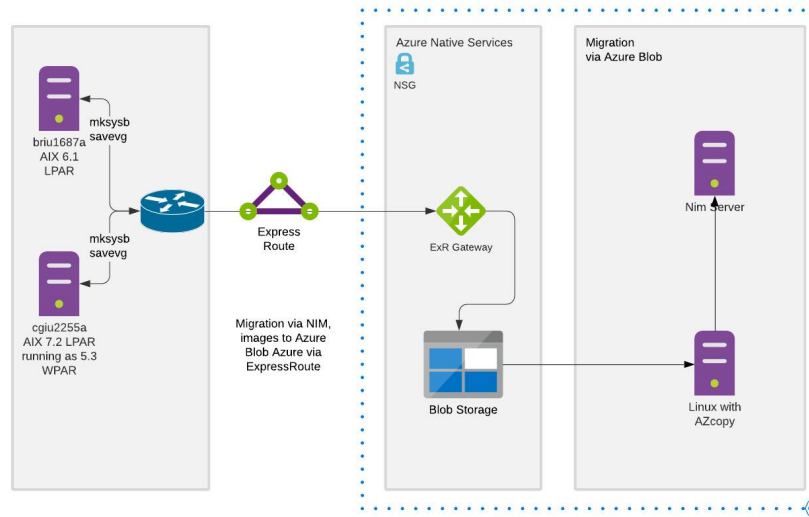
**b. Option 2 (Published Service)**

- 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

Select a template below to create a new environment.

My Company Skytap All

Sort by date created ↓

AIX

Owner: Skytap

Region: CAN-Toronto

Status

Date created

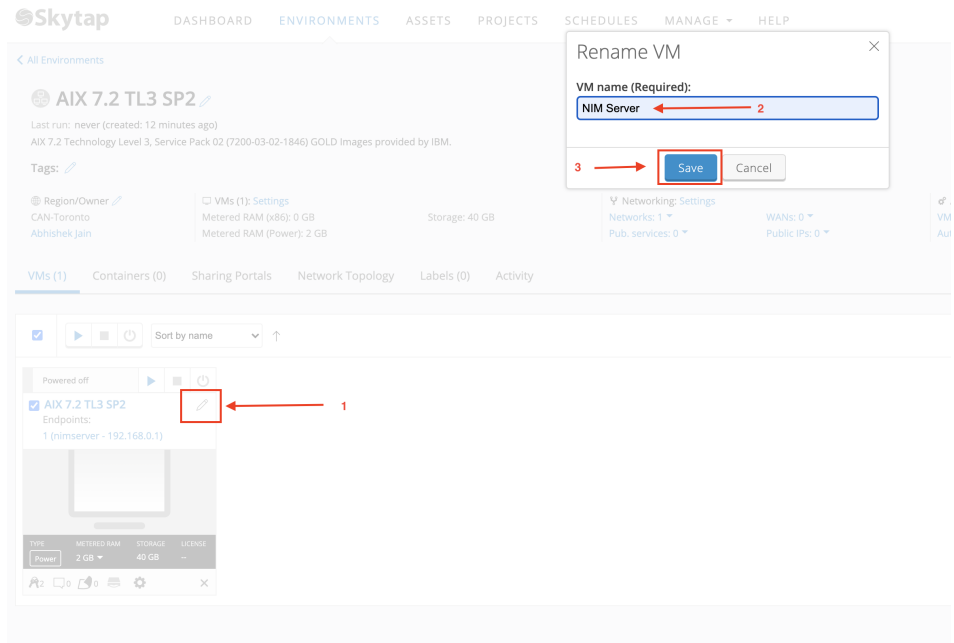
Date last deployed

Attributes

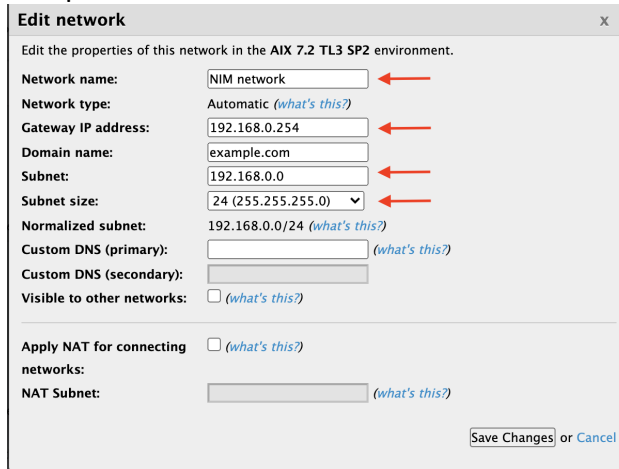
VM	Status	Type	Storage	Metered RAM	Licenses	Endpoints
<input type="checkbox"/> AIX 7.1 TL5 SP3			40 GB	Metered RAM		
<input checked="" type="checkbox"/> AIX 7.2 TL3 SP2	Powered off	Power	40 GB	2 GB	--	
<input type="checkbox"/> AIX NIM Master with SPOTS			60 GB	Metered RAM		

Create environment Cancel

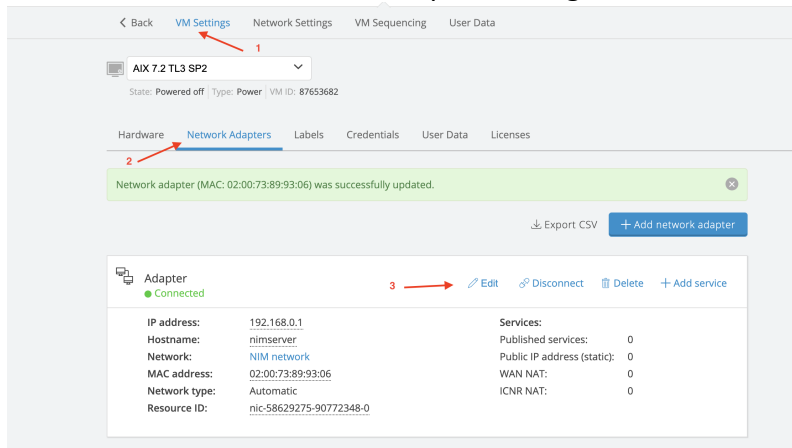
- Rename the Lpar to NIM server

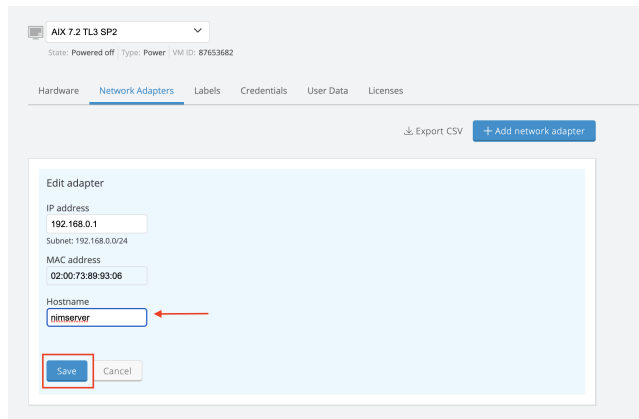


- Setup the Desired Network and attach the network to the Lpar

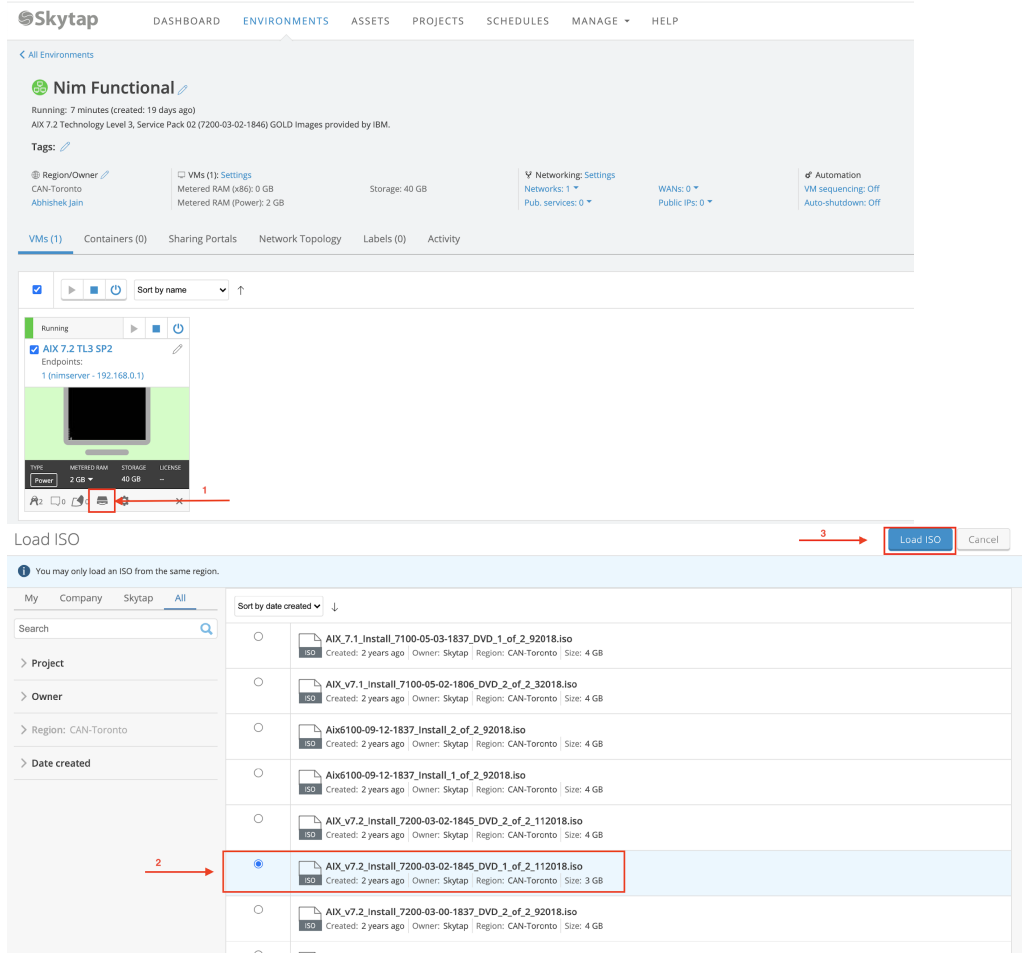


- Set the desired hostname in Adapter setting





- 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
```





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

```
#
# hostname
nimserver
#
# 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           nimserver
#
```

- 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] ← [Entry Fields]
  (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]                                     [Entry Fields]
* NIM Machine Name                       [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>`

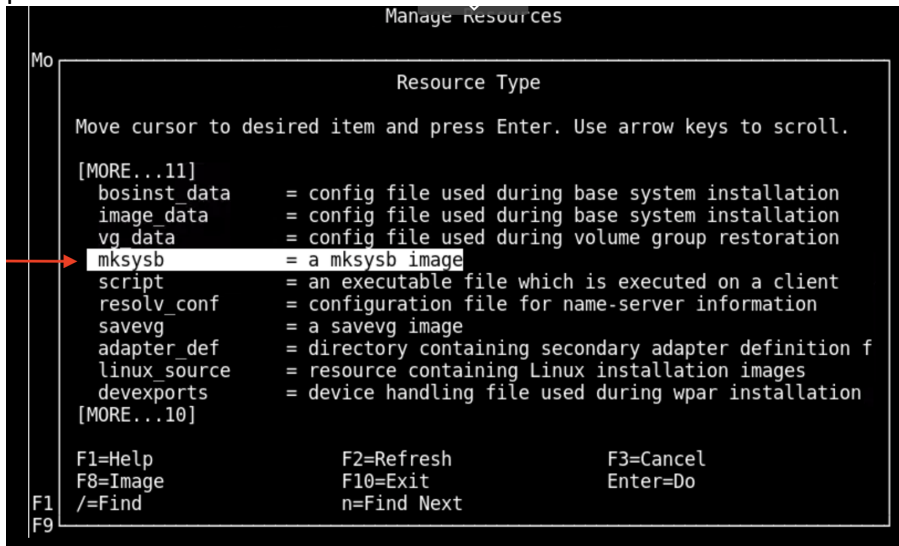
```

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
F9=/=Find    n=Find Next
    
```

- 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 /=Find    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]
* Resource Type           [sapaix_spot]
* Server of Resource      [spot]
* Source of Install Images [master]
*                          [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
F1=Image     F10=Exit     Enter=Do
Es /=Find    n=Find Next
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 enter

```

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
F1
F9

```

- 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

```

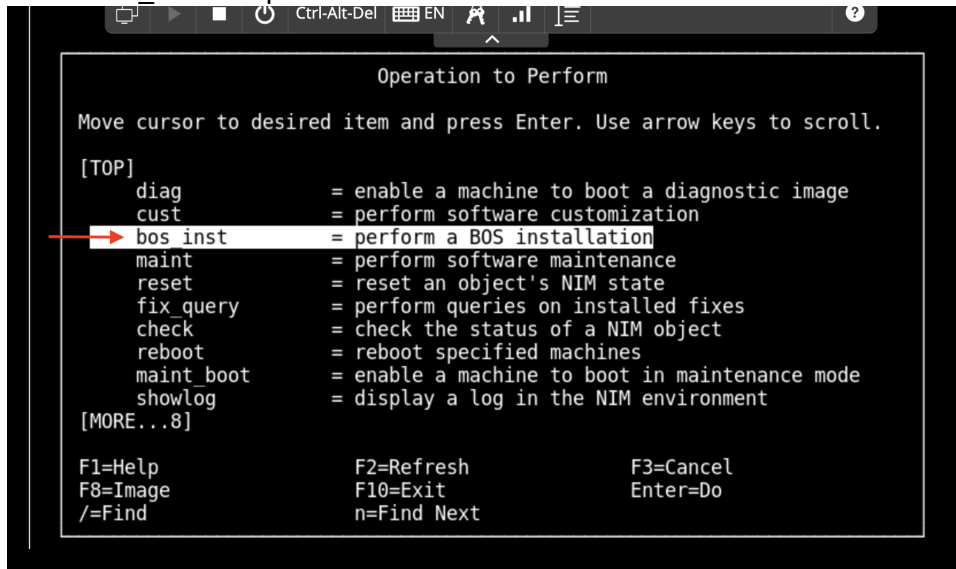
Target Name

Move cursor to desired item and press Enter.

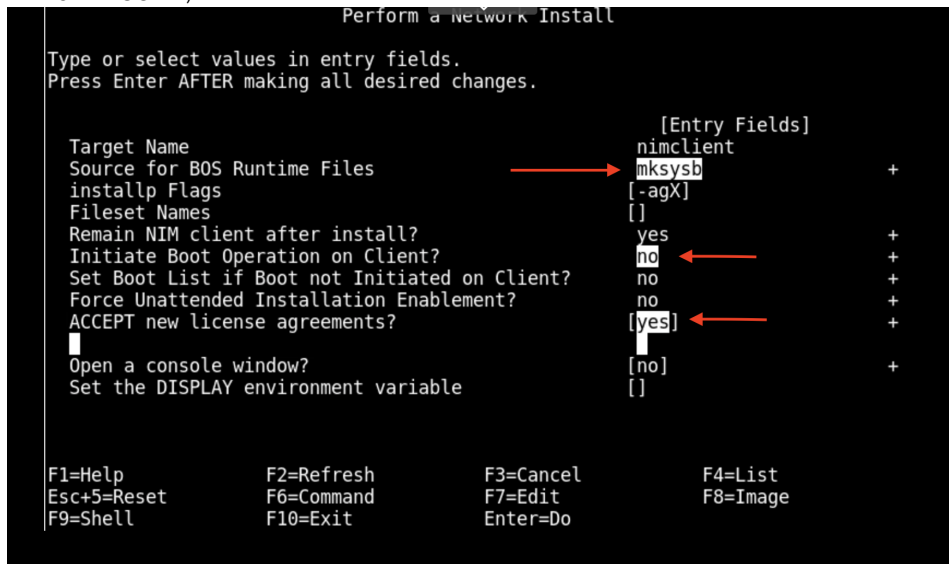
  master      machines      master
  nimclient   machines      standalone ←
F1=Help          F2=Refresh      F3=Cancel
F8=Image         F10=Exit       Enter=Do
/=Find          n=Find Next

```

- Select bos\_inst and press enter



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





- 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
  
```

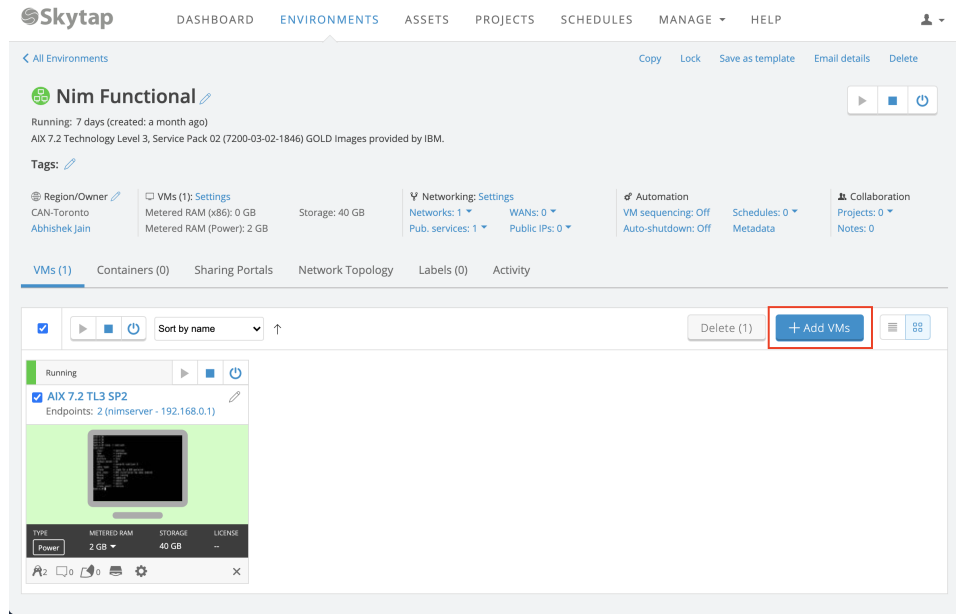
- Verify the client Status # lsnim -l nimclient

```

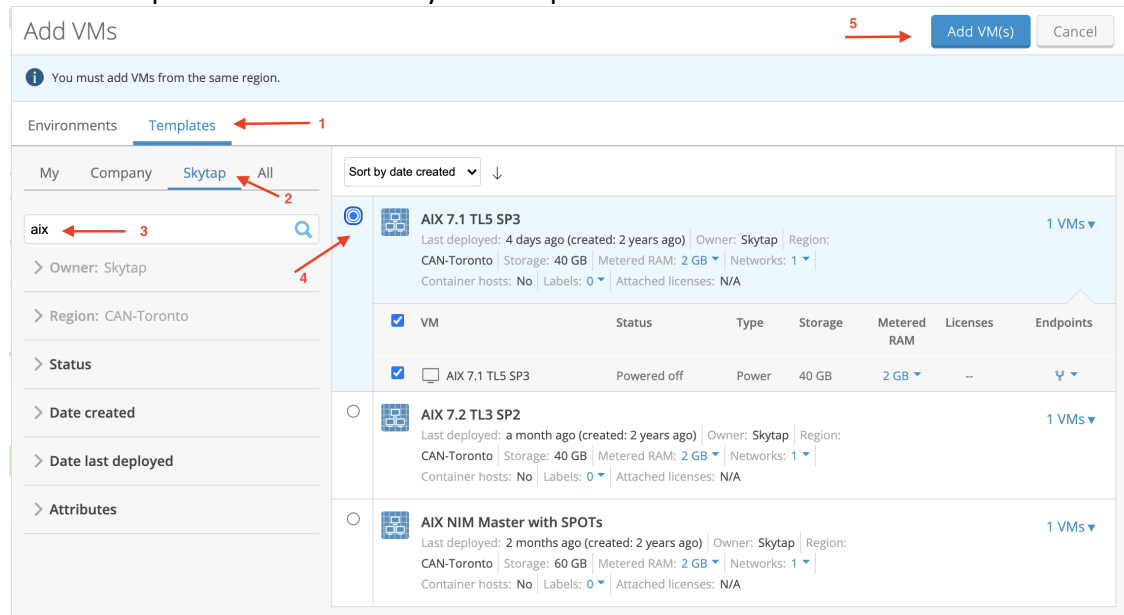
bash-4.3#
bash-4.3#
bash-4.3#
bash-4.3# lsnim -l nimclient
nimclient:
  class           = machines
  type            = standalone
  connect         = nimsh
  platform        = chrp
  netboot_kernel = 64
  if1             = network1 nimclient 0
  cable_type1    = tp
  Cstate         = ready for a NIM operation
  prev_state     = BOS installation has been enabled
  Mstate         = not running
  mksysb         = 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 Ipar in your existing Environment



- Select Templates and choose any AIX template and add VM



- Edit the setting on VM and Set Hostname and IP

Skytap DASHBOARD ENVIRONMENTS ASSETS PROJECTS SCHEDULES MANAGE ▾ HELP

< Back VM Settings Network Settings VM Sequencing User Data

AIX 7.1 TL5 SP3  
State: Powered off | Type: Power | VM ID: 88468554

Hardware **Network Adapters** Labels Credentials User Data Licenses

Export CSV + Add network adapter

Adapter	IP address	Hostname	Network	MAC address	Network type	Resource ID	Services
Connected	192.168.0.2	aix71t15sp3	NIM network	02:00:EA:36:42:3E	Automatic	nic-58629275-91592928-0	Published services: 0 Public IP address (static): 0 Secondary IP address: 0 WAN NAT: 0 ICNR NAT: 0

Skytap DASHBOARD ENVIRONMENTS ASSETS PROJECTS SCHEDULES MANAGE ▾

< Back VM Settings Network Settings VM Sequencing User Data

AIX 7.1 TL5 SP3  
State: Powered off | Type: Power | VM ID: 88468554

Hardware **Network Adapters** Labels Credentials User Data Licenses

Export CSV + Add network adapter

**Edit adapter**

IP address  
 ←

Subnet: 192.168.0.0/24

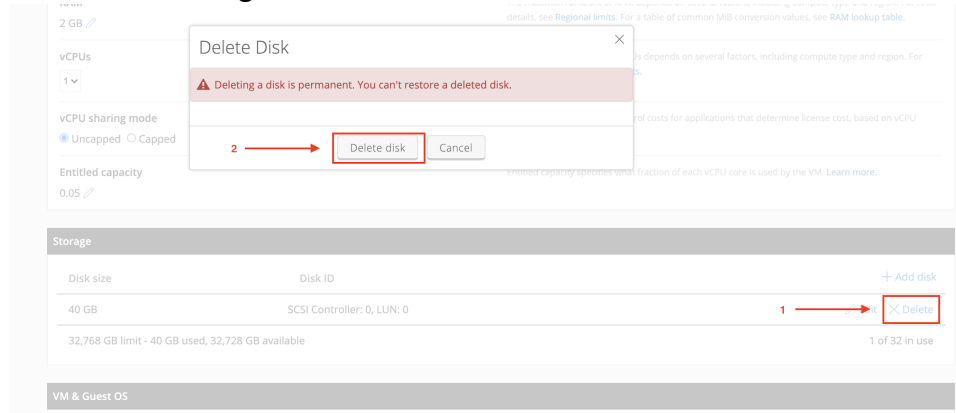
MAC address

Hostname  
 ←

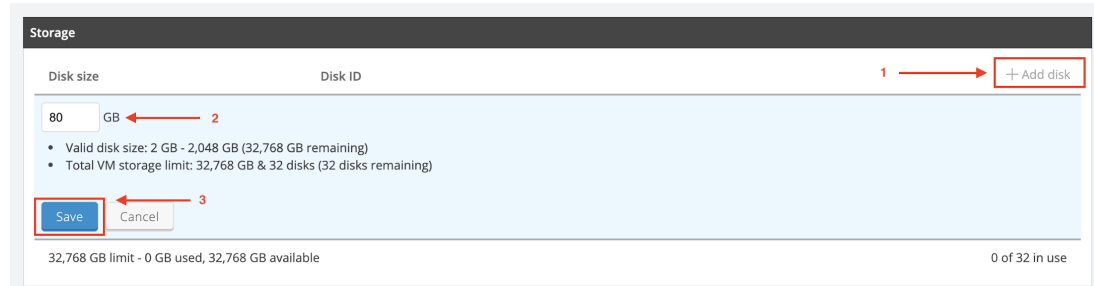
Save Cancel

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

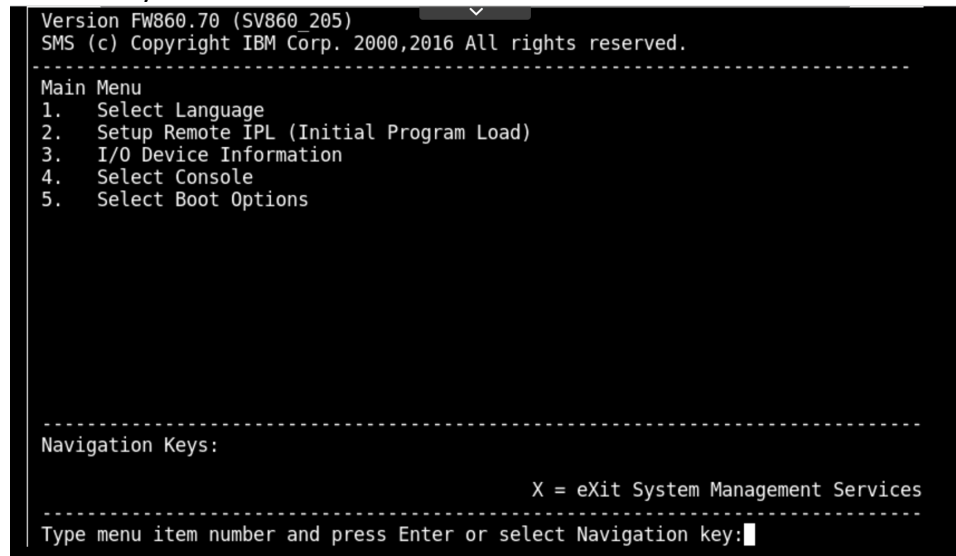
### 1. Delete the existing disk and add new disk



### 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



- 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.
# █
```

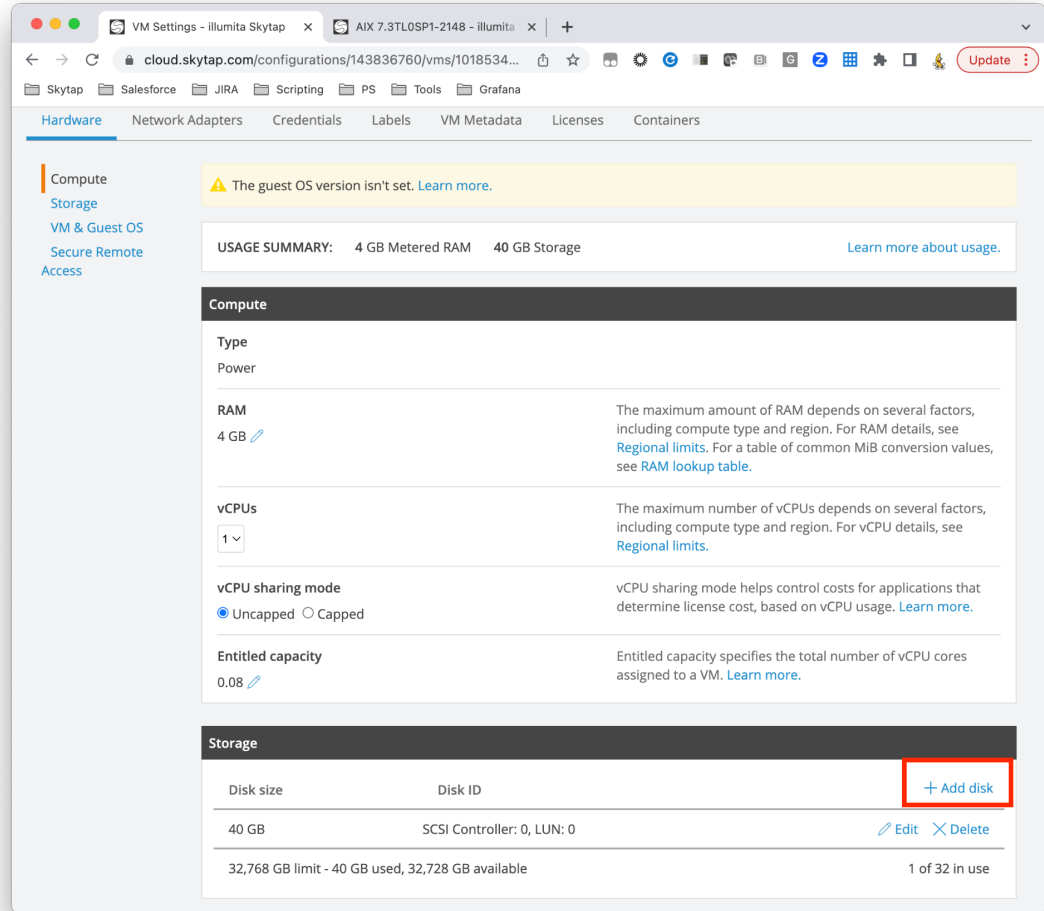
- c. Copy backup to Skytap LPAR (see copy methods above for mksysb)
- d. Prepare system in Skytap to restore volumes. Note: if you want to shrink your volumes when restoring, you should pick smaller sizes that are still sufficient for the data in the volume group.
  - Identify physical volumes associated 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     00fb4f3c00004c00000001874
86538b8
PV STATE:         active
STALE PARTITIONS: 0
PP SIZE:          64 megabyte(s)
TOTAL PPs:        1278 (81792 megabytes)
FREE PPs:         0 (0 megabytes)
USED PPs:         1278 (81792 megabytes)
FREE DISTRIBUTION: 00..00..00..00..00
USED DISTRIBUTION: 256..256..255..255..256
MIRROR POOL:     None
# █
```

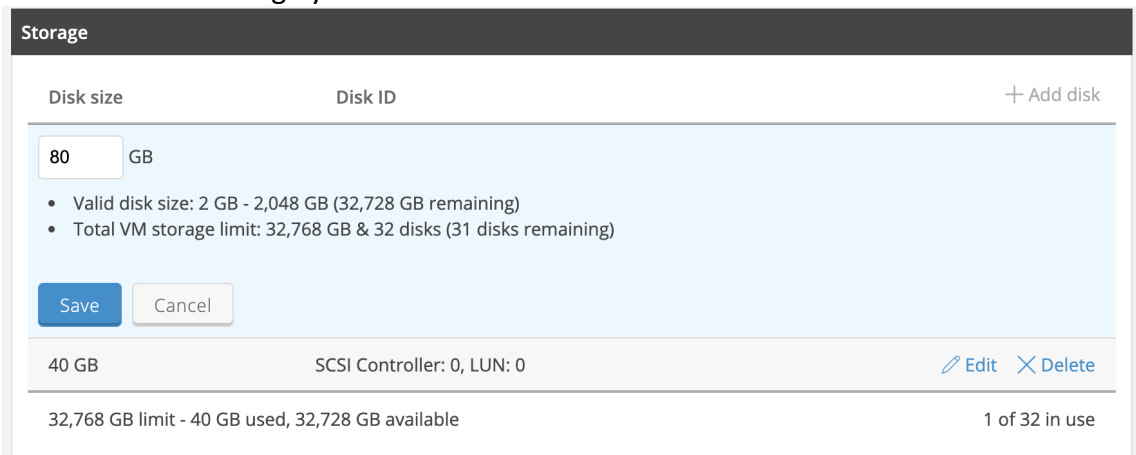
- In Skytap add disks to your restore target of sufficient size



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!