Network Installation Manager Cheat Sheet

CHMOD 666.ORG

Main terms

machine	A machine managed by NIM. master (NIM itself), alternate_master (its backup), and standalone (NIM Client).
networks	Definition of networks (mask, gateway, name) used by NIM and its clients.
lpp_source	AIX Licensed Program Products (LLPs) in Backup File Format (BFF) format.
spot	**S**hared **P**roduct **O**bject **T**ree : directory of installed fileset used by client booting procedure.
mksysb	A resource containing the image of the root volume group.
bosinst_data	Specifications file used for restoring system backup images (INSTALL_METHOD, PROMPT, ..).
script	Executable file used for customization. (fb_script, postinstall).

...

Installation

Filesets: bos.sysmgt.nim.master bos.sysmgt.nim.spot bos.sysmgt.nim.client

Filesystems recommandation:

- /export/nim/lpp_source
- /export/nim/spot
- /export/nim/scripts
- /export/nim/backups - *for NIM database backups*
- /export/nim/mksysb
- /tftpboot

First configuration:
 # nimconfig -a pif_name=en0 -a master_port=1058 -a netname=vlan2-net -a cable_type=N/A
Enable ssl support:
 # nimconfig -c
Rebuild /etc/niminfo:
 # nimconfig -r

Querying

List classes:
 # lsnim -p
List object by classe:
 # lsnim -P -c classe # lsnim -P -c machines
List supported operations by object type:
 # lsnim -P -t object_type -O # lsnim -P -t standalone -O
Display by class:
 # lsnim -c [machines|networks|resources]
Display by object type:
 # lsnim -t
[standalone|lpp_source|spot|install_bundle|scripts|ent|..]
Full details on an object:
 # lsnim -l lpar1 # lsnim -Fl lpar1
List supported operations on an object:
 # lsnim -O lpar1
List attributes required for a specific operation:
 # lsnim -q operation object # lsnim -q define lpar1

lpp_source

lpp_source creation:
 # nim -o define -t lpp_source -a server=master -a location=/export/nim/lpp_source/6100-08-02-1316-lpp_source 6100-08-02-1316-lpp_source
lpp_source update:
 # nim -o update -a packages=all -a source= /export/nim/lpp_source/new_filesets 6100-08-02-1316-lpp_source
List duplicate base and update filesets and superseded updates:
 # nim -o lppmgr -a lppmgr_flags="-lsb" 6100-08-01-1245-lpp_source
Remove duplicate base and update filesets and superseded updates :
 # nim -o lppmgr -a lppmgr_flags="-rbux" 6100-08-01-1245-lpp_source
Remove all non-simages filesets:
 # nim -o lppmgr -a lppmgr_flags="-rX" 6100-08-01-1245-lpp_source
Remove all language support except 'C':
 # nim -o lppmgr -a lppmgr_flags="-l -k C" 6100-08-01-1245-lpp_source
Rename bff files with filetset names:
 # bffcreate -c -d /filets/path

spot

Create a spot from lpp_source:
 # nim -o define -t spot -a source=6100-08-02-1316-lpp_source -a location=/export/nim/spot/6100-08-01-1245-spot -a server=master 6100-08-02-1316-spot
Create a spot from an mksysb:
 # nim -o define -t spot -a source=lpar1-mksysb -a location=/export/nim/spot/lpar1-spot -a server=master lpar1-spot List filesets in a spot:
 # nim -o showres lpar1-spot

check

All NIM resources can be checked with the check operation. Use it every time an lpp_source or a spot is created.
Check an lpp_source:
 # nim -o check 7100-02-02-1316-lpp_source
Check a spot:
 # nim -o check 7100-02-01-1316-spot

network

List networks:
 # lsnim -c networks # lsnim -t ent
Define a new ent network:
 # nim -o define -t ent -a net_addr=10.10.20.0 -a snm=255.255.254.0 -a routing1="default 10.10.21.254" 10-10-20-0-s23-net

deallocate reset

Deallocate all resources on a client:
 # nim -o deallocate -a subclass=all lpar1
 # nim -Fo deallocate -a subclass=all lpar1
Reset a nimclient:
 # nim -o reset lpar1
 # nim -Fo reset lpar1

Others

Create an mksysb:
 # nim -o define -t mksysb -a server=master -a mk_image=yes -a location=/export/nim/mksysb/lpar1/lpar1-mksysb -a source=lpar1 lpar1-mksysb
installp_bundle creation:
A NIM installp_bundle is a file that contains the names of filesets that should be installed or remove by a NIM operation.
1. installp_bundle file creation, I for filesets, R for RPM :
 # cat openssh_server.bnd
 I:openssl.base
 I:openssl.license
 I:openssl.man.en_US
 I:openssh.base.server
 I:openssh.man.en_US
2. installp_bundle creation :
 # nim -o define -t installp_bundle -a server=master -a location=/export/nim/others/installp_bundle/openssh_server.bnd openssh_server-installp_bundle
3. install the bundle with a cust operation;
 # nim -o cust -a lpp_source=7100-02-02-1316-lpp_source -a installp_flags=agXY -a installp_bundle=openssh_server-installp_bundle lpar1
Copy AIX CD image to NIM:
 # loopmount -i 6100-06cd1.iso -o "-V cdrfs -o ro" -m /tmp/cd1
 # gencopy -d /tmp/cd1 -t /export/nim/lpp_source/6100-06-01-0000-lpp_source all
Installing ifix using nim:
1. Create emgr/ppc direcotries into lpp_source location :
 # ls emgr/ppc
 VIOS_2.2.2.1_IV31624.121114.epkg.Z
 VIOS_2.2.2.1_IV32091.121116.epkg.Z
2. Create or update lpp_source with ifixes.
3. install fix with a cust operation :
 # nim -o cust -a filesets=VIOS_2.2.2.1_IV32091.121116.epkg.Z -a lpp_source=vios2221-lpp_source vios1
Backup NIM database:
 # /usr/lpp/bos.sysmgt/nim/methods/m_backup_db nim_database_bckp Restore NIM database
 # /usr/lpp/bos.sysmgt/nim/methods/m_restore_db nim_database_bckp

nimclient

NIM master and alternate NIM master must be resolved and inverse resolved from all the nimclients. Logs files can be found in /var/adm/ras/nimsh.log and /var/adm/ras/nimlog.

Reconfigure nimclient:
 # niminit -a name=$(hostname) -a master=nim_master -a master_port=1058 -a registration_port=1059 -a connect=nimsh

If nimsh is secured by ssl:
 # nimclient -c

Get certificates from alternate NIM master:
 # nimclient -o get_cert -a master_name=nim_alternate

Restart nimsh:
 # startsrc -s nimsh
 # stopsrc -s nimsh

hanim

NIM master and alternate NIM master must be at the same oslevel.

Enable alternate NIM master:
 # nimint -a is_alternate=yes -a master=nim_master -a pif_name=en0 -a cable_type=N/A -a connect=nimsh -a name=nim_alternate Database synchronisation:
 # nim -o sync -a force=yes alternate_nim_master

Database synchronisation and resource replication:
 # nim -o sync -a force=yes -a replicate=yes alternate_nim_master

Takeover:
 # nim -o takeover -a show_progress=yes nim_master

DSM

filesets: dsm.core dsm.dsh expect.base tcl.base tk.base X11.apps.xterm X11.apps.aixterm

logging:

- doc: /opt/ibm/sysmgt/dsm/doc/dsm_tech_note.pdf
- conf file: /etc/ibm/sysmgt/dsm/dsm.properties
- dgetmacs, dkeyexch, dnetboot log: /var/ibm/sysmgt/dsm/log
- dsconsole log: /var/ibm/sysmgt/dsm/log/console/
- lpar_netboot log: /tmp

Hardware Management Console:
1. Password file creation:
 # dpasswd -f hmc_passwd_file -U hscroot
2. Key exchange:
 # dkeyexch -f /etc/ibm/sysmgt/dsm/config/hmc_passwd_file -I hmc -H hmc_hostname
3. NIM object:
 # nim -o define -t hmc -a if1="find_net hmc_hostname 0" -a passwd_file=/etc/ibm/sysmgt/dsm/config/hmc_passwd_file hmc_hostname

CEC:
1. Get hw_type, hw_model, hw_serial trough HMC *# ssh hscroot@hmc_hostname "lssyscfg -r sys -F name,type_model,serial_num"*
2. NIM object:
 # nim -o define -t cec -a hw_type=8203 -a hw_model=E4A -a hw_serial=060CE99 -a mgmt_source=hm_hostname cec1

Get MAC address:
 # dgetmacs -n lpar1 -C NIM

Define standalone object with management profile:
 # nim -o define -t standalone -a if1="10-10-20-0-s24-net lpar2 00AABBCCDDEE" -a net_settings1="auto auto" -a mgmt_profile1="hmc1 4 CEC1" lpar2

dconsole:

Open a text console in read-write mode:
 # dconsole -C NIM -n lpar1 -t -l

Open an xterm console in read-write mode:
 # dconsole -C NIM -n lpar1 -l

Open a text console in read-only mode:
 # dconsole -C NIM -n lpar1 -t -l -r

reboot the machine:
 # nim -o reboot -a inst_warning=yes -a open_console=yes lpar1 boot in maintenance mode maint_boot:
 # nim -o maint_boot -a spot=7100-02-02-1316-spot -a boot_client=yes -a open_console=yes lpar1

bos_inst rte installation
 # nim -o bos_inst -a bosinst_data=hdisk0_noprompt-bosinst_data -a source=rte -a installp_flags=agX -a accept_licenses=yes -a open_console=yes -a spot=7100-02-02-1316-spot -a lpp_source=7100-02-02-1316-lpp_source lpar1

—————————