

DevOps CLI Processes: CA Identity Suite with SSO Integration

with notes/impacts to AGILE

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Background

- This deck attempts to clarify several challenges for managing the versatility of framework solutions.
 - One of the challenges for framework solutions is the multiplied/many ways it can be vertically and horizontally installed. These many choices can be onerous to new and seasoned administrators.
 - Cluster technology is diverse at the different tiers of web application servers, mid-, and data tier components.
- The concept of **Dev-Ops** is to offer standardized prescriptive approaches to installs, scalability, and release-automation.
 - DevOps may be provided through a mix of management solutions, e.g. **CA Express** (via CA Release Automation/Nolio), **Chef** (Open Source), or common script based silent install (offered by the solution or 3rd party components).
 - DevOps processes work well with **AGILE** service project approaches.
 - **CA SecureCenter** is a new and exciting process that introduces a new layer of abstraction between the OS and the application(s) using Docker (along with Core OS & Kubernetes) to reduce installation, upgrade and scalability complexities.

Why we care? AGILE and DEV-OPS Requests

Challenge:

The word **Installs** has various meanings to CA and Customers

Definition 1: Installs of base framework solutions (little to no business value)

Definition 2: Installs of base solution, plus business logic to meet initial business value.

Definition 3: Install of base solution, plus customizations + business logic to meet all business use-cases.

Expectations:

Customer satisfaction is tied to management of expectations and ensure projects for AGILE are scoped to allow PROGRAM GOALS to be captured for full business value, but PROJECT GOALS are set accordingly to meet expectations and the contract (SOW) language. It is important that we “coach/mentor” our customers, as we are and will be their trusted advisors.

AGILE Efforts:

AGILE uses the concept of “sprints”. Sprints are minimal of two (2) week durations where business and/or functional value is delivered. This value is transparent and viewable by all project members.

Examples: This could be a solution’s base install, an integration between two (2) solutions, business use-case 1 has been through the customer quality assurance team and validated, twenty (20) business use-cases have been migrated from dev to test to prod.

Why we care? AGILE and DEV-OPS Rapid Delivery

Ad-hoc

- **Spin Discs** [Takes 2-3 weeks per solution]
- Challenge(s): Lead time for H/W (Customer physical / virtual) - BEFORE any architect assigned and before DESIGN started.

Prescriptive Choices for AGILE

- CLI aka Silent Install [initial effort high; lower effort in next env.]
 - This process is flexible to include NOT ONLY SILO, but Solution Integration AND Business Logic Releases
 - This process feeds into DEV-OPS development and management.
- **Dev-Ops Processes / Methodology**
 - CA Solutions & Processes
 - **CA Express** (Nolio via the AMS Cloud; require network access to push pre-define CA Express Packages)
 - Validate pre-built package exists with current release of solution(s).
 - If not, request CA Express team build or update packages.
 - Customer Dev-Ops
 - **Chef** (Not full dev-ops; but uses monitoring of "select" file to execute pre-built CLI processes; mount pts, OS lib, CA solutions, etc)
 - Etc (whatever the customer has skill set in and ownership of)
- **SecureCenter Appliance** (Uses docker containers; pick your app)
 - Master Node + Children Nodes
 - Requires/Needs "sidecar" to manage configurations unique to customer
 - Analog: JAVA (fixed/static) = CA APPLICATION AND the JVM (dynamic) = Business logic + configuration deltas
 - <https://github.com/ca-imag/vapp-config-forwarding>
 - Still in beta, but expect this to be a very rapid solution to meet top high value use-cases for "initial land and grab" approach to beat other vendors in sales cycle.

BOM (build-of-materials)

- Predecessors - (Virtual/Physical Servers; OS; Network; Services Accounts; Databases)
- 3rd party licenses
 - Keep track of; regardless of any of the above approaches; impacts AGILE, Go-Live and R&O.

Factory Model

- Set expectations of changing old methods to newer rapid methods.
 - Requirement: Enforcement of build standards
- Impact: Update of existing customer systems to open standards.

Goals

- Increase knowledge and awareness of dev-ops via CLI (command line interface) processes; and to allow migration of processes to any existing commercial dev-ops solution.
 - CA Express (Nolio) with use of CLI “actions” (or use of other hi-value “actions”)
 - <http://www.ca.com/us/collateral/videos/na/ca-express-install-introduction.aspx>
 - www.ca.com/us/~media/Files/ServiceOfferings/ca-express-install-implementation-services.pdf?intcmp=searchresultclick&resultnum=1
 - Chef (<https://www.chef.io/solutions/devops/>)
 - Ansible (<http://www.redhat.com/en/about/press-releases/red-hat-acquire-it-automation-and-devops-leader-ansible>)
- Increase knowledge and awareness of various configurations of clustering methodologies for upper application, mid application, and data tiers.
- Clarify steps at each tier, to remove FUD (fear-uncertainty-doubt) about “black-box” actions performed by Wizard installers. (What are they doing? If we know, then we will become better “troubleshooting” experts)
- Streamline process to deploy RHEL JBOSS EAP (Wildfly) Cluster(s)
- Identify the GAP and point-of-diminished returns versus value for automation

Name : 03IDM-350-Install JDK

Type : Run Command Line

Input values Output values Properties

EXAMPLE OF CONVERSION OF CLI TO A DEV-OPS SOLUTION

Input name		value
* Command Line String (S... Work Directory (String) Environment Variables Na... Environment Variables Valu... Wait For Process To Finish ... Time Out Duration (Long) Std Out File Path (String) Std Err File Path (String) Overwrite Files (Boolean) Expected Return Value (Int... Success Return List (Boole... Expected Return Values (In...	<pre>ms\Java\jre1.7.0_45_x64 /INSTALLDIR=<IDM_INSTALL_DRIVE_LETTER>\CAIDM\Programs\Java\jdk1.7.0_45_x64 /INSTALLDIR=<IDM_INSTALL_DRIVE_LETTER>\CAIDM\Programs\Java\jre1.7.0_45_x64 /INSTALLDIR=<IDM_INSTALL_DRIVE_LETTER>\CAIDM\Programs\Java\jdk1.7.0_45_x64</pre>	

Expression editor

Edit expression
Add, edit and remove text and parameters from this expression.

```
jdk-7u45-windows-x64.exe /s
/INSTALLDIRPUBJRE=<IDM_INSTALL_DRIVE_LETTER>\CAIDM\Programs\Java\jre1.7.0_45_x64
/INSTALLDIR=<IDM_INSTALL_DRIVE_LETTER>\CAIDM\Programs\Java\jdk1.7.0_45_x64
```

Save Cancel

Description

⚠ These values are effective only in this containing Flow or Process.

Save

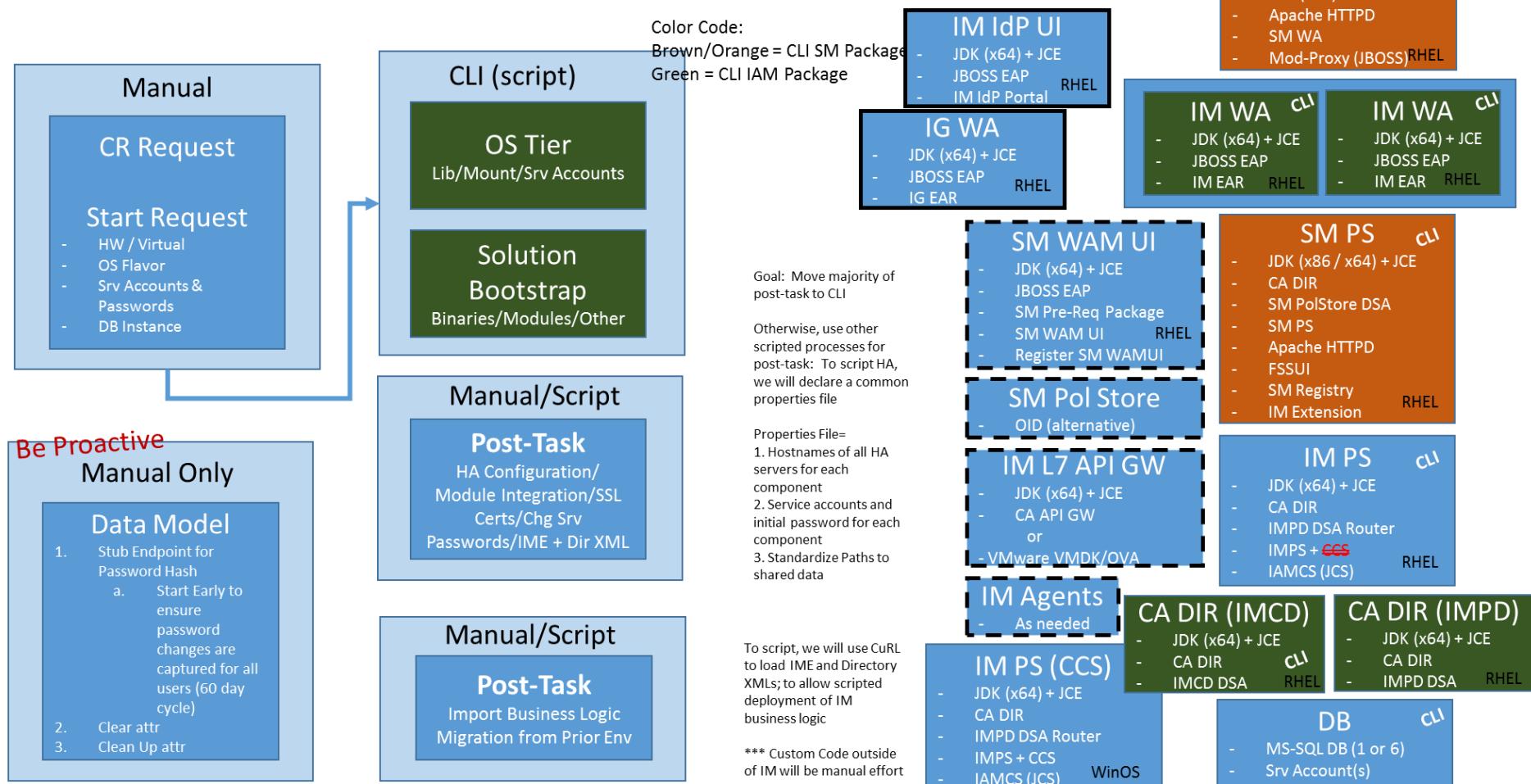
Cancel

EXAMPLE: Installing Java JDK via Command Line Action via CA Express (Nolio)

```
jdk-7u45-windows-x64.exe /s /INSTALLDIRPUBJRE=E:\Programs\Java\jre1.7.0_45_x64 /INSTALLDIR=E:\Programs\Java\jdk1.7.0_45_x64 /* E:\temp\setup-both-%datestr%.log
```



Gap View: Auto (Dev-Ops/Script) versus Manual Efforts



Sandbox Example

Vmware Install



Adobe Acrobat
Document

Centos 7.x Minimal ISO Install [http://isoredirect.centos.org/centos/7/isos/x86_64/]
ftp://ftp.ussg.iu.edu/linux/centos/7/isos/x86_64/CentOS-7-x86_64-Minimal-1503-01.iso 636MB

OS Mount Point
/ (root) 20 GB & (SWAP SPACE of tmpfs /tmp 4GB)
/opt/CA [/opt/CA/media] 60 GB

I:root p:P\$ssword01

Hostname = sandbox01 sandbox01.lab.dom sandbox02

Note: add in 2nd hostname to /etc/hosts to allow testing for HA configurations for DNS resolvable addresses

Network 192.168.202.129

Glossary:

IM WS = CA Identity Manager Web Server

IM WA = CA Identity Manager Web Application Server (J2EE)

IM IdP UI = CA Identity Portal (aka SIGMA on a J2EE)

IG WA = CA Identity Governance Web Application Server (J2EE)

SM PS = CA SSO Policy Server (aka CA SiteMinder PS)

IM PS = CA Identity Manager Provisioning Server

IAMCS = CA Identity Manager Java Connector Server

CCS = CA Identity Manager C++ Connector Server (not available for Linux/Unix)

CA DIR IMCD = CA Directory with Corporate User store for IM

CA DIR IMPD = CA Directory with Provisioning Directory for IM

DB = Oracle Database for IM, IG, IdP Object Stores

RHEL = Red Hat Enterprise License Operating System (OS)

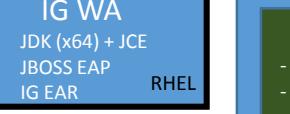
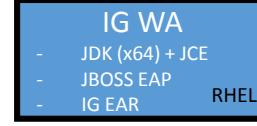
JDK = Oracle Java (JDK edition)

JCE = Oracle Java Crypto Encryption Library (unlimited)

DSA = CA Directory System Agent (an instance of a x500 directory)

Apache HTTPD = Apache Web Server (front end for J2EE servers with load balancing)

JBOSS EAP = Red Hat Enterprise License version of JBOSS J2EE Web Application Server



IM WS

- JDK (x64) + JCE
- Apache HTTPD
- SM WA
- Mod-Proxy (JBoss) RHEL

IM WA

- JDK (x64) + JCE
- JBOSS EAP
- IM EAR RHEL

IM WA

- JDK (x64) + JCE
- JBOSS EAP
- IM EAR RHEL

SM PS

- JDK (x86 / x64) + JCE
- CA DIR
- SM PolStore DSA
- SM PS
- Apache HTTPD
- FSSUI
- SM Registry
- IM Extension RHEL

IM PS

- JDK (x64) + JCE
- CA DIR
- IMPD DSA Router
- IMPS + ~~CCS~~
- IAMCS (JCS) RHEL

CA DIR (IMCD)

- JDK (x64) + JCE
- CA DIR
- IMCD DSA RHEL

CA DIR (IMPD)

- JDK (x64) + JCE
- CA DIR
- IMPD DSA RHEL

DB

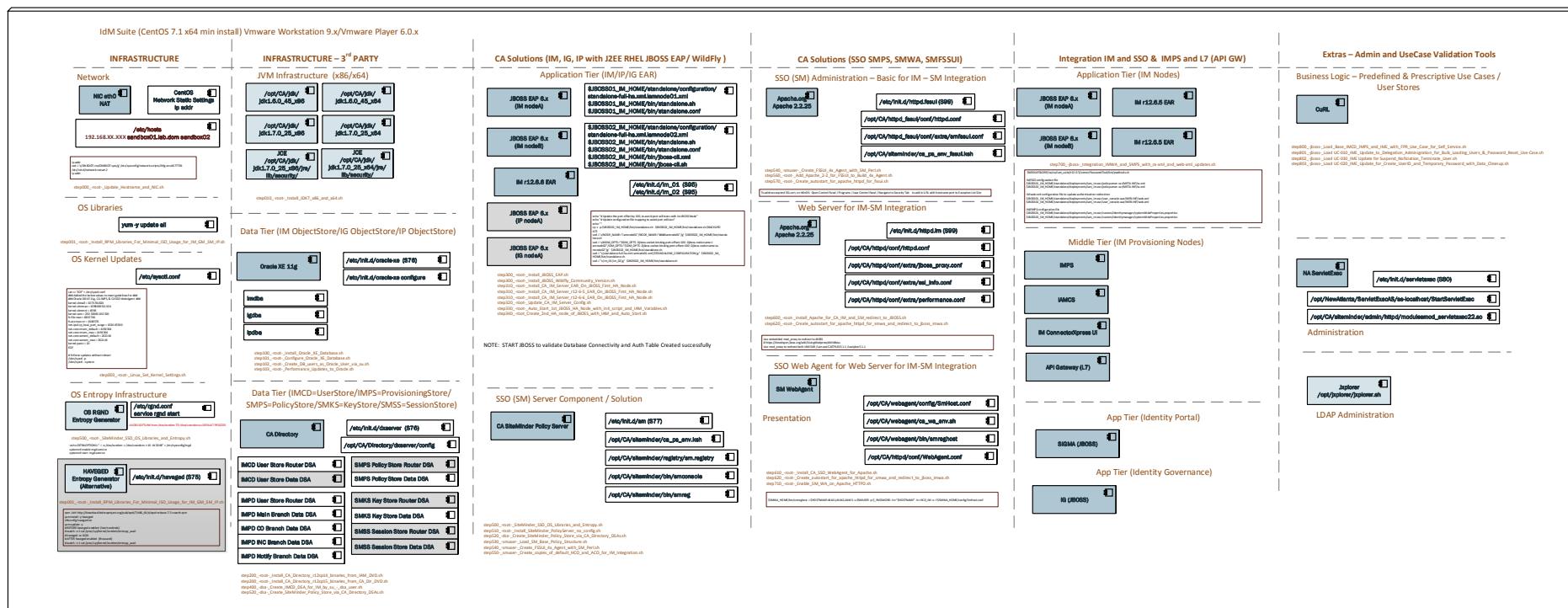
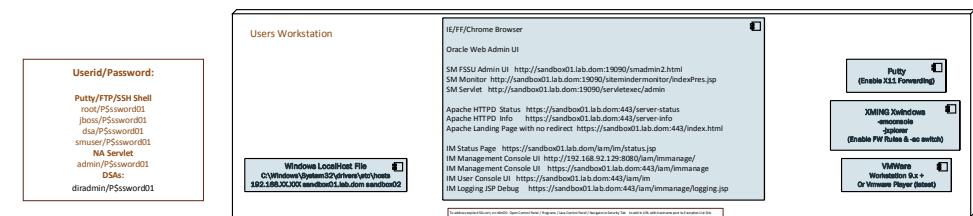
- Oracle DB (6)
- Srv Account(s) RHEL

Sandbox Example

PDF of sandbox



**Adobe Acrobat
Document**



Agenda

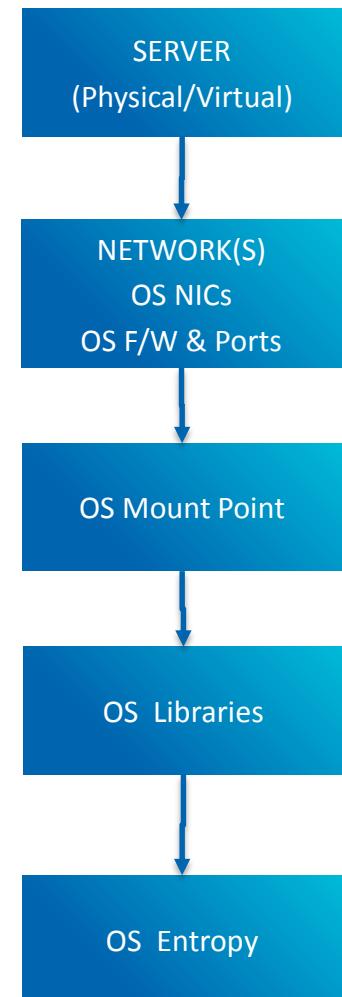
- Review architect decisions on OS, Databases, 3rd party software
- Review architect decision on installation build methodology
 - Bottom-Up Approach:
 - Server (Virtual/Physical)
 - OS / Network
 - Mount Points
 - OS Libraries / Service Accounts
 - Installations of base components
 - Post-install Efforts
 - Validation
 - Integration
 - Business Logic Expansion
- CLI Install Examples

Architecture Decisions: Components

- Vmware Node Installation
 - One (1) node to allow validation of co-location of components and what disk space/memory is required to meet minimal use for sandbox configurations.
 - Two (2) mount points: OS only under / and all software under /opt/CA (media and installs)
- OS Selection: CentOS r7.x Minimal Install ISO
 - The selection of the minimal install ISO allows validation of OS libraries required by 3rd party and CA solution with regards to bookshelf/wiki notes.
 - CentOS allows binary compatible with the supported version of RHEL OS. While the OS and version are not on the support matrix, they will allow validation steps to still occur; and allow use of the community license of CentOS.
- J2EE: JBOSS EAP or JBOSS WildFly
 - Developer license of JBOSS EAP and/or community version of JBOSS Wildfly
 - Java: Oracle Java JDK 1.6 (x86/x64) & 1.7 (x86/x64) + JCE 1.6/1.7
- Database: Oracle XE 11g
 - Developer license of Oracle Database with 4GB Ram & 11 GB Disk restrictions.
- Directory: CA Directory r12.x
 - CA Directory will be used for the userstore, and SSO policies stores

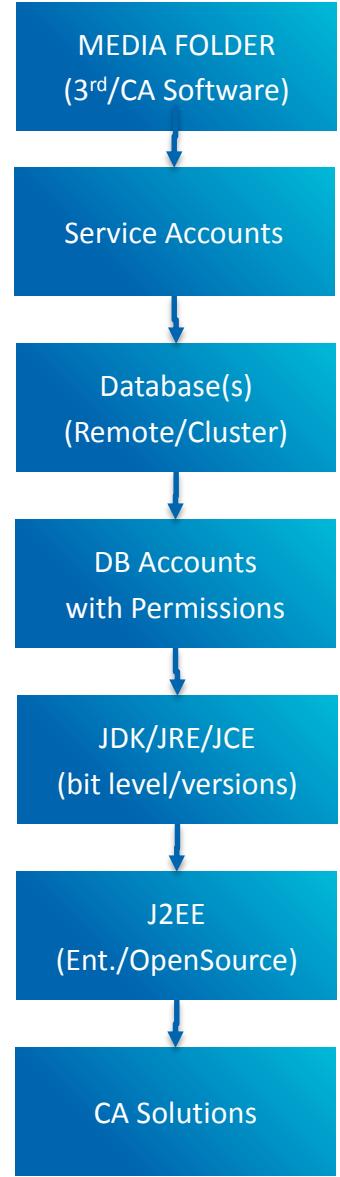
Architecture Decision: Bottom-Up Approach 1 of 2

- To meet the expected use of the CLI processes for migration into a commercial dev-ops solution, the approach will attempt to emulate the same behavior.
- Server(s) Acquisition
 - The servers are assumed to be compatible with the solution's support matrices and to have the supported OS.
 - Most solution(s) are able to adequately run on 2-4 vCPU with 8-32 GB RAM.
 - Disk space may be from 10-100 GB.
 - The sandbox will attempt to run all solutions within a 2 vCPU with 8 GB RAM on 80 GB disk (20 GB for OS and 60 GB for data)
 - OS Mount Point
 - The majority of the solutions will deploy under /opt/CA on a Linux/UNIX OS.
 - This mount point will be chosen for all CA and 3rd party solutions.
 - OS Libraries
 - OS libraries that are identified from literature, the installers, debug steps will be pre-loaded as a separate script.
 - OS Entropy
 - OS Entropy will be requested to be deployed prior to any installation via the OS RGND service or 3rd party RGND solutions.



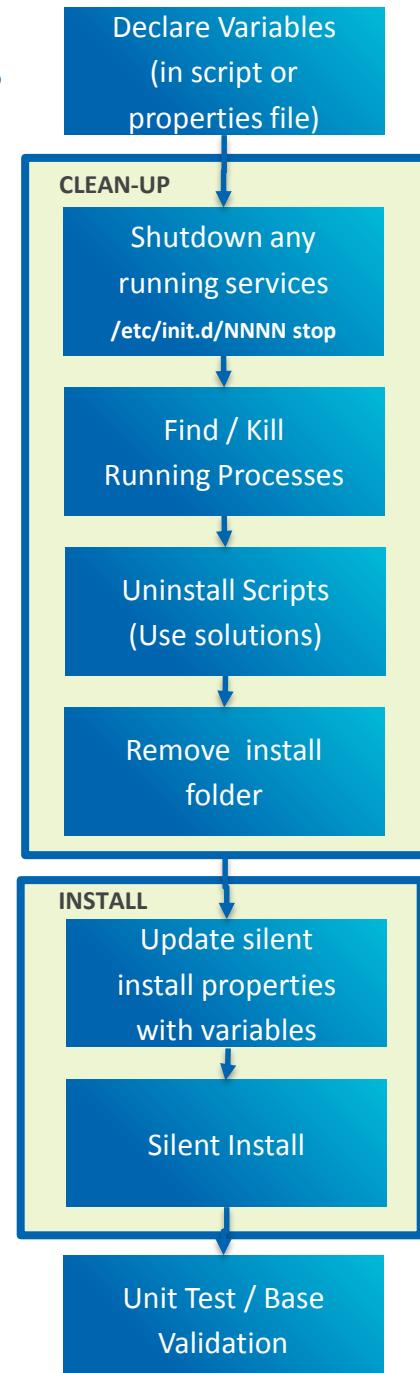
Architecture Decision: Bottom-Up Approach 2 of 2

- 3rd Party & CA solution Installations
 - Any software declared as a predecessor solution, will be installed in the correct order to avoid re-work effort.
 - Any software solution that allow peer and/or cluster setup; **will be deployed as a cluster member of 1; to allow future “stacks” to be integrated rapidly; and to allow a solution to scale horizontally.**
 - Any co-location of software components, on the same server, will be isolated by folder, network ports, and JBOSS instances.
 - Any software installation that require pre-installation steps will be identified and a process will be built via CLI to manage the general use-case of deployment and integration.
 - Any software installation that require input for service accounts; passwords; or other variables will be address with an input properties file and/or script variables that will be defined at the header of the script.
 - Any software installation that requires non-root account to install, will be identified and/or updated to use sudo access to execute as the non-root account.
 - Any software wizard installation that is not clear on “changes” or delta to the install base, will be execute several times to capture the deltas.
 - Process to capture install deltas (file based)
 - Install 1st time with interactive console mode.
 - tar/zip up the install folder
 - Install 2nd time with interactive console mode
 - Tar/zip up the install folder
 - Copy both files to a workstation/laptop and use a file/folder compare tool (Beyond Compare) to identify the file /folder deltas
 - Update software installation silent install scripts to use variables to manage the deltas.



Architecture Decision: Installation Processes

- All solutions will be installed with CLI processes that may be executed as root or a non-root account, as needed.
- Interaction with Web Server/Web Application Servers will be managed with the CLI process of CuRL.
- Bottom-Up approach will be used, where assumption of pre-installed components will be declared.
- Installations scripts will follow the methodology:
 - Declare properties file and/or variables to be used.
 - Uninstall any prior installation
 - Execute shutdown script/process (if exists)
 - Execute OS kill command (search for running processes)
 - Execute uninstall script (provided by solution)
 - Remove installation folder
 - Install solution
 - Update silent install input file based on properties and/or script variables
 - Install solution via silent install input file
 - Perform base validation checks (query on files/folders/running processes)



Architecture Decision: Post Install / Integration

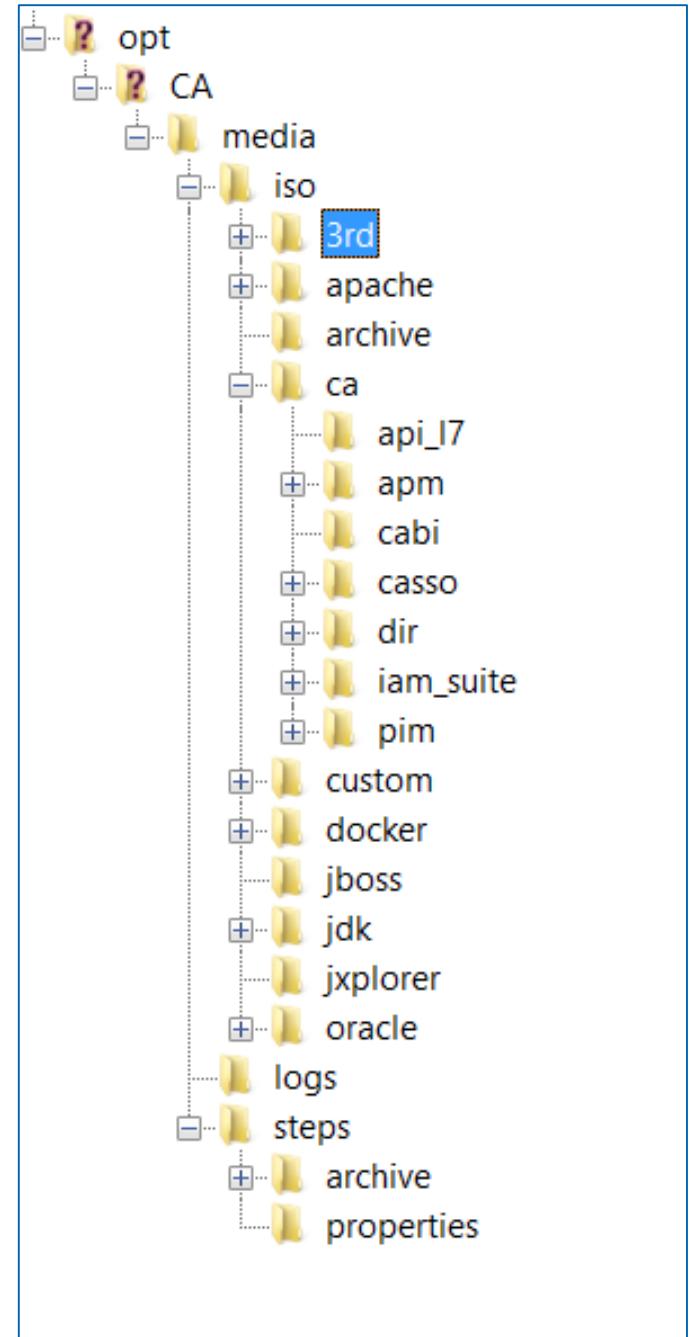
- Realized & set/manage the expectation that there is a **point-of-diminished returns** for value of automating installations.
 - 1st Question: Do we understand task A intent (requirements/business logic)?
 - 2nd Question: Can task A be automated.
 - 3rd Question: Should task A be automated.
- The post install and/or migration integration steps between components where the components reside on separate servers.
 - Otherwise the dev-ops process needs to be aware of the remote IP/hostnames of the cluster members.
 - May be pre-defined in 3rd Party & CA solution Installations
 - Note: If “dummy hostnames” are to be used, ensure they are mapped to the current hostname to have them resolvable by DNS lookup.
- Business logic unique to each customer may be pre-defined by use-case
 - The assumption is that well-defined business logic unique to each solution has been pre-built for consumption.
- Service Accounts’ Passwords that were hardcoded as part of the silent install scripts will need to be **immediately changed** to new secure passwords prior to any **production** roll-out.

CLI EXAMPLES

- The folder structure for the sandbox is shown within the image to the side.
- Embedded with the slides and with this slide are the tested CLI examples for 3rd party and CA solutions.
- The slide views are sub-sets of the full scripts that focus on the intent of scripts; to avoid overwhelming the display use of each slide.
- The full / working scripts have been attached for reference use.
 - The scripts may be updated as needed.



H:\sandbox\
0-19\IAM_Suite_CI



CLI Examples: OS/JDK/Oracle DB

■ OS (Libraries/Mount Point/Entropy/Kernel/Media Folder)

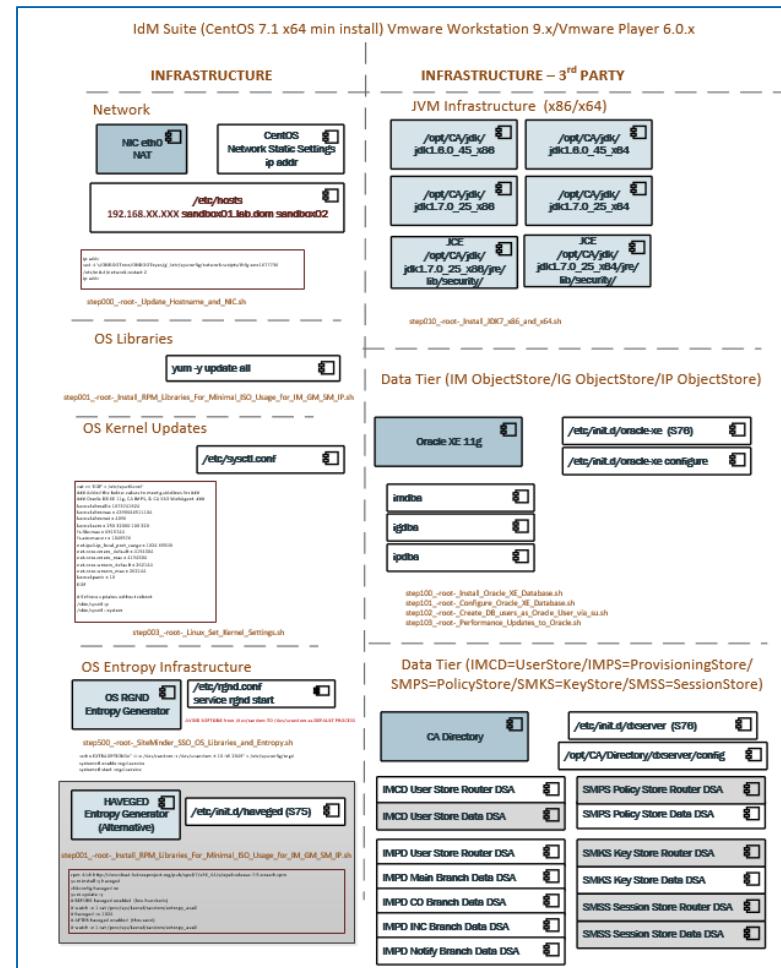
- step000_root_Update_Hostname_and_NIC.sh
- step001_root_Install_RPM_Libraries_For_Minimal_ISO_Usage_for_IM_GM_SM_IP.sh
- step002_root_Make_Media_Folders_for_Installations.sh
- step003_root_Linux_Set_Kernel_Settings.sh
- step004_root_Linux_Set_IPTable_Firewall_Ports.sh

■ Java JDK / JCE

- step010_root_Install_JDK7_x86_and_x64.sh

■ Oracle XE 11g

- step020_root_Install_Oracle_XE_Database.sh
- step021_root_Configure_Oracle_XE_Database.sh
- step022_root_Create_DB_users_as_Oracle_User_via_su.sh
- step023_root_Performance_Updates_to_Oracle.sh



CLI Example: step000_root_Update_Hostname_and_NIC

```
BACKUPDATE=`date +%Y%m%d_%H%M%S_%N`  
  
_HOSTNAME=sandbox01  
  
_2ND_HOSTNAME=sandbox02  
  
_FQDN=sandbox01.lab.dom  
  
echo "#OS 1: Upon 1st start, the NIC is not enabled on boot."  
  
echo "#OS 2: Login as root / P$ssword01"  
  
echo "#OS 3: View current IP Address with: ip addr `ip addr`"  
  
echo "Note: NIC has no ip address and ifconfig is not installed"  
  
echo "#OS 4: Edit sysconfig network script "  
  
cp -r /etc/sysconfig/network-scripts/ifcfg-eno16777736  
/etc/sysconfig/network-scripts/ifcfg-eno16777736.$BACKUPDATE  
  
sed -i 's/ONBOOT=no/ONBOOT=yes/g' /etc/sysconfig/network-  
scripts/ifcfg-eno16777736  
  
echo "#OS 5: Restart network services"  
  
/etc/init.d/network restart 2  
  
echo "#OS 6: View updated ip address: `ip addr`"  
  
echo "#OS 7: Install older network tools to use ifconfig - used by  
some scripts including vmware-tools"  
  
yum -y net-tools
```

```
hostnamectl status  
  
hostnamectl set-hostname $_HOSTNAME  
  
IP_ADDR=`hostname -i`  
  
cp -r -p /etc/hosts /etc/hosts.$BACKUPDATE  
  
echo "$IP_ADDR $_FQDN $_HOSTNAME $_2ND_HOSTNAME" >>  
/etc/hosts  
  
/etc/init.d/network restart 2  
  
grep $_2ND_HOSTNAME /etc/hosts  
  
echo "#OS 9: Make /opt/CA/media folder to contain readme file  
and installation packages"  
  
mkdir -p /opt/CA/media  
  
echo "Look for ssh port: services: dhcpcv6-client ssh"  
  
firewall-cmd --list-all  
  
echo "#OS 11: Copy over scripts and ISO images of software"  
  
echo "#OS 12: Execute the remaining scripts in  
/opt/CA/media/steps"  
  
echo "#OS 13: Shutdown and save vmware image"
```



H:\sandbox\
9-14\steps\step00

CLI Example: step001_root_Install_RPM_Libraries_For_Minimal_ISO_Usage_for_IM_GM_SM_IP



H:\sandbox\
9-14\steps\step00

```
# Install useful and needed OS libraries to the minimal Install of  
CentOS 7.1  
yum install -y zip unzip perl  
yum install -y bind-utils traceroute  
yum install -y ntpdate ntp csh ksh bc  
#### yum install -y system-config-network-tui  
yum install -y setupool system-config-firewall-tui net-tools  
yum install -y system-config-securitylevel  
yum install -y glibc.i686 libX11.i686 libxcb.i686 libXtst.i686  
libXau.i686 libXi.i686 libXext.i686 nss-softokn-freebl.i686  
vsftpd.x86_64 compat-libstdc++-296.i686 libgcc.i686 libidn.i686  
libstdc++.i686 telnet  
yum install -y binutils-2*x86_64* glibc-2*x86_64* nss-softokn-  
freebl-3*x86_64* glibc-2*i686* nss-softokn-freebl-3*i686*  
compat-libstdc++-33*x86_64*  
yum install -y glibc-common-2*x86_64* glibc-devel-2*x86_64*  
glibc-devel-2*i686* glibc-headers-2*x86_64* elfutils-libelf-  
0*x86_64*  
yum install -y elfutils-libelf-devel-0*x86_64* gcc-4*x86_64* gcc-  
c++-4*x86_64* ksh-*x86_64* libaio-0*x86_64* libaio-devel-  
0*x86_64*  
yum install -y libaio-0*i686* libaio-devel-0*i686* libgcc-  
4*x86_64* libgcc-4*i686* libstdc++-4*x86_64* libstdc++-  
4*i686* libstdc++-devel-4*x86_64*  
yum install -y make-3.81*x86_64* numactl-devel-2*x86_64*  
sysstat-9*x86_64* compat-libstdc++-33*i686* compat-libcap*  
unixODBC*  
yum install -y libstdc++* compat-libstdc++-33.i686 compat-  
libstdc++-296.i686 glibc.i686 ksh.x86_64 libgcc.i686 libidn.i686  
yum install -y libstdc++.i686 libX11.x86_64 libXau.x86_64  
libxcb.x86_64 libXext.i686 libXi.i686  
yum install -y libXtst.i686 ncurses-devel.i686 nss-softokn-  
freebl.i686 dos2unix
```

```
yum install -y libgfortran*i686 libgomp*i686 ncurses*i686  
ncurses-libs*i686  
yum install -y expat-devel.i686 libuuid libuuid.i686  
### compat-expat1.i686  
yum install -y rpm-build  
# Update for IMPS r12.6.5 ECS Component libstdc++-libc6.2-2.so.3  
yum install -y  
ftp://ftp.pbone.net/mirror/ftp.centos.org/6.6/os/x86_64/Packages  
/compat-libstdc++-296-2.96-144.el6.i686.rpm  
# Install Entropy Daemon from EPEL software repository  
#  
cat /proc/sys/kernel/random/entropy_avail  
rpm -Uvh  
http://download.fedoraproject.org/pub/epel/7/x86_64/e/epel-  
release-7-5.noarch.rpm  
yum install -y haveged  
chkconfig haveged on  
systemctl enable haveged.service  
systemctl start haveged.service  
#check encryption value  
cat /proc/sys/kernel/random/entropy_avail  
time dd if=/dev/random bs=8 count=1 2> /dev/null | base64  
yum update -y  
  
# BEFORE haveged enabled (low hundreds)  
# watch -n 1 cat /proc/sys/kernel/random/entropy_avail  
# haveged -w 1024  
# AFTER haveged enabled (thousand)  
# watch -n 1 cat /proc/sys/kernel/random/entropy_avail
```

CLI Example: step002_root_Make_Media_Folders_for_Installations



H:\sandbox\
9-14\steps\step00

```
# Make Install Folder for Oracle XE DB & Soft Link  
mkdir /u01 > /dev/null 2>&1  
mkdir -p /opt/CA/db/ > /dev/null 2>&1  
unlink /u01/app > /dev/null 2>&1  
ln -s /opt/CA/db /u01/app  
  
# Make Install Folder for jboss (cluster), java jdk (multiple)  
supporting modules  
mkdir -p /opt/CA/jboss/ip_01 > /dev/null 2>&1  
mkdir -p /opt/CA/jboss/ig_01 > /dev/null 2>&1  
mkdir -p /opt/CA/jboss/im_01 > /dev/null 2>&1  
mkdir -p /opt/CA/jboss/im_02 > /dev/null 2>&1  
mkdir -p /opt/CA/jdk/ > /dev/null 2>&1  
# Update folder permissions to allow execution  
mkdir -p /opt/CA/media
```

```
echo "Copy all ISO media and 3rd party media to /opt/CA/media"  
echo "Execute the following command to reset execution  
permissions"  
  
#####  
find /opt/CA/media/iso -type d -exec chmod o+x {} \;  
find /opt/CA/media/iso -name "*.sh" -exec chmod o+x {} \;  
find /opt/CA/media/iso -name "*.bin" -exec chmod o+x {} \;  
find /opt/CA/media/iso -name setup -exec chmod o+x {} \;  
find /opt/CA/media/iso -name setup64 -exec chmod o+x {} \;  
find /opt/CA/media/iso -name uninstall -exec chmod o+x {} \;  
find /opt/CA/media/iso -name getfqdn -exec chmod o+x {} \;  
find /opt/CA/media/iso -name dxupgradecheck -exec chmod o+x {} \;  
find /opt/CA/media/iso -name install_base -exec chmod o+x {} \;  
find /opt/CA/media/iso -name uninstall_AC -exec chmod o+x {} \;  
find /opt/CA/media/iso -name install_calic -exec chmod o+x {} \;  
find /opt/CA/media/iso -name customize_eac_rpm -exec chmod o+x {} \;  
find /opt/CA/media/iso -name smreg -exec chmod o+x {} \;  
find /opt/CA/media/iso -name XPSSecurity -exec chmod o+x {} \;  
find /opt/CA/media/iso -name "ca-sm-installer" -exec chmod o+x {} \;  
find /opt/CA/media/iso -name kernparmchk.Linux -exec chmod o+x {} \;  
find /opt/CA/media/iso -name Utf8toNative.Linux -exec chmod o+x {} \;
```

CLI Example: step003_root_Linux_Set_Kernel_Settings



H:\sandbox\
9-14\steps\step00

```
echo "### Backup current/default kernel value strings in  
/etc/sysctl.conf file ####"  
/sbin/sysctl -a > /etc/sysctl_-a.prior.$BACKUPDATE  
cp -r /etc/sysctl.conf /etc/sysctl.conf.$BACKUPDATE  
  
echo "### Update kernel default value strings by adding entries to  
/etc/sysctl.conf file ####"  
  
cat << 'EOF' > /etc/sysctl.conf  
### Added the below values to meet guidelines for ###  
### Oracle DB XE 11g, CA IMPS, & CA SSO WebAgent ###  
kernel.shmall = 1073741824  
kernel.shmmax = 4398046511104  
kernel.shmmni = 4096  
kernel.sem = 250 32000 100 320  
fs.file-max = 6815744  
fs.aio-max-nr = 1048576  
net.ipv4.ip_local_port_range = 1024 65500  
net.core.rmem_default = 4194304  
net.core.rmem_max = 4194304  
net.core.wmem_default = 262144  
net.core.wmem_max = 262144  
kernel.panic = 10  
EOF  
  
# Enforce updates without reboot  
/sbin/sysctl -p  
/sbin/sysctl --system  
  
echo "### cat /etc/sysctl.conf ####"  
cat /etc/sysctl.conf
```

```
echo "### Update ulimits hard and soft for Oracle and IMPS shell  
accounts ####"  
cp -r /etc/security/limits.conf  
/etc/security/limits.conf.$BACKUPDATE  
cat << EOF >> /etc/security/limits.conf  
imps hard nofile 4096  
imps soft nproc 4096  
oracle soft nproc 2047  
oracle hard nproc 16384  
oracle soft nofile 1024  
oracle hard nofile 65536  
* soft core unlimited  
EOF  
echo "### Update /etc/profile for ulimit settings for Oracle & IMPS  
shell accounts ####"  
cp -r /etc/profile /etc/profile.oracle.$BACKUPDATE  
cat << EOF >> /etc/profile  
if [ \$USER = "oracle" ]; then  
    if [ \$SHELL = "/bin/bash" ]; then  
        ulimit -n 65536  
    else  
        ulimit -u 16384 -n 65536  
    fi  
    umask 022  
fi  
if [ \$USER = "imps" ]; then  
    if [ \$SHELL = "/bin/bash" ]; then  
        ulimit -n 65536  
    else  
        ulimit -u 16384 -n 65536  
    fi  
    umask 022  
fi
```

CLI Example: step004_root_Linux_Set_IPTable_Firewall_Ports



H:\sandbox\

9-14\steps\step00

```
# Note: CentOS 7 uses FirewallD  
BACKUPDATE='date +%Y%m%d_%H%M%S_%N'  
MEDIAFOLDER=/opt/CA/media  
echo "#FW 1. Delete all existing rules"  
firewall-cmd --list-all > $MEDIAFOLDER/firewall-  
cmd.$BACKUPDATE  
/sbin/service iptables save  
iptables-save > /etc/sysconfig/iptables.$BACKUPDATE  
iptables-save > $MEDIAFOLDER/iptables.$BACKUPDATE  
iptables -F  
echo "#FW 2. Set default chain policies to drop rules"  
iptables -P INPUT DROP  
iptables -P FORWARD DROP  
iptables -P OUTPUT DROP  
echo "#FW 3. MultiPorts (Allow incoming SSH, HTTP, and  
HTTPS)"  
iptables -A INPUT -i eno16777736 -p tcp -m multiport --dports  
22,25,80,443,1521,7070,8080,8443,8180,8543 -m state --state  
NEW,ESTABLISHED -j ACCEPT  
iptables -A OUTPUT -o eno16777736 -p tcp -m multiport --  
sports 22,25,80,443,1521,7070,8080,8443,8180,8543 -m state --  
state ESTABLISHED -j ACCEPT  
iptables -A INPUT -i eno16777736 -p tcp -m multiport --dports  
9090,20391,20394,20396,20398,20404,41389,48080 -m state --  
state NEW,ESTABLISHED -j ACCEPT  
iptables -A OUTPUT -o eno16777736 -p tcp -m multiport --  
sports 9090,20391,20394,20396,20398,20404,41389,48080 -m  
state --state ESTABLISHED -j ACCEPT  
echo "#FW 4. Ping from inside to outside"  
iptables -A OUTPUT -p icmp --icmp-type echo-request -j ACCEPT  
iptables -A INPUT -p icmp --icmp-type echo-reply -j ACCEPT
```

```
echo "#FW 5. Ping from outside to inside"  
iptables -A INPUT -p icmp --icmp-type echo-request -j  
ACCEPT  
iptables -A OUTPUT -p icmp --icmp-type echo-reply -j  
ACCEPT  
echo "#FW 6. Allow loopback access"  
iptables -A INPUT -i lo -j ACCEPT  
iptables -A OUTPUT -o lo -j ACCEPT  
echo "#FW 7. Allow outbound DNS"  
iptables -A OUTPUT -p udp -o eno16777736 --dport 53 -j  
ACCEPT  
iptables -A INPUT -p udp -i eno16777736 --sport 53 -j ACCEPT  
echo "#FW 8. Prevent DoS attack"  
iptables -A INPUT -p tcp --dport 80 -m limit --limit 25/minute --  
limit-burst 100 -j ACCEPT  
echo "#FW 9. Log dropped packets"  
iptables -N LOGGING  
iptables -A INPUT -j LOGGING  
iptables -A LOGGING -m limit --limit 2/min -j LOG --log-prefix  
"IPTables Packet Dropped: " --log-level 7  
iptables -A LOGGING -j DROP  
echo "#FW 10. Stop / Start Process"  
/sbin/service iptables save  
iptables-save > /etc/sysconfig/iptables  
/sbin/service iptables restart  
iptables -L INPUT  
/sbin/service iptables restart  
echo "FW 11. Use #### FirewallID #####"  
#/sbin/service firewalld start
```

```
firewalld  
firewall-cmd --zone=public --permanent --add-service=dns  
firewall-cmd --zone=public --permanent --add-service=http  
firewall-cmd --zone=public --permanent --add-service=https  
firewall-cmd --zone=public --permanent --add-service=smtp  
firewall-cmd --zone=public --permanent --add-service=ssh  
firewall-cmd --zone=public --permanent --add-port=1521/tcp  
firewall-cmd --zone=public --permanent --add-port=7070/tcp  
firewall-cmd --zone=public --permanent --add-port=8080/tcp  
firewall-cmd --zone=public --permanent --add-port=8443/tcp  
firewall-cmd --zone=public --permanent --add-port=8180/tcp  
firewall-cmd --zone=public --permanent --add-port=8543/tcp  
firewall-cmd --zone=public --permanent --add-port=9090/tcp  
firewall-cmd --zone=public --permanent --add-  
port=20391/tcp  
firewall-cmd --zone=public --permanent --add-  
port=20394/tcp  
firewall-cmd --zone=public --permanent --add-  
port=20396/tcp  
firewall-cmd --zone=public --permanent --add-  
port=20398/tcp  
firewall-cmd --zone=public --permanent --add-  
port=20404/tcp  
firewall-cmd --zone=public --permanent --add-  
port=41389/tcp
```

```
echo "# reload firewall rules:"  
firewall-cmd --reload
```

```
echo "# View firewall rules #"  
firewall-cmd --list-all
```

CLI Example: step010_root_ Install_JDK7_x86_and_x64



H:\sandbox\
9-14\steps\step01\

```
STARTTIME=`date`  
MEDIA_HOME=/opt/CA/media/iso/jdk  
INSTALL_PATH=/opt/CA/jdk  
JDK_VERSION=jdk1.7.0_71  
JDK_GZ_NAME_X86=jdk-7u71-linux-i586.gz  
JDK_GZ_NAME_X64=jdk-7u71-linux-x64.gz  
mkdir -p "$INSTALL_PATH"  
  
echo "### Clean up prior installation of x86 JDK ###"  
cd $MEDIA_HOME  
rm -rf "$MEDIA_HOME/$JDK_VERSION"  
rm -rf "$INSTALL_PATH/$JDK_VERSION"_x86  
tar -zxf "$MEDIA_HOME/$JDK_GZ_NAME_X86" >/dev/null 2>&1  
mv "$MEDIA_HOME/$JDK_VERSION"  
"$INSTALL_PATH/$JDK_VERSION"_x86  
  
echo "### Clean up prior installation of x64 JDK ###"  
rm -rf "$MEDIA_HOME/$JDK_VERSION"  
rm -rf "$INSTALL_PATH/$JDK_VERSION"_x64  
tar -zxf "$MEDIA_HOME/$JDK_GZ_NAME_X64" >/dev/null 2>&1  
mv "$MEDIA_HOME/$JDK_VERSION"  
"$INSTALL_PATH/$JDK_VERSION"_x64  
  
echo "### Check status of JDK 7 x86 ###"  
file "$INSTALL_PATH/$JDK_VERSION"_x86/bin/java  
  
echo "### Check status of JDK 7 x64 ###"  
file "$INSTALL_PATH/$JDK_VERSION"_x64/bin/java  
  
echo "### Update JCE libraries for JDK 7 x86 and x64 ###"  
cd $MEDIA_HOME/jce_7  
cp -r -p *.jar "$INSTALL_PATH/$JDK_VERSION"_x86/jre/lib/security  
cp -r -p *.jar "$INSTALL_PATH/$JDK_VERSION"_x64/jre/lib/security
```

```
echo "### JCE Test (viewable on console) ###"  
echo "### Check JAVA JCE Encryption for Unlimited Strength ###"  
cat << EOF > $MEDIA_HOME/CipherTest.java  
import javax.crypto.Cipher;  
class CipherTest {  
    public static void main(String args[]) {  
        try {  
            int maxKeyLen = Cipher.getMaxAllowedKeyLength("AES");  
            if(maxKeyLen < 256) {  
                System.out.println("FAILED: Max key length too small! (" +  
maxKeyLen + ".);");  
            } else {  
                System.out.println("PASSED: Max key length OK! (" +  
maxKeyLen + ".);");  
            }  
        } catch(Exception e) {  
            System.out.println("FAILED: No AES found!");  
        }  
    }  
}  
EOF  
  
cd $MEDIA_HOME  
echo "### JDK x86 Cipher Test with Unlimited JCE ###"  
"$INSTALL_PATH/$JDK_VERSION"_x86/bin/javac CipherTest.java  
"$INSTALL_PATH/$JDK_VERSION"_x86/bin/java CipherTest  
echo "#####"  
echo "### JDK x64 Cipher Test with Unlimited JCE ###"  
"$INSTALL_PATH/$JDK_VERSION"_x64/bin/javac CipherTest.java  
"$INSTALL_PATH/$JDK_VERSION"_x64/bin/java CipherTest  
chown -R nobody:nobody /opt/CA/jdk  
echo "Started at $STARTTIME"  
echo "Done at `date`"
```

CLI Example: step020_root_Install_Oracle_XE_Database



H:\sandbox\
9-14\steps\step02\

```
BACKUPDATE=`date +%Y%m%d_%H%M%S_%N`  
MEDIAFOLDER=/opt/CA/media/iso  
PROPERTIESFOLDER=/opt/CA/media/steps/properties  
_PASSWORD=Password01  
USER=oracle  
GROUP=dba  
ORACLE_BASE=/u01/app/oracle  
ORACLE_HOME=${ORACLE_BASE}/product/11.2.0/xe  
ORACLE_SID=XE  
_ORA_HTTP_PORT=9090  
_ORA_DB_PORT=1521  
  
##### Add library needed by oracle startdb.sh script  
yum -y install xsetroot > /dev/null 2>&1  
  
# Ensure Oracle Base is owned by Oracle before  
# stopping the running files  
chown -R $USER:$GROUP /opt/CA/db > /dev/null  
2>&1  
chown -R $USER:$GROUP /var/tmp/.oracle >  
/dev/null 2>&1  
chown -R $USER:$GROUP /u01 > /dev/null 2>&1  
chown -R $USER:$GROUP /u01/app/oracle/product >  
/dev/null 2>&1  
  
# Stop Oracle if it is running  
/etc/init.d/oracle-xe stop > /dev/null 2>&1  
# Kill any remaining Oracle processes if it is running  
# Reset timeout of network services to ensure no issue  
on reinstall in less than 60 seconds  
#echo 1 > /proc/sys/net/ipv4/tcp_fin_timeout  
  
kill -9 `ps -ef | grep oracle | grep -v grep | awk '{print  
$2}'` > /dev/null 2>&1
```

```
# Note: For freq run of this script an open TCP6 port in  
waiting mode will # fail a re-configure of the solution  
netstat -an | grep 1521  
  
# Uninstall prior Oracle  
#rpm -ev oracle-xe-11.2.0-1.0.x86_64  
rpm -qa | grep oracle  
rpm -e oracle-xe > /dev/null 2>&1  
rpm -qa | grep oracle  
sleep 2  
# Remove remaining folders  
rm -rf /u01/app/oracle > /dev/null 2>&1  
rm -rf /var/tmp/.oracle > /dev/null 2>&1  
  
# Create Oracle User & Group  
/usr/sbin/userdel -r oracle > /dev/null 2>&1  
/usr/sbin/groupadd oinstall > /dev/null 2>&1  
/usr/sbin/groupadd dba > /dev/null 2>&1  
/usr/sbin/useradd -m -g oinstall -G dba oracle >  
/dev/null 2>&1  
id oracle  
  
# Update Oracle XE Path  
mkdir -p /u01/app/oracle > /dev/null 2>&1  
mkdir -p /var/tmp/.oracle > /dev/null 2>&1  
export ORACLE_BASE=/u01/app/oracle  
chmod -R 775 /u01  
chmod -R 775 /u01/app/oracle  
chown -R $USER:$GROUP /opt/CA/db > /dev/null  
2>&1  
chown -R $USER:$GROUP /u01 > /dev/null 2>&1  
chown -R $USER:$GROUP /u01/app/oracle/product >  
/dev/null 2>&1  
chown -R $USER:$GROUP $MEDIAFOLDER/oracle >  
/dev/null 2>&1  
chown -R $USER:$GROUP /var/tmp/.oracle > /dev/null  
2>&1
```

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```
# Install OracleXE  
rpm -ivh  
$MEDIAFOLDER/oracle/oracle_xe/Disk1/oracle-xe-  
11.2.0-1.0.x86_64.rpm  
du -hs /u01/app/oracle/  
# Add sleep to ensure installation and configuration do  
not impact each other  
# on a fast system - seems to happen intermittently  
/etc/init.d/oracle-xe status  
ps -ef | grep -v grep | grep oracle  
netstat -an | grep 1521  
netstat -an | grep 9090  
sleep 5  
echo ""  
echo "# Ensure no open processes in TIME_WAIT state  
or other "  
echo "# of oracle or port $_ORA_DB_PORT or port  
$_ORA_HTTP_PORT"  
echo "# are in use with the command(s)"  
echo "# netstat -an | grep $_ORA_DB_PORT"  
echo "# netstat -an | grep $_ORA_HTTP_PORT"  
echo "# BEFORE running the configuration step to avoid  
a conflict"  
  
chown -R $USER:$GROUP /opt/CA/db > /dev/null  
2>&1  
chown -R $USER:$GROUP /u01 > /dev/null 2>&1  
chown -R $USER:$GROUP /u01/app/oracle > /dev/null  
2>&1  
chown -R $USER:$GROUP /u01/app/oracle/product >  
/dev/null 2>&1  
chown -R $USER:$GROUP /var/tmp/.oracle > /dev/null  
2>&1
```

CLI Example: step021_root_Configure_Oracle_XE_Database



H:\sandbox\
9-14\steps\step02

```
BACKUPDATE=`date +%Y%m%d_%H%M%S_%N`  
MEDIAFOLDER=/opt/CA/media/iso  
PROPERTIESFOLDER=/opt/CA/media/steps/properties  
_PASSWORD=Password01  
USER=oracle  
GROUP=dba  
ORACLE_BASE=/u01/app/oracle  
ORACLE_HOME=${ORACLE_BASE}/product/11.2.0/xe  
ORACLE_SID=XE  
_ORA_HTTP_PORT=9090  
_ORA_DB_PORT=1521  
  
# Source Oracle Paths  
. $ORACLE_HOME/bin/oracle_env.sh  
  
# Ensure Oracle Base is owned by Oracle before  
stopping the running files  
chown -R oracle:dba /opt/CA/db  
cd $ORACLE_HOME  
chmod 755 *  
#cd $ORACLE_BASE/admin/$ORACLE_SID  
#chmod 755 *  
cd $ORACLE_HOME/bin  
chmod 6751 oracle  
# Use strace strace lsnrctl start to find permission with  
below tmp file  
chown -R $USER:$GROUP /var/tmp/.oracle/  
  
# Stop Oracle if it is running  
/etc/init.d/oracle-xe stop > /dev/null 2>&1  
# Kill any remaining Oracle processes if it is running  
# Reset timeout of network services to ensure no issue  
on reinstall in less than 60 seconds  
#echo 1 > /proc/sys/net/ipv4/tcp_fin_timeout  
  
kill -9 `ps -ef | grep oracle | grep -v grep | awk '{print  
$2}'` > /dev/null 2>&1
```

```
25  
echo "# Update the listner.ora to ONLY use TCPv4 to  
ensure no open ports"  
echo "# hang a reinstall of Oracle XE"  
cp -r -p $ORACLE_HOME/network/admin/listener.ora  
$ORACLE_HOME/network/admin/listener.ora.org  
cp -r -p $ORACLE_HOME/network/admin/tnsnames.ora  
$ORACLE_HOME/network/admin/tnsnames.ora.org  
sed -i "s|(HOST = %hostname%)(PORT =  
%port%)|(HOST = localhost)(PORT =  
%port%)(IP=V4_ONLY))|g"  
$ORACLE_HOME/network/admin/listener.ora  
sed -i "s|(HOST = %hostname%)(PORT =  
%port%)|(HOST = localhost)(PORT =  
%port%)(IP=V4_ONLY))|g"  
$ORACLE_HOME/network/admin/tnsnames.ora  
  
echo "# Create silent install file for Oracle configure  
script"  
cat << EOF > $PROPERTIESFOLDER/oracle-xe-silent-  
configure.iss  
ORACLE_HTTP_PORT=$_ORA_HTTP_PORT  
ORACLE_LISTENER_PORT=$_ORA_DB_PORT  
ORACLE_PASSWORD=$_PASSWORD  
ORACLE_CONFIRM_PASSWORD=$_PASSWORD  
ORACLE_DBENABLE=y  
EOF  
  
echo "Using Dos2Unix to convert silent install script"  
echo ""  
dos2unix $PROPERTIESFOLDER/oracle-xe-silent-  
configure.iss  
  
echo "Using OC to convert silent install script to correct  
format"  
echo ""  
od -xc < $PROPERTIESFOLDER/oracle-xe-silent-  
configure.iss  
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```

```
#echo "# Update Oracle Bash Profile to source Oracle  
Env Shell"  
cat << 'EOF' >> /home/oracle/.bash_profile  
. /u01/app/oracle/product/11.2.0/xe/bin/oracle_env.sh  
DISPLAY=$(who -m | gawk -F'(' '{ print $2}' | gawk -F')'  
'{print $1}')":0.0;export DISPLAY  
PS1='\$:\$( pwd ) \u\$'  
echo ""  
cd $ORACLE_HOME  
EOF  
  
echo "Configure Oracle-XE; watch  
$MEDIAFOLDER/XEsilentinstall.log to monitor"  
echo "This configure process may take 2-5 minutes,  
please wait"  
echo ""  
#/etc/init.d/oracle-xe configure  
responseFile=$PROPERTIESFOLDER/oracle-xe-silent-  
configure.iss >> $MEDIAFOLDER/XEsilentinstall.log  
/etc/init.d/oracle-xe configure  
responseFile=$PROPERTIESFOLDER/oracle-xe-silent-  
configure.iss  
# Add sleep to view the message output from configure  
to ensure no failure msg  
sleep 5  
  
echo "# View logs under  
/u01/app/oracle/product/11.2.0/xe/config/log"  
echo "# ps -ef | grep oracle | grep -v grep | grep -v bash  
| grep -v su | wc -l"  
echo "# should display 14-26 services; depending on  
what has been enabled"  
echo "# 14-25 database processes and 1 database  
LISTNER"
```



CLI Example: step022_root_Create_DB_users_as_Oracle_User_via_su

```
# Create Oracle login ID for IM, IdP, GM
```

```
IMUSER=imdba
```

```
IPUSER=ipdba
```

```
IGUSER=igdba
```

```
_PASSWORD=Password01
```

```
_PORT=1521
```

```
echo "##### Create DB Users $IMUSER, $IPUSER, $IGUSER "
```

```
su - oracle -c "sqlplus system/$_PASSWORD" << EOF
```

```
/* IM (Identity Management DB User) */
```

```
drop user $IMUSER cascade;
```

```
create user $IMUSER identified by $_PASSWORD;
```

```
grant connect, resource to $IMUSER;
```

```
grant create table, create view, create session, create trigger, create sequence  
to $IMUSER;
```

```
grant create tablespace, drop tablespace, manage tablespace, unlimited  
tablespace to $IMUSER;
```

```
/* IP (Identity Portal DB User / SIGMA) */
```

```
drop user $IPUSER cascade;
```

```
create user $IPUSER identified by $_PASSWORD;
```

```
grant connect, resource to $IPUSER;
```

```
grant create table, create view, create session, create trigger, create sequence  
to $IPUSER;
```

```
grant create tablespace, drop tablespace, manage tablespace, unlimited  
tablespace to $IPUSER;
```

```
/* IG (Identity Governance DB User) */
```

```
drop user $IGUSER cascade;
```

```
create user $IGUSER identified by $_PASSWORD;
```

```
grant connect, resource to $IGUSER;
```

```
grant create table, create view, create session, create trigger, create sequence  
to $IGUSER;
```

```
grant create tablespace, drop tablespace, manage tablespace, unlimited  
tablespace to $IGUSER;
```

```
/* Show All Users Created in database */
```

```
select * from all_users;
```

```
EOF
```

```
echo "##### Update Sessions, Processes, Transactions #####"
```

```
su - oracle -c "sqlplus / as sysdba" << EOF
```

```
show parameter sessions
```

```
show parameter processes
```

```
show parameter transactions
```

```
alter system set processes=500 scope=spfile;
```

```
alter system set sessions=555 scope=spfile;
```

```
alter system set transactions=610 scope=spfile;
```

```
alter system set session_cached_cursors=100 scope=spfile;
```

```
alter system set session_max_open_files=100 scope=spfile;
```

```
alter system set license_max_sessions=100 scope=spfile;
```

```
alter system set license_sessions_warning=100 scope=spfile;
```

```
alter system set local_listener =
```

```
'(ADDRESS=(PROTOCOL=TCP)(HOST=localhost)(PORT=$_PORT))' scope = both;
```

```
alter system register;
```

```
EXEC DBMS_LOCK.SLEEP (2);
```

```
/* shutdown abort */
```

```
shutdown immediate;
```

```
startup;
```

```
show parameter sessions
```

```
show parameter processes
```

```
show parameter transactions
```

```
EOF
```

```
USER=oracle
```

```
GROUP=dba
```

```
# Ensure ownership is correct by the oracle account
```

```
chown -R $USER:$GROUP /opt/CA/db
```

```
chown -R $USER:$GROUP /u01/app/oracle
```

```
chown -R $USER:$GROUP /u01/
```

```
echo "Reminder REBOOT server with Oracle if unable to apply SQL updates"
```

CLI Example: step023_root_Performance_Updates_to_Oracle



H:\sandbox\
9-14\steps\step02

```
echo ##### Performance Updates #####
su - oracle -c "sqlplus / as sysdba" << EOF
/* ###Disable the Apex application server serving the Web
administration software, */
/* ###Disable job queue and advanced queueing: */
/* alter system reset dispatchers scope=spfile; */
/* alter system reset shared_servers scope=spfile; */
alter system set job_queue_processes=0 scope=both;
alter system set aq_tm_processes=0 scope=both;
/* ###Disable the shared server access */
/* ### Used only for localhost access */
/* exec dbms_xdb.setlistenerlocalaccess(FALSE); */
/* exec dbms_xdb.sethttpport(0); */
/* ### Lower memory usage for SGA and PGA */
/* alter system set sga_target=256M scope=both; */
/* alter system set pga_aggregate_target=100M scope=both; */
/* ##Disable the Oracle recyclebin feature - */
/* alter system set recyclebin = OFF; */
alter session set recyclebin = OFF;
shutdown immediate;
startup;
EOF
```

```
echo ##### REBOOT SERVER IF UNABLE TO APPLY ORACLE
UPDATES #####
echo ##### THEN RUN SCRIPT AGAIN #####
#####
```

CLI Examples: CA DIR/JBOSS

■ CA Directory (Binaries Only)

— Selection Choice

- Use CA Directory from IAM Suite ISO Install Media

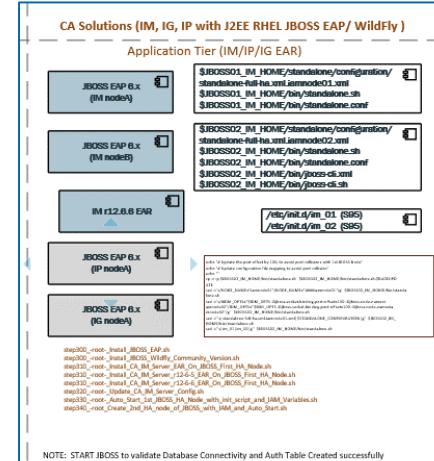
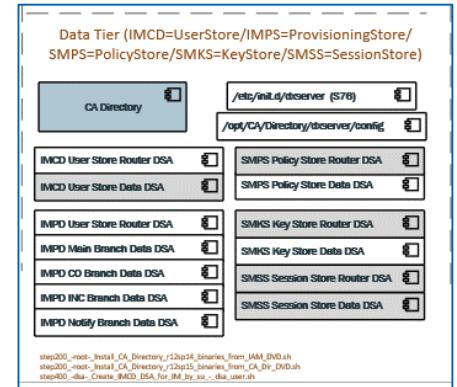
- Use CA Directory from CA Directory (lastest GA ISO)

- The CA Directory must be same release or later than included with the IAM/IM ISO to avoid installation issues.
- Note: If using CA Directory to co-locate both the IMPD and IMCD and SSO DSA, be very aware that the IMPD installer will force an upgrade of the CA Directory binaries if the version is not at the expected ISO level. This may impact production outage windows for co-located components.

- step030a_-root-_Install_CA_Directory_r12sp15_binaries_from_CA_Dir_DVD
- step030b_-root-_Install_CA_Directory_r12sp14_binaries_from_IAM_DVD

■ JBOSS (RHEL EAP/WildFly)

- step040a_-root-_Install_JBOSS_EAP
- step040b_-root-_Install_JBOSS_Wildfly_Community_Version



CLI Example: step030a_-root-_Install_CA_Directory_r12sp15_binaries_from_CA_Dir_DVD



H:\sandbox\
9-14\steps\step03\

```
# Install CA Directory binaries & dsa account  
_PASSWORD=Password01  
MEDIAFOLDER=/opt/CA/media  
PROPERTIESFOLDER=/opt/CA/media/steps/properties  
USER=dsa  
GROUP=etrdir  
  
DXHOME=/opt/CA/Directory/dxserver  
export DXHOME  
. /opt/CA/Directory/dxserver/install/.dxprofile  
  
# Remove prior CA Directory Installation  
cd $DXHOME/uninstall  
$DXHOME/uninstall/dxuninst.sh -silent  
  
# Example: Create silent response file  
# dxsetup.sh -write_responses silent.txt  
# dxsetup.sh -nodoc -write_responses silent.txt  
# $MEDIAFOLDER/iso/ca/iam_suite/r12-  
5/server/CADirectory/dxserver/install/dxsetup.sh -write_responses  
$PROPERTIESFOLDER/cadir-silent.properties  
  
echo "##### Install CA Directory #####"  
cd $MEDIAFOLDER/iso/ca/dir/r12-  
sp15/linux_x86_64/dxserver/install  
$MEDIAFOLDER/iso/ca/dir/r12-  
sp15/linux_x86_64/dxserver/install/dxsetup.sh -responsefile  
$PROPERTIESFOLDER/cadir-silent.properties
```

```
# Change OS account of DSA's password  
echo $_PASSWORD | passwd --stdin -f dsa  
  
# Update bash profile for dsa user account  
cp -r -p /etc/skel/.bash_profile $DXHOME/.bash_profile  
echo ". /opt/CA/Directory/dxserver/install/.dxprofile" >>  
$DXHOME/.bash_profile  
echo "DISPLAY=$(who -m | gawk -F' ' '{ print $2}' | gawk -F' ' '{print  
$1}'):0.0;export DISPLAY" >> $DXHOME/.bash_profile  
  
# Fixed SharedComponent Link to x86 32 bit libraries on CentOS  
unlink /opt/CA/CAPKI  
ln -s /opt/CA/SharedComponents/CAPKI /opt/CA/CAPKI  
  
echo "### Change default chkconfig startup from: # chkconfig:  
2345 99 01 to # chkconfig: 2345 80 01"  
echo "### to avoid impacting dependent solutions on same host"  
sed -i 's|# chkconfig: 2345 99 01|# chkconfig: 2345 80 01|g'  
/etc/init.d/dxserver  
chkconfig --del dxserver  
chkconfig --add dxserver  
chkconfig dxserver on  
  
chown -R $USER:$GROUP /opt/CA/Directory
```

CLI Example: step030b _root-_Install_CA_Directory_r12sp14_binaries_from_IAM_DVD



H:\sandbox\
9-14\steps\step03\

```
# Install CA Directory binaries & dsa account
_PASSWORD=Password01
MEDIAFOLDER=/opt/CA/media
PROPERTIESFOLDER=/opt/CA/media/steps/properties
USER=dsa
GROUP=etrdir

# Use latest CA Directory from IAM Suite to ensure version
compatibility
DXHOME=/opt/CA/Directory/dxserver
export DXHOME
./opt/CA/Directory/dxserver/install/.dxprofile

# Remove prior CA Directory Installation
cd $DXHOME/uninstall
$DXHOME/uninstall/dxuninst.sh -silent

# Example: Create silent response file
# dxsetup.sh -write_responses silent.txt
# dxsetup.sh -nodoc -write_responses silent.txt
# $MEDIAFOLDER/iso/ca/iam_suite/r12-6-
5/server/CADirectory/dxserver/install/dxsetup.sh -write_responses
$PROPERTIESFOLDER/cadir-silent.properties

echo "##### Install CA Directory #####"
cd $MEDIAFOLDER/iso/ca/iam_suite/r12-6-
5/server/CADirectory/dxserver/install
$MEDIAFOLDER/iso/ca/iam_suite/r12-6-
5/server/CADirectory/dxserver/install/dxsetup.sh -responsefile
$PROPERTIESFOLDER/cadir-silent.properties
```

```
echo "##### Change DSA Password ######"
echo $_PASSWORD | passwd --stdin -f dsa

# Update bash profile for dsa user account
cp -r -p /etc/skel/.bash_profile $DXHOME/.bash_profile
echo ". /opt/CA/Directory/dxserver/install/.dxprofile" >>
$DXHOME/.bash_profile
echo "DISPLAY=$(who -m | gawk -F'(' '{ print $2}' | gawk -F')' '{print
$1}'):0.0;export DISPLAY" >> $DXHOME/.bash_profile

# Fixed SharedComponent Link to x86 32 bit libraries on CentOS
unlink /opt/CA/CAPKI
ln -s /opt/CA/SharedComponents/CAPKI /opt/CA/CAPKI

echo "### Change default chkconfig startup from: # chkconfig:
2345 99 01 to # chkconfig: 2345 80 01"
echo "## to avoid impacting dependent solutions on same host"
sed -i 's|# chkconfig: 2345 99 01|# chkconfig: 2345 80 01|g'
/etc/init.d/dxserver
chkconfig --del dxserver
chkconfig --add dxserver
chkconfig dxserver on

chown -R $USER:$GROUP /opt/CA/Directory
```



H:\sandbox\
0-19\steps\proper\



CLI Example: step040a_-root-_Install_JBOSS_EAP



H:\sandbox\
9-14\steps\step04\

```
# JBOSS EAP - Deploy four (4) instances
# 2 for IM HA validation
# 1 for IdP
# 1 for IG

_PASSWORD=Password01
MEDIAFOLDER=/opt/CA/media/iso
JAVA_HOME=/opt/CA/jdk/jdk1.7.0_71
JBOSS_FULL_VER=jboss-eap-6.2.0
JBOSS_VER=jboss-eap-6.2
JBOSS_ROOT=/opt/CA/jboss
JBOSS01_IM_HOME="$JBOSS_ROOT"/im_01
JBOSS02_IM_HOME="$JBOSS_ROOT"/im_02
JBOSS01_IP_HOME="$JBOSS_ROOT"/ip_01
JBOSS01_IG_HOME="$JBOSS_ROOT"/ig_01
USER=jboss
GROUP=jboss
PATH=$PATH:$JAVA_HOME/bin

echo "Ensure JBOSS for all components is not running"
echo "Ignore any error message related to missing init.d scripts for"
echo "components that may not be installed yet or not running"
systemctl daemon-reload >/dev/null 2>&1
/etc/init.d/jboss-im01 stop >/dev/null 2>&1
/etc/init.d/jboss-im02 stop >/dev/null 2>&1
/etc/init.d/jboss-ip01 stop >/dev/null 2>&1
/etc/init.d/jboss-ig01 stop >/dev/null 2>&1

echo "Kill any remaining process open by jboss user ID"
kill -9 `ps -ef | grep jboss | grep -v grep | awk '{print $2}'` >
/dev/null 2>&1
```

```
echo "# Clean up prior deployment by removing folders"
rm -rf $JBOSS01_IM_HOME
rm -rf $JBOSS02_IM_HOME
rm -rf $JBOSS01_IP_HOME
rm -rf $JBOSS01_IG_HOME
userdel -r $USER

echo "# Make JBOSS folder for install and create soft link for
$JBOSS_ROOT"
mkdir -p $JBOSS_ROOT

echo "# Create JBOSS User"
adduser -U -M -d $JBOSS_ROOT -p $_PASSWORD $USER

echo "# Unzip $JBOSS_FULL_VER from "
unzip -u $MEDIAFOLDER/jboss/$JBOSS_FULL_VER.zip -d
$JBOSS01_IM_HOME >/dev/null 2>&1
#unzip -u $MEDIAFOLDER/jboss/$JBOSS_FULL_VER.zip -d
$JBOSS_ROOT >/dev/null 2>&1
#mv $JBOSS_ROOT/$JBOSS_VER $JBOSS01_IM_HOME
#unzip -u $MEDIAFOLDER/jboss/$JBOSS_FULL_VER.zip -d
$JBOSS02_IM_HOME
#unzip -u $MEDIAFOLDER/jboss/$JBOSS_FULL_VER.zip -d
$JBOSS01_IP_HOME
#unzip -u $MEDIAFOLDER/jboss/$JBOSS_FULL_VER.zip -d
$JBOSS01_IG_HOME

echo "# Update permissions to jboss"
chown -R $USER:$GROUP $JBOSS_ROOT
echo "# Check that standalone.sh was updated"
ls -al $JBOSS_ROOT/
ls -al $JBOSS01_IM_HOME/
ls -al $JBOSS01_IM_HOME/$JBOSS_VER/bin/standalone.sh
```



CLI Example: step040b_root_Install_JBOSS_Wildfly_Community_Version

```
# JBOSS Wildfly Community Version - Deploy four (4) instances
# 2 for IM HA validation
# 1 for IdP
# 1 for IG

_PASSWORD=Password01
MEDIAFOLDER=/opt/CA/media/iso
JAVA_HOME=/opt/CA/jdk/jdk1.7.0_71
JBOSS_FULL_VER=wildfly-9.0.1.Final
JBOSS_VER=wildfly-9.0.1.Final
JBOSS_ROOT=/opt/CA/jboss
JBOSS01_IM_HOME="$JBOSS_ROOT"/im_01
JBOSS02_IM_HOME="$JBOSS_ROOT"/im_02
JBOSS01_IP_HOME="$JBOSS_ROOT"/ip_01
JBOSS01_IG_HOME="$JBOSS_ROOT"/ig_01
USER=jboss
GROUP=jboss
PATH=$PATH:$JAVA_HOME/bin

echo "Ensure JBOSS for all components is not running"
echo "Ignore any error message related to missing init.d scripts for"
echo "components that may not be installed yet or not running"
systemctl daemon-reload >/dev/null 2>&1
/etc/init.d/jboss-im01 stop >/dev/null 2>&1
/etc/init.d/jboss-im02 stop >/dev/null 2>&1
/etc/init.d/jboss-ip01 stop >/dev/null 2>&1
/etc/init.d/jboss-ig01 stop >/dev/null 2>&1

echo "Kill any remaining process open by jboss user ID"
kill -9 `ps -ef | grep jboss | grep -v grep | awk '{print $2}'` >
/dev/null 2>&1
```

```
echo "# Clean up prior deployment by removing folders"
rm -rf $JBOSS01_IM_HOME
rm -rf $JBOSS02_IM_HOME
rm -rf $JBOSS01_IP_HOME
rm -rf $JBOSS01_IG_HOME
userdel -r $USER

echo "# Make JBOSS folder for install and create soft link for
$JBOSS_ROOT"
mkdir -p $JBOSS_ROOT

echo "# Create JBOSS User"
adduser -U -M -d $JBOSS_ROOT -p $_PASSWORD $USER

echo "# Unzip $JBOSS_FULL_VER from "
unzip -u $MEDIAFOLDER/jboss/$JBOSS_FULL_VER.zip -d
$JBOSS01_IM_HOME >/dev/null 2>&1
#unzip -u $MEDIAFOLDER/jboss/$JBOSS_FULL_VER.zip -d
$JBOSS_ROOT >/dev/null 2>&1
#mv $JBOSS_ROOT/$JBOSS_VER $JBOSS01_IM_HOME
#unzip -u $MEDIAFOLDER/jboss/$JBOSS_FULL_VER.zip -d
$JBOSS02_IM_HOME
#unzip -u $MEDIAFOLDER/jboss/$JBOSS_FULL_VER.zip -d
$JBOSS01_IP_HOME
#unzip -u $MEDIAFOLDER/jboss/$JBOSS_FULL_VER.zip -d
$JBOSS01_IG_HOME

echo "# Update permissions to jboss"
chown -R $USER:$GROUP $JBOSS_ROOT
echo "# Check that standalone.sh was updated"
ls -al $JBOSS_ROOT/
ls -al $JBOSS01_IM_HOME/
ls -al $JBOSS01_IM_HOME/$JBOSS_VER/bin/standalone.sh
```

CLI Examples: CA IM EAR

- CA IM Application (EAR Deployment + J2EE Configuration Updates)
 - Selection Choice
 - Use CA IM Server from IAM Suite ISO Install Media
 - step050a_root-_Install_CA_IM_Server_r12-6-6_EAR_On_JBOSS_First_HA_Node
 - step050b_root-_Install_CA_IM_Server_r12-6-5_EAR_On_JBOSS_First_HA_Node
 - step050c_root-_Install_CA_IM_Server_r12-6-6_EAR_On_JBOSS_First_HA_Node_with_FIPS_and_Encrypt_Params
- CA IM Post Install Task
 - step051_root-_Update_CA_IM_Server_Config
 - step052_root-_Auto_Start_1st_JBOSS_HA_Node_with_init_script_and_IAM_Variables
 - step053_root-_Start_1st_JBOSS_HA_Node_to_validate_installation

CLI Example: step050a_root_Install_CA_IM_Server_r12-6-6_EAR_On_JBOSS_First_HA_Node



H:\sandbox\
D-19\steps\step050

```
# Variables
BACKUPDATE='date +%Y%m%d_%H%M%S_%N'
#IATMPDIR=/your/temp/space/directory"
MEDIAFOLDER=/opt/CA/media/iso
PROPERTIESFOLDER=/opt/CA/media/steps/properties
JAVA_VER=jdk1.7.0_71
JAVA_ROOT=/opt/CA/jdk
JAVA_HOME="$JAVA_ROOT/$JAVA_VER"_x64
JBoss_FULL_VER=jboss-eap-6.2.0
JBoss_VER=jboss-eap-6.2
JBoss_ROOT=/opt/CA/jboss
JBoss1_IM_HOME="$JBoss_ROOT"/im_01/"$JBoss_VER"
JBoss2_IM_HOME="$JBoss_ROOT"/im_02/"$JBoss_VER"
USER=jboss
GROUP=jboss
_PASSWORD=Password01
EMBEDDEDUSER=idmembedded
_DEFAULT_APP_SERVER_URL="http://imwa001.domain.com:8080"
_DEFAULT_JBOSS_CLUSTER_UNICAST_HOSTNAMES="sandbox01[7600],sandbox02[7700]"
_CLUSTER01_HOSTNAME='hostname'
_CLUSTER02_HOSTNAME=sandbox02
#_DEFAULT_JBOSS_CLUSTER_UNICAST_HOSTNAMES=_HOSTNAME01_[7600],_HOSTNAME02[7700]
# Host MUST resolve via nslookup (or local host file)
# Use different TCP Port if running both JBOSS instances on same server
# with two (2) hostnames resolved to the same IP address
#Need for uninstall process
PATH=$PATH:$JAVA_HOME/bin

echo "#####
echo "Ensure JBOSS for all IM, IG, IP components are not running"
echo "Ignore any error message related to missing init.d scripts for"
echo "components that may not be installed yet or not running"
systemctl daemon-reload >/dev/null 2>&1
/etc/init.d/jboss-im01 stop >/dev/null 2>&1
/etc/init.d/jboss-im02 stop >/dev/null 2>&1

echo "#####
echo "Kill any remaining process open by jboss user ID"
kill -9 `ps -ef | grep jboss | grep -v grep | awk '{print $2}'` > /dev/null 2>&1

echo "#####
echo "# Uninstall Prior IM r12.6.6 release"
/opt/CA/identityManager/install_config_info/im-uninstall/uninstall -i silent

echo "#####
echo "# Remove folder structure - left from any prior installs"
file $JBoss01_IM_HOME/standalone/deployments/castlyr5
rm -rf $JBoss01_IM_HOME/standalone/deployments/castlyr5*
file $JBoss01_IM_HOME/standalone/deployments/iam_im.ear
rm -rf $JBoss01_IM_HOME/standalone/deployments/iam_im.ear*

echo "#####
echo "# Remove prior installation notes"
rm -rf /var/.com.zerog.registry.xml
rm -rf /var/CA_IAM*
```

```
echo
#####
echo "# Update silent properties file for CA IM r12.6.6 "
cp -r -p $PROPERTIESFOLDER/imwa-jboss-cluster01.properties
$PROPERTIESFOLDER/imwa-jboss-cluster01.properties.$BACKUPDATE
cp -r -p $PROPERTIESFOLDER/imwa-jboss-cluster01.properties
$PROPERTIESFOLDER/imwa-jboss-cluster01.properties.updated
file $PROPERTIESFOLDER/imwa-jboss-cluster01.properties.updated

echo
#####
echo "# Update JAVA_HOME=$JAVA_HOME"
sed -i
's,"DEFAULT_JAVA_HOME=/opt/CA/java/jdk1.7.0_71_x64","DEFAULT_JAVA_HOME=$JAVA_HOME',''$PROPERTIESFOLDER/imwa-jboss-cluster01.properties.updated'

echo "# Update JBOSS_FOLDER=$JBoss01_IM_HOME"
sed -i 's,"DEFAULT_JBOSS_FOLDER=/opt/CA/jboss/jboss-eap-6.2","DEFAULT_JBOSS_FOLDER=$JBoss01_IM_HOME',''$PROPERTIESFOLDER/imwa-jboss-cluster01.properties.updated'

echo "# Update Embedded ID=$EMBEDDEDUSER"
sed -i
's/DEFAULT_GENERIC_USERNAME=idmembedded/DEFAULT_GENERIC_USERNAME=$EMBEDDEDUSER/g' $PROPERTIESFOLDER/imwa-jboss-cluster01.properties.updated

echo "# Update Embedded Password=$_PASSWORD"
sed -i
's/DEFAULT_GENERIC_PASSWORD=Password01/DEFAULT_GENERIC_PASSWORD=$_PASSWORD/g' $PROPERTIESFOLDER/imwa-jboss-cluster01.properties.updated
sed -i
's/DEFAULT_DB_PASSWORD=Password01/DEFAULT_DB_PASSWORD=$_PASSWORD/g' $PROPERTIESFOLDER/imwa-jboss-cluster01.properties.updated

echo "# Update HTTP URL=$DEFAULT_APP_SERVER_URL"
sed -i
's/$DEFAULT_APP_SERVER_URL=http://imwa001.domain.com:8080/$DEFAULT_APP_SERVER_URL=$DEFAULT_APP_SERVER_URL/g'
$PROPERTIESFOLDER/imwa-jboss-cluster01.properties.updated

echo "# Update UNICAST CLUSTER HOSTNAMES & PORTS=$DEFAULT_JBOSS_CLUSTER_UNICAST_HOSTNAMES"
sed -i '$_HOSTNAME01$_CLUSTER01_HOSTNAME|g'
$PROPERTIESFOLDER/imwa-jboss-cluster01.properties.updated
sed -i '$_HOSTNAME02$_CLUSTER02_HOSTNAME|g'
$PROPERTIESFOLDER/imwa-jboss-cluster01.properties.updated

cat $PROPERTIESFOLDER/imwa-jboss-cluster01.properties.updated
```

```
echo #####
echo ##### ENSURE THE PROPERTIES VALUES ABOVE ARE CORRECT #####
echo #####
echo #####
echo ##### Installing CA IM r12.6.6 #####
echo #### This may take 3-5 minutes #####
echo ""
echo ""
###$MEDIAFOLDER/ca/iam_suite/r12-6-6/server/ca-im-12.6.06-linux.bin -f
$PROPERTIESFOLDER/silent-cluster.ini -i console
###$MEDIAFOLDER/ca/iam_suite/r12-6-6/server/ca-im-12.6.06-linux.bin -f /iso/imwa-silent.properties -i silent
###$MEDIAFOLDER/ca/iam_suite/r12-6-6/server/ca-im-12.6.06-linux.bin -f /iso/im-silent-jbosseap64.properties -i silent

#$MEDIAFOLDER/ca/iam_suite/r12-6-6/server/ca-im-12.6.06-linux.bin -f
$PROPERTIESFOLDER/imwa-jboss-cluster01.properties.updated -i silent
$MEDIAFOLDER/ca/iam_suite/r12-6-6/server/ca-im-12.6.06-linux.bin -f
$PROPERTIESFOLDER/imwa-jboss-cluster01.properties.updated -i silent

echo #####
echo "# Validate Jboss Update by IM - Date and IAM string"
ls -al $JBoss01_IM_HOME/bin/standalone.sh
ls -al $JBoss01_IM_HOME/bin/standalone.conf
ls -al $JBoss01_IM_HOME/standalone/configuration/standalone-full-ha.xml
file $JBoss01_IM_HOME/standalone/configuration/standalone-full-ha.xml
grep -i iam $JBoss01_IM_HOME/bin/standalone.sh

echo ""
echo "# Update logging and database configuration files"
#echo "# /opt/CA/jboss/jboss-eap-6.2/standalone/deployments/iam_im.ear/config/com/netegrity/config/log4j_jboss.properties"

### Note on cluster versus non cluster
### JBOSS configuration: standalone-full.xml: Support of Java EE Full-Profile and all server capabilities without clustering
### JBOSS configuration: standalone-full-ha.xml: Full profile with clustering capabilities

echo ""
echo ""
echo ""
echo "# Run next step to update the JBOSS_HOME/bin/standalone.sh and "
echo "# standalone.conf files to enable HA configurations"
echo ""
echo #####
chown -R $USER:$GROUP $JBoss01_IM_HOME/bin/standalone.sh
chmod 555 $JBoss01_IM_HOME/bin/standalone.sh
```



H:\sandbox\
D-19\steps\proper
technologies

CLI Example: step050b_-root-_Install_CA_IM_Server_r12-6-5_EAR_On_JBOSS_First_HA_Node



H:\sandbox\
0-19\steps\step05\



H:\sandbox\
0-19\steps\proper\

CLI Example: step050c_-root-_Install_CA_IM_Server_r12-6-6_EAR_On_JBOSS_First_HA_Node_with_FIPS_and_Encrypt_Parms

config	230,478	9/17/2015 10:26:03 PM
com	160,568	9/17/2015 10:26:03 PM
netegrity	160,568	9/17/2015 10:26:03 PM
config	160,419	9/17/2015 10:26:03 PM
keys	352	9/17/2015 10:26:03 PM
keyParams.properties	352	9/17/2015 3:05:38 AM

config	230,168	9/17/2015 10:26:08 PM
com	160,260	9/17/2015 10:26:08 PM
netegrity	160,260	9/17/2015 10:26:08 PM
config	160,111	9/17/2015 10:26:08 PM
keys	44	9/17/2015 10:26:08 PM
FIPSKey.dat	44	9/17/2015 2:29:00 AM

modules	137,636,243	9/17/2015 10:26:10 PM
com	5,734,745	9/17/2015 10:26:10 PM
ca	5,734,745	9/17/2015 10:26:10 PM
iam	5,734,745	9/17/2015 10:26:10 PM
crypto	2,177,828	9/17/2015 10:26:10 PM
main	2,177,828	9/17/2015 10:26:10 PM
config	44	9/17/2015 10:26:10 PM
com	44	9/17/2015 10:26:10 PM
netegrity	44	9/17/2015 10:26:10 PM
config	44	9/17/2015 10:26:10 PM
keys	44	9/17/2015 10:26:10 PM
FIPSKey.dat	44	9/17/2015 2:29:04 AM

Encrypt Parameter (properties and trigger file)

\jboss-eap-6.2\standalone\deployments\iam_im.ear\config\com\netegrity\config\keys\keyParams.properties
\jboss-eap-6.2\standalone\deployments\iam_im.ear\config\iam_migration.trigger

FIPS (properties/dat file and configuration/trigger file)

\jboss-eap-6.2\modules\com\ca\iam\crypto\main\module.xml
\jboss-eap-6.2\standalone\deployments\iam_im.ear\config\com\netegrity\config\keys\FIPSKey.dat
SVFX047B\ukMrP9qHMLFnz0ZZum5RwfGnpUBiGYMA=
\jboss-eap-6.2\modules\com\ca\iam\crypto\main\config\com\netegrity\config\keys\FIPSKey.dat
SVFX047B\ukMrP9qHMLFnz0ZZum5RwfGnpUBiGYMA=
\jboss-eap-6.2\standalone\deployments\iam_im.ear\custom\identitymanager\systemWideProperties.properties
IMeTASharedSecret= (Null)



H:\sandbox\
0-19\steps\step05\



H:\sandbox\
0-19\steps\proper\

```
Thread Pool -- 85) * Startup Step 28 : Attempting to start environments
Thread Pool -- 85) ** FIPS mode enabled : true
```

CLI: Captured NIM PASSWORD & Integration in IM

\jboss-eap-6.2\standalone\deployments\iam_im.ear\ca-nim-sm.war\WEB-INF\config\NIM-Users.xml

```
<property name="username" value="idmembedded"/>  
  
<property name="password" value="AAAAAEMkF8EOvz6/EhdfSzuWpIMrgJOTVh952WRsH3Z0JpYHt"/>
```

\jboss-eap-6.2\standalone\deployments\iam_im.ear\config\ca_nim.properties

```
nimadminUser=idmembedded  
  
nimadminPassword={PBES}:B8+4u/F3aiZ9sXus6HyDNA==  
  
nimURL=/iam/imnimsrm/api/v1
```

\jboss-eap-6.2\standalone\deployments\iam_im.ear\user_console.war\app\page\nimsmintegration\api-docs\listings\attachment

\jboss-eap-6.2\standalone\deployments\iam_im.ear\user_console.war\app\page\nimsmintegration\api-docs\listings\comment

\jboss-eap-6.2\standalone\deployments\iam_im.ear\user_console.war\app\page\nimsmintegration\api-docs\listings\configurations

\jboss-eap-6.2\standalone\deployments\iam_im.ear\user_console.war\app\page\nimsmintegration\api-docs\listings\incident

\jboss-eap-6.2\standalone\deployments\iam_im.ear\user_console.war\app\page\nimsmintegration\api-docs\listings\ticket

```
"basePath": "http://imwa001.domain.com:8080/iam/imnimsrm/api/v1",
```

CLI Example: step051_root_Update_CA_IM_Server_Config



H:\sandbox
0-19\steps\step05

```
# Variables
STARTTIME='date +%Y%m%d_%H%M%S_%N'
BACKUPDATE='date +%Y%m%d_%H%M%S_%N'
MEDIAFOLDER=/opt/CA/media/iso
PROPERTIESFOLDER=/opt/CA/media/steps/properties
JAVA_VER=java1.7.0_71
JAVA_ROOT=/opt/CA/java
JAVA_HOME=$JAVA_ROOT/JAVA_VER_x64
JBoss_VER=jboss-eap-6.2
JBoss_ROOT=/opt/CA/jboss
STANDALONE_CONFIGURATION=standalone-full-ha.xml.iamnode01.xml
JBoss01_IM_HOME="$JBoss_ROOT"/im_01/"$JBoss_VER"
JBoss02_IM_HOME="$JBoss_ROOT"/im_02/"$JBoss_VER"
JBoss01_IP_HOME="$JBoss_ROOT"/ip_01/"$JBoss_VER"
JBoss01_Ig_HOME="$JBoss_ROOT"/ig_01/"$JBoss_VER"
USER=jboss
GROUP=jboss
MAXMEMORY=2048
PERMSIZE=512
JBoss_PIDFILE=$JBoss01_IM_HOME/standalone/log/jboss-im_01.pid
PATH=$PATH:$JAVA_HOME/bin

echo "### Backup JBoss standalone.sh, standalone.conf, standalone-full-ha.xml "
cp -r -p $JBoss01_IM_HOME/bin/standalone.sh $JBoss01_IM_HOME/bin/standalone.sh.$BACKUPDATE
cp -r -p $JBoss01_IM_HOME/bin/standalone.conf $JBoss01_IM_HOME/bin/standalone.conf.$BACKUPDATE
cp -r -p $JBoss01_IM_HOME/standalone/configuration/standalone-full-ha.xml.$BACKUPDATE
$JBoss01_IM_HOME/standalone/configuration/standalone-full-ha.xml.$BACKUPDATE
cp -r -p $JBoss01_IM_HOME/standalone/configuration/standalone-full-ha.xml
$JBoss01_IM_HOME/standalone/configuration/standalone-full-ha.xml.iamnode01.xml
cp -r -p $JBoss01_IM_HOME/standalone/configuration/standalone-full-ha.xml
$JBoss01_IM_HOME/standalone/configuration/standalone-full-ha.xml.iamnode02.xml
cp -r -p $JBoss01_IM_HOME/standalone/configuration/standalone-full-ha.xml
$JBoss01_IM_HOME/standalone/configuration/standalone-full-ha.xml.iamnode02.$BACKUPDATE

echo "### STANDALONE.SH - Update Cluster Node Info and use IPv4 ###"
sed -i 's/NODE_NAME="iamnode"/NODE_NAME="iamnode01"\nJBoss_PIDFILE==\n/g' $JBoss01_IM_HOME/bin/standalone.sh
sed -i 's|JBoss_PIDFILE==|JBoss_PIDFILE=$JBoss_PIDFILE|g' $JBoss01_IM_HOME/bin/standalone.sh
sed -i 's|=\"standalone-full-ha.xml\"|=\"$STANDALONE_CONFIGURATION\"|g'
$JBoss01_IM_HOME/bin/standalone.sh
sed -i 's/#IDM_OPTS="$IDM_OPTS -Djava.net.preferIPv4Stack=true"/#IDM_OPTS="$IDM_OPTS -Djava.net.preferIPv4Stack=true\n#WAIT# /g' $JBoss01_IM_HOME/bin/standalone.sh
sed -i 's/#WAIT#/IDM_OPTS="$IDM_OPTS -Dorg.apache.catalina.connector.WAIT_FOR_BEFORE_START=/castylesr5.1.1,/idmmanage,/iam/immanage,/idm/iam/im/n#NODE# /g' $JBoss01_IM_HOME/bin/standalone.sh
sed -i 's/#NODE#/#IDM_OPTS="$IDM_OPTS -Djboss.socket.binding.port-offset=100 -Djboss.node.name=iamnode02/g' $JBoss01_IM_HOME/bin/standalone.sh
```

```
echo "### STANDALONE.CONF - Update Memory Size for Cluster Node ###"
echo ""
echo "### Increase Max Memory from default of 1303 mb to $MAXMEMORY mb"
echo "### Increase Max PermSize from default of 256 mb to $PERMSIZE mb"
echo "### Update JBOSS JVM EGD to use /dev/urandom {non-blocking driver}"
echo "### Update JVM GC {Garbage Collection} routines "
echo ""
echo ""
sed -i 's|JAVA_OPTS="-Xms1303m -Xmx1303m -XX:MaxPermSize=256m -Djava.net.preferIPv4Stack=true"|JAVA_OPTS="-Xms1303m -Xmx"$MAXMEMORY"m -XX:MaxPermSize="$PERMSIZE"m -Djava.net.preferIPv4Stack=true\n#RANDOM# |g'
$JBoss01_IM_HOME/bin/standalone.conf
sed -i '#RANDOM#/JAVA_OPTS="$JAVA_OPTS -Djava.security.egd=file:/dev/./urandom\n#GC# /g' $JBoss01_IM_HOME/bin/standalone.conf
sed -i 's|#GC#/JAVA_OPTS="$JAVA_OPTS -Dsun.rmi.dgc.client.gcInterval=3600000 -Dsun.rmi.dgc.server.gcInterval=3600000 -XX:+AggressiveOpts -XX:+AggressiveHeap -XX:+UseParallelGC|/g' $JBoss01_IM_HOME/bin/standalone.conf

echo "### STANDALONE-FULL-HA.XML - Update XML file to have 2nd Node on same Server ###"
echo ""
echo "### Only needed if running 2nd HA JBOSS NODE on same host as 1st HA JBOSS NODE"
echo "### Update TCP port 5456 to use TCP port 15456 in 2nd Node configuration file"
echo ""
echo ""
sed -i 's/5456/15456/g' $JBoss01_IM_HOME/standalone/configuration/standalone-full-ha.xml.iamnode02.xml

chown -R $USER:$GROUP $JBoss_ROOT
chmod 555 $JBoss01_IM_HOME/bin/standalone.sh

echo "### VIEW UPDATED FILES"
echo ""
ls -lart $JBoss01_IM_HOME/bin/standalone.sh
ls -lart $JBoss01_IM_HOME/bin/standalone.conf
ls -lart $JBoss01_IM_HOME/standalone/configuration/standalone-full-ha.xml
echo ""

head -33 /opt/CA/jboss/im_01/jboss-eap-6.2/bin/standalone.sh | tail -22
echo ""
echo ""
echo "### Validate the above variables and values are correct for 1st JBOSS NODE ###"
```

CLI Example: step052_-root-_Auto_Start_1st_JBOSS_HA_Node _with_init_script_and_IAM_Variables



H:\sandbox\
0-19\steps\step05

```

HOSTNAME='hostname -f'
IP='hostname -i'
BACKUPDATE="date +%Y%m%d_%H%M%S_%N"
JAVA_HOME=/opt/CA/jdk/jdk1.7.0_71_x64
JBoss_ROOT=/opt/CA/jboss
JBoss_HOME=/opt/CA/jboss/im_01/jboss-eap-6.2
JBoss_CONSOLE_LOG=/opt/CA/jboss/im_01/jboss-eap-6.2/standalone/log/console.log
JBoss_PIDFILE=/opt/CA/jboss/im_01/jboss-eap-6.2/standalone/log/jboss-im_01.pid
JBoss_CONF=/opt/CA/jboss/im_01/jboss-eap-6.2/bin/standalone.conf
JBoss_CONFIG=standalone-full-ha.xml.iamnode01.xml
JBoss_USER=jboss
JBoss_GROUP=jboss
PORT=8080

echo
#####
echo "# Update Auto Start JBOSS init.d with IAM values for reboot use-case"
cat << 'EOF' > /etc/init.d/jboss-im_01
#!/bin/bash
### BEGIN INIT INFO
# jboss-im_01 control script
#
# chkconfig: 2345 95 20
# description: jboss-im_01 startup script
# processname: jboss-im_01
# pidfile: /opt/CA/jboss/im_01/jboss-eap-6.2/standalone/log/jboss-im_01.pid
# config: /opt/CA/jboss/im_01/jboss-eap-6.2/bin/standalone.conf
### END INIT INFO

# Source function library.
./etc/rc.d/init.d/functions

#Defining Variables
JAVA_HOME=/opt/CA/jdk/jdk1.7.0_71_x64
JBoss_ROOT=/opt/CA/jboss
JBoss_HOME=/opt/CA/jboss/im_01/jboss-eap-6.2
JBoss_CONSOLE_LOG=/opt/CA/jboss/im_01/jboss-eap-6.2/standalone/log/console.log
JBoss_PIDFILE=/opt/CA/jboss/im_01/jboss-eap-6.2/standalone/log/jboss-im_01.pid
JBoss_SCRIPT=$JBoss_HOME/bin/standalone.sh
JBoss_CONF=/opt/CA/jboss/im_01/jboss-eap-6.2/bin/standalone.conf
JBoss_CONFIG=standalone-full-ha.xml.iamnode01.xml
JBoss_USER=jboss
JBoss_GROUP=jboss
PORT=8080
PATH=$PATH:$JAVA_HOME/bin:$JBoss_HOME/bin

mkdir -p $JBoss_HOME/standalone/log
chown -R $JBoss_USER:$JBoss_GROUP $JBoss_ROOT
cd $JBoss_HOME/standalone/log

```

```

case "$1" in
start)
echo "Starting IM Node: im_01 JBoss ..."
echo "Please wait 60-90 seconds ..."
echo "JAVA_HOME=$JAVA_HOME and JBOSS_HOME=$JBoss_HOME"
echo "JBoss_CONFIG=$JBoss_CONFIG"
echo ""
echo "Launch browser to http://`hostname`:$PORT iam\immanage"
#sudo -u $JBoss_USER sh "$JBoss_HOME/bin/standalone.sh" &
su - $JBoss_USER -c "LAUNCH_JBOSS_IN_BACKGROUND=1
JBoss_PIDFILE=$JBoss_PIDFILE $JBoss_SCRIPT" >> $JBoss_CONSOLE_LOG 2>&1 &
touch /var/lock/subsys/jboss-im_01
;;
stop)
echo "Stopping IM Node: im_01 JBoss ..."
sudo sh $JBoss_HOME/bin/jboss-cli.sh --connect command=:shutdown
rm -rf /var/lock/subsys/jboss-im_01
;;
log)
echo "Showing server.log..."
tail -1000 $JBoss_HOME/standalone/log/server.log
;;
*)
echo "Usage: /etc/init.d/jboss {start|stop|log}"
exit 1
;;
esac
exit 0
EOF

cp -r -p $JBoss_HOME/bin/jboss-cli.sh $JBoss_HOME/bin/jboss-cli.sh.$BACKUPDATE
sed -i '$!{bin/sh}!{bin/sh}\n\n#####\n\n' $JBoss_HOME/bin/jboss-cli.sh
sed -i
"$!{bin/sh}\n\n#####\n\n" $JBoss_HOME=$JAVA_HOME$JBoss_HOME=$JBoss_HOME$JBoss_CONSOLE_LOG=$JBoss_CONSOLE_LOG$JBoss_CONF=$JBoss_CONF$JBoss_CONFIG=$JBoss_CONFIG$JBoss_USER=$JBoss_USER$JBoss_PIDFILE=$JBoss_PIDFILE\n\n#####\n\n" $JBoss_HOME/bin/jboss-cli.sh"

#echo "# Update embedded Workpoint Workflow Server configuration to use correct
path for workflow.log"
#echo "# and correct port for workflow server"
#cp -r -
$JBoss1_IM_HOME}/standalone/deployments/iam_im.ear/config/workpoint-
server.properties
$JBoss1_IM_HOME}/standalone/deployments/iam_im.ear/config/workpoint-
server.properties.$(BACKUPDATE) #sed -i
"$!{workpoint.gateway.url=http://localhost:8080/wpGateway/|workpoint.gateway.url=h
ttp://localhost:$PORT/wpGateway/}" $JBoss1_IM_HOME}/standalone/deployments/iam_im.ear/config/workpoint-
server.properties

```

```

#echo "# Update Startup # Values from 80 20 to 95 20 to ensure JBOSS starts after oracle
and dxserver and siteminder#"
#sed -i 's/## chkconfig: - 80 20##/## chkconfig: - 95 20##/g' /etc/init.d/jboss-im_01

chmod 555 /etc/init.d/jboss-im_01
chkconfig --del jboss-im_01
chkconfig --add jboss-im_01
chkconfig jboss-im_01 on
chkconfig --list jboss-im_01

head -24 /etc/init.d/jboss-im_01 | tail -11

#####
echo "# Start IAM JBOSS as root: /etc/init.d/jboss-im_01 start "
echo "# Launch workstation browser: http://`hostname`:8080"
echo "# Execute the following command to manage any OS warning messages about service file
changed.
systemctl daemon-reload

# Notes: If error message occurs on IM startup via /etc/init.d/ scripts
# there is usually three (3) common issues:
# 1. workflow.log being created in the startup folder location and not having permission
to be written for 1st time
# Resolution: Update init script to cd to a directory that has permissions, e.g. jboss bin or
log
# 2. failed or incomplete start or fast shutdown leaves JMS messages in queue.
# Resolution: Move jboss standalone/data and /tmp folders to data.old and tmp.old,
then make new data and tmp folder
# before a restart.
# 3. JDBC thin URL is incorrect. Test on Oracle or MS SQL system or 3rd party tool first
with JDBC Thin URL
# Resolution: On local sandbox, test oracle with su - oracle;sqlplus system/Password@XE
if this fails then IM will fail

```

CLI Example: step053_-root-_Start_1st_JBOSS_HA_Node_to_validate_installation



H:\sandbox\
0-19\steps\step05\

```
#!/bin/bash

#####
# Start 1st JBOSS HA NODE and validate no issues
#
#####
_IP='hostname -i'
_FQDN='hostname -f'
_PORT=8080

/etc/init.d/jboss-im_01 start

echo #####
echo "Open workstation browser and connect to"
echo ""
echo "http://$_IP:$_PORT for JBOSS console"
echo "http://$_FQDN:$_PORT for JBOSS console"
echo "http://$_IP:$_PORT/iam/immanage for IM Management Console"
echo "http://$_FQDN:$_PORT/iam/immanage for IM Management Console"
echo ""

echo "After validation; shutdown to continue HA setup"
echo "/etc/init.d/jboss_im01 stop"
echo ""
echo "If JBOSS does not start, check that Oracle XE is running & listening"
echo "ps -ef | grep ora"
echo #####
echo ""
echo ""
```

CLI Examples: CA IM EAR (2nd JBOSS Instance)

- **NON-PRODUCTION EXAMPLE**
 - Process used to validate JBOSS HA Port configurations
 - Use OS copy & update JBOSS Ports
- JBOSS + CA IM Application (EAR Deployment + J2EE Configuration Updates)
 - step060_root_Create_2nd_HA_node_of_JBOSS_with_IAM_and_Auto_Start

CLI Examples: CA IM EAR (2nd JBOSS Instance)

- View of ports used.

Solution	NIC/PORT	Description	Node	Bump/Value	WhereEdited
IM r12.6.6	127.0.0.1:5456	<param key="port" value="5456"/>	NODE01		
IM r12.6.6	127.0.0.1:15456	<param key="port" value="5456"/>	NODE02	10000	XML
IM r12.6.6	127.0.0.1:3528	<socket-binding interface="unsecure" name="jacorb" port="3528"/>	NODE01		
IM r12.6.6	127.0.0.1:3628	<socket-binding interface="unsecure" name="jacorb" port="3528"/>	NODE02	100	OFFSET
IM r12.6.6	127.0.0.1:9990	<socket-binding interface="management" name="management-http" port="\${jboss.management.http.port:9990}"/>	NODE01		
IM r12.6.6	127.0.0.1:10090	<socket-binding interface="management" name="management-http" port="\${jboss.management.http.port:9990}"/>	NODE02	100	OFFSET
IM r12.6.6	127.0.0.1:9999	<socket-binding interface="management" name="management-native" port="\${jboss.management.native.port:9999}"/>	NODE01		
IM r12.6.6	127.0.0.1:10099	<socket-binding interface="management" name="management-native" port="\${jboss.management.native.port:9999}"/>	NODE02	100	OFFSET
IM r12.6.6	192.168.92.128:4447	<socket-binding name="remoting" port="4447"/>	NODE01		
IM r12.6.6	192.168.92.128: 4547	<socket-binding name="remoting" port="4447"/>	NODE02	100	OFFSET
IM r12.6.6	192.168.92.128:5455	<socket-binding name="messaging-throughput" port="5455"/>	NODE01		
IM r12.6.6	192.168.92.128: 5555	<socket-binding name="messaging-throughput" port="5455"/>	NODE02	100	OFFSET
IM r12.6.6	192.168.92.128:57600	<socket-binding name="jgroups-tcp-fd" port="57600"/>	NODE01		
IM r12.6.6	192.168.92.128:57601	<socket-binding name="jgroups-tcp-fd" port="57600"/>	NODE01		
IM r12.6.6	192.168.92.128:57602	<socket-binding name="jgroups-tcp-fd" port="57600"/>	NODE01		
IM r12.6.6	192.168.92.128: 57700	<socket-binding name="jgroups-tcp-fd" port="57600"/>	NODE02	100	OFFSET
IM r12.6.6	192.168.92.128: 57701	<socket-binding name="jgroups-tcp-fd" port="57600"/>	NODE02	100	OFFSET
IM r12.6.6	192.168.92.128: 57702	<socket-binding name="jgroups-tcp-fd" port="57600"/>	NODE02	100	OFFSET
IM r12.6.6	192.168.92.128:7600	<socket-binding name="jgroups-tcp" port="7600"/>	NODE01		
IM r12.6.6	192.168.92.128: 7700	<socket-binding name="jgroups-tcp" port="7600"/>	NODE02	100	OFFSET + SH
IM r12.6.6	192.168.92.128:8009	<socket-binding name="ajp" port="8009"/>	NODE01		
IM r12.6.6	192.168.92.128:8109	<socket-binding name="ajp" port="8009"/>	NODE02	100	OFFSET
IM r12.6.6	192.168.92.128:8080	<socket-binding name="http" port="8080"/>	NODE01		
IM r12.6.6	192.168.92.128:8180	<socket-binding name="http" port="8080"/>	NODE02	100	OFFSET

Updates made to three (3) files: standalone.sh (define offset & JMS offset), jboss-cli.sh (define shutdown port), standalone-full-ha.xml (5456 port)



CLI Example: step060_root_Create_2nd_HA_node_of_JBOSS_with_IAM_and_Auto_Start

```
# Create 2nd JBOSS Node on the same server as the 1st JBOSS Node
#
# Perform a copy of the 1st JBOSS Node AFTER IAM EAR has been installed
# Update the JBOSS02_HOME/bin/standalone.sh to reflect the tokens
# for the 2nd Node, and avoid conflict with 1st Node

# Variables
STARTTIME='date'
BACKUPDATE=date +%Y%m%d_%H%M%S_%N'
MEDIAFOLDER=/opt/CA/media/iso
PROPERTIESFOLDER=/opt/CA/media/steps/properties
JAVA_VER=jdk1.7.0_71
JAVA_ROOT=/opt/CA/jdk1.7.0_71
JAVA_HOME=$JAVA_ROOT/${JAVA_VER}_x64
JBOSS_VER=jboss-eap-6.2
JBOSS_ROOT=/opt/CA/jboss
JBOSS01_IM_HOME="$JBOSS_ROOT"/im_01/"$JBOSS_VER"
JBOSS02_IM_HOME="$JBOSS_ROOT"/im_02/"$JBOSS_VER"
JBOSS01_IP_HOME="$JBOSS_ROOT"/ip_01/"$JBOSS_VER"
JBOSS01_IG_HOME="$JBOSS_ROOT"/ig_01/"$JBOSS_VER"
USER=jboss
GROUP=jboss
STANDALONE_CONFIGURATION=standalone-full-ha.xml.iamnode02.xml
PORT=8180

PATH=$PATH:$JAVA_HOME/bin

echo "# Ensure JBOSS services are down"
/etc/init.d/jboss-im_01 stop > /dev/null 2>&1
/etc/init.d/jboss-im_02 stop > /dev/null 2>&1
kill -9 `ps -ef | grep jboss | grep -v grep | awk '{print $2}'` > /dev/null 2>&1

echo "# Copy JBOSS + IM EAR (Installed)"
rm -rf $JBOSS_ROOT/im_02
mkdir -p $JBOSS_ROOT/im_02
cp -r $JBOSS01_IM_HOME $JBOSS02_IM_HOME

echo "# Update standalone.sh for 2nd JBOSS NODE"
echo "# Update the Node Name=iamnode02"
echo "# Update the port offset by 100, to avoid port collisions with 1st JBOSS Node"
echo "# Update configuration file mapping to avoid port collision"
echo ""
cp -r $JBOSS02_IM_HOME/bin/standalone.sh
$JBOSS02_IM_HOME/bin/standalone.sh.$BACKUPDATE
sed -i '/NODE_NAME="iamnode01"/NODE_NAME="iamnode02"/g'
$JBOSS02_IM_HOME/bin/standalone.sh
sed -i '/#IDM_OPTS="$IDM_SOCKET_BINDING_PORT_OFFSET=100 -Djboss.node.name=iamnode02"/#IDM_OPTS="$IDM_SOCKET_BINDING_PORT_OFFSET=100 -Djboss.node.name=iamnode02/g'
$JBOSS02_IM_HOME/bin/standalone.sh
sed -i '$!standalone-full-ha.xml.iamnode01.xml|$STANDALONE_CONFIGURATION|g'
$JBOSS02_IM_HOME/bin/standalone.sh
sed -i '$!im_01im_02|g' $JBOSS02_IM_HOME/bin/standalone.sh
```

```
cp -r -p $JBOSS02_IM_HOME/bin/jboss-cli.sh $JBOSS02_IM_HOME/bin/jboss-
cli.sh.$BACKUPDATE
cp -r -p $JBOSS02_IM_HOME/bin/jboss-cli.xml $JBOSS02_IM_HOME/bin/jboss-
cli.xml.$BACKUPDATE
sed -i "s|im_01|im_02|g" $JBOSS02_IM_HOME/bin/jboss-cli.sh
sed -i "s|9999|1009|g" $JBOSS02_IM_HOME/bin/jboss-cli.xml

echo "# Update embedded Workpoint Workflow Server configuration to use correct
path for workflow.log"
echo "# and correct port for workflow server"
cp -r -p $JBOSS01_IM_HOME/standalone/deployments/iam_im.ear/config/workpoint-
server.properties
$JBOSS01_IM_HOME/standalone/deployments/iam_im.ear/config/workpoint-
server.properties.$BACKUPDATE
sed -i
"s|workpoint.gateway.url=http://localhost:8080/wpGateway|workpoint.gateway.url=h
tp://localhost:$PORT/wpGateway|g"
$JBOSS01_IM_HOME/standalone/deployments/iam_im.ear/config/workpoint-
server.properties
sed -i
"s|[#log4j.appenders.WSFile1.File=./WorkPoint.log|log4j.appenders.WSFile1.File=$JBOSSO
2_IM_HOME/standalone/log/WorkPoint.log|g"
$JBOSS01_IM_HOME/standalone/deployments/iam_im.ear/config/workpoint-
server.properties

echo "# update the auto-startup script for JBOSS02 Node"
echo "# replace im_01 with im_02"
echo ""
cp -r -p /etc/init.d/jboss-im_01 /etc/init.d/jboss-im_02
sed -i 's/im_01/im_02/g' /etc/init.d/jboss-im_02
sed -i "s|standalone-full-ha.xml.iamnode01.xml|$STANDALONE_CONFIGURATION|g"
/etc/init.d/jboss-im_02
cp -r -p /etc/init.d/jboss-im_02 $JBOSS02_IM_HOME/bin/jboss-im_02.$BACKUPDATE
chkconfig --del jboss-im_02
chkconfig --add jboss-im_02
chkconfig jboss-im_02 on

chown -R $USER:$GROUP $JBOSS_ROOT
rm -rf $JBOSS02_IM_HOME/standalone/log/*

head -32 $JBOSS02_IM_HOME/bin/standalone.sh | tail -22
systemctl daemon-reload

echo ""
echo ""
echo " Launch JBOSS node02 /etc/init.d/jboss-im_02 start "
echo ""
echo ""
echo " To stop: Use /etc/init.d/jboss-im_02 stop or "
echo "su - jboss;$JBOSS02_IM_HOME/bin/jboss-cli.sh --connect --
controller=localhost:10099 --command=:shutdown -timeout=10000"
echo ""
echo ""
```

CLI Examples: CA IMCD (Corporate Directory/Userstore)

- CA Corporate User Store / Directory
 - Assumption:
 - CA Directory binaries already installed (assumed to be latest GA release supported by IM or later version)
 - Used CA Directory Server from IAM Suite ISO Install Media or CA Directory ISO Install Media
 - dsa service account is created and has .dxprofile associated with .bash_profile or ksh .profile
 - Use CA IM Server from IAM Suite ISO Install Media
 - step070_-dsa-_Create_IMCD_DSA_for_IM_by_su_-_dsa_user
- Goals/Tasks
 - Create “stub” DSA with predefined LDAP structure & service accounts using the CA CloudMinder “open” schema = cam; include structural and auxiliary classes.
 - # Address: localhost:41389
 - # BaseDN: ou=cam,o=ca
 - # AdminDN: cn=diradmin,ou=serviceaccount,ou=cam,o=ca

CLI Examples: CA SSO(SiteMinder Integration)

- CA SSO Integration with CA IAM Suite
- Assumption:
 - CA SSO Binaries are deployed AFTER the IM installation
 - This process will clarify the integration steps between IM and SSO, instead of relying on a “blackbox” install wizard.
 - CA Directory Binaries already installed (assumed to be latest GA release supported by IM or later version)
 - Used CA Directory Server from IAM Suite ISO Install Media or CA Directory ISO Install Media
 - smuser service account is created and has SSO profile with .bash_profile or ksh .profile
 - Use CA SSO Server from SSO ISO Install Media
 - Deploy CA SSO binaries with NO configurations; apply configurations and integration after base installation.
- step080_root_SiteMinder_SSO_OS_Libraries_and_Entropy
- step081_root_Install_SiteMinder_PolicyServer_no_config
- step082_dsa_Create_SiteMinder_Policy_Store_via_CA_Directories_DSAs
- step084_smuser_Load_SM_Base_Policy_Structure
- step085_smuser_Create_FSSUI_4x_Agent_with_SM_Perl
- step086_smuser_Create_copies_of_default_HCO_and_ACO_for_IM_Integration
- step087_root_Add_Apache_2-2_for_FSSUI_to_Build_4x_Agent
- step088_root_Create_autostart_for_apache_httpd_for_fssui



CLI Example: step080_-root-_SiteMinder_SSO_OS_Libraries_and_Entropy

```
# Install OS x86 Libraries & Entropy for SiteMinder PS
#
# Check for all OS libraries x64 and x86 required for SiteMinder
# Reference: https://support.ca.com/cadocs/0/CA%20SiteMinder%2012%2052-ENU/
# Bookshelf_Files/HTML/docs/index.htm?toc.htm?ps-install.html
#
BACKUPDATE=`date +%Y%m%d_%H%M%S_%N`
STARTTIME=`date`
_PASSWORD=Password01
USER=smuser
GROUP=smuser

### Add/update all SM x86 packages for SM policy server install
echo "### Update all SM x86 packages for SM policy server install ###"
yum -y install libstdc*686 libXau*686 libxcb*686 compat-db*686 libX11*686
libXrender*686 expat*686 freetype*686 fontconf*686 libICE*686 libSM*686
libXext*686 compat-libstdc*686 compat-db*686 libXi*686 libXtst*686 libXft*686
libXt*686 libXp*686 ksh*64
echo "### Install libuuid ###"
yum -y --setopt=protected_multilib=false install libuuid*686

# Create smuser account for SiteMinder PS
echo ""
echo "### Create a new UNIX account with the default shell as ksh. ###"
adduser -U -M -d /opt/CA/siteminder -s /bin/ksh -p $_PASSWORD $USER

# Check nofile / open files parameter value > 1024
echo ""
echo "### Check if nofiles / open files parameter's value is > 1024 ###"
echo "### View the UNIX System Parameters: ulimit -a ###"
ulimit -a | grep "files"

# Validate smuser in /etc/passwd
echo ""
echo "### check on user account: $USER ###"
cat /etc/passwd | grep $USER

# Check entropy
echo ""
echo "### Check on entropy ###"
echo "### Install lsof process ###"
yum -y install lsof
echo "### List ALL processes using /dev/random and dev/urandom ###"
echo '#lsof | grep -E "/dev/[u]{0,1}random"'
```

```
# RHEL / CentOS 7.x RNGD
# Note: Forwarding request to 'systemctl enable rngd.service'.
echo ""
echo "# Centos 7.x RNGD"
echo "### Install RNGD on CentOS 7 ###"
yum -y install rng-tools
echo ""
echo "EXTRAOPTIONS=-i -o /dev/random -r /dev/urandom -t 10 -W 2048" >
/etc/sysconfig/rngd
#cp -r -p /etc/sysconfig/rngd /etc/sysconfig/rngd.$BACKUPDATE
#sed -i 's|EXTRAOPTIONS=""|EXTRAOPTIONS="-i -o /dev/random -r /dev/urandom -t 10
-W 2048"|g' /etc/sysconfig/rngd
cat /etc/sysconfig/rngd
echo "### Enable RNGD to auto-start on reboot ###"
systemctl enable rngd.service
systemctl start rngd.service

echo ""
echo "### Validate Entropy > 1000 ###"
echo "### Current Entropy: `cat /proc/sys/kernel/random/entropy_avail` ###"
echo ""
echo "### Monitor Entropy: watch -n 1 cat /proc/sys/kernel/random/entropy_avail
###"
echo ""
echo "### View current configuration: cat /etc/sysconfig/rngd"
echo ""

#####
#
# Time Response
echo "Done @ `date`"
echo "Started @ $STARTTIME"
```

CLI Example: step081_root_Install_SiteMinder_PolicyServer_no_config



H:\sandbox\
0-19\steps\step08

```
#!/bin/bash
# Install SiteMinder / SSO Policy Server with minimal configuration
# To automate installations
# SMPS require 32bit JVM (JRE)
# /opt/CA/java/jdk1.7.0_71_x86/jre
# SiteMinder folder: /opt/CA/siteminder

BACKUPDATE=`date +%Y%m%d_%H%M%S_%N`
STARTTIME=`date`
JAVA_ROOT=/opt/CA/jdk
JAVA_VER=jdk1.7.0_71
JAVA_HOME="$JAVA_ROOT"/"$JAVA_VER"_x86
PROPERTIESFOLDER=/opt/CA/media/steps/properties
MEDIAFOLDER=/opt/CA/media/iso
SMPS_HOME=/opt/CA/siteminder
AAS_HOME=/opt/CA/aas
USER=suser
GROUP=smuser
PATH=$PATH:$JAVA_HOME/bin

echo "JAVA_HOME=$JAVA_HOME"
echo "PROPERTIESFOLDER=$PROPERTIESFOLDER"

# Cleanup: Stop SiteMinder to uninstall
echo "### Stop SiteMinder services prior to uninstall ###"
echo "### Ignore any error message if this is the first installation ###"
/etc/init.d/siteminder stop >/dev/null 2>&1
$SMPS_HOME/stop-ps >/dev/null 2>&1
$SMPS_HOME/stop-all >/dev/null 2>&1
chown -R $USER:$GROUP $SMPS_HOME >/dev/null 2>&1
chown -R $USER:$GROUP $AAS_HOME >/dev/null 2>&1
chown -R $USER:$GROUP $MEDIAFOLDER/ca/casso >/dev/null 2>&1
chmod -R 555 $MEDIAFOLDER/ca/casso/ps-12.52-linux*.bin >/dev/null 2>&1
chmod -R 555 $MEDIAFOLDER/ca/casso/ps-12.52-linux/smreg >/dev/null 2>&1
chmod -R 555 $MEDIAFOLDER/ca/casso/ps-12.52-linux/XPS* >/dev/null 2>&1
chmod -R 555 $MEDIAFOLDER/ca/casso/ps-12.52-linux/agents*.bin >/dev/null 2>&1

# Uninstall SiteMinder
echo "## Uninstall prior SiteMinder Policy Server ##"
echo "## Wait 5 min for SM Policy Server to uninstal. ##"
echo "## Execute the command: watch -n 1 du -hs /opt/CA/siteminder ##"
echo "## to monitor the installation progress to 665+ MB ##"
echo ""
echo "## Uninstall SM AAS - RiskMinder Component ##"
$AAS_HOME/install_config_info/ca-aas-uninstall/uninstall -
$AAS_HOME/install_config_info/ca-aas-uninstall/installvariables.properties -silent
>/dev/null 2>&1
echo "## Uninstall SM PS ##"
$SMPS_HOME/install_config_info/ca-ps-uninstall/uninstall -
$SMPS_HOME/install_config_info/ca-ps-uninstall/installvariables.properties -silent
>/dev/null 2>&1
```

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```
# Remove folders for aas and siteminder
echo ""
echo "## Total Clean Up - Remove folders for aas and siteminder ##"
rm -rf $AAS_HOME
rm -rf $SMPS_HOME

mkdir -p $SMPS_HOME
# Install SMPS with minimal configuration
echo ""
echo "## Install SiteMinder Policy Server with minimal configurations ##"
echo "## Please wait 5-10 minutes as the files are extracted then installed ##"
echo "## du -hs /opt/CA/siteminder will report ~ 665+ MB upon completion ##"
echo ""
echo "## Open 2nd terminal window and execute: watch -n 1 du -hs
/opt/CA/siteminder ##"
# Install SiteMinder Policy Server (minimal configurations)
$MEDIAFOLDER/ca/casso/ps-12.52-linux/ca-ps-12.52-linux.bin -i silent -f
$PROPERTIESFOLDER/smps-silent-minimal-config.properties

# check installation size
du -hs $SMPS_HOME
# check SiteMinder Version
$SMPS_HOME/bin/Version

# Update SeLinux context for siteminder
echo "## Update SeLinux context for siteminder ##"
chcon -t textrel_shlib_t /opt/CA/siteminder/lib/* >/dev/null 2>&1
chcon -t textrel_shlib_t $JAVA_HOME/jre/lib/i386/* >/dev/null 2>&1
chcon -t textrel_shlib_t $JAVA_HOME/jre/lib/i386/server/* >/dev/null 2>&1

echo "## Update ownership of siteminder folders ##"
chown -R $USER:$GROUP $SMPS_HOME >/dev/null 2>&1
chown -R $USER:$GROUP $AAS_HOME >/dev/null 2>&1
chown -R $USER:$GROUP /tmp/GCL* >/dev/null 2>&1

# Auto Start SiteMinder
echo "## Auto Start SiteMinder with start status after level 90 ##"
echo "# After Dxserver has started but before HTTPD and JBOSS"
echo "#!/bin/bash" > $SMPS_HOME/S90siteminder
echo "#chkconfig: - 90 20" > $SMPS_HOME/S90siteminder
echo "chown -R $USER:$GROUP $SMPS_HOME" >> $SMPS_HOME/S90siteminder
echo "chown -R $USER:$GROUP $AAS_HOME" >> $SMPS_HOME/S90siteminder
cat $SMPS_HOME/S98sm >> $SMPS_HOME/S90siteminder

cat << EOF > $SMPS_HOME/S90siteminder
#!/bin/bash
#chkconfig: - 90 20
#This script starts and stops the siteminder policy server at boot time
USER=suser
GROUP=smuser
# Ensure all folders for siteminder and aas are owned by the correct account
chown -R $USER:$GROUP /opt/CA/siteminder
chown -R $USER:$GROUP /opt/CA/aas
EOF
```

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```
case "$1" in
'start')
su - $USER -c /opt/CA/siteminder/start-all &
touch /var/lock/subsys/siteminder
;;
'stop')
su - $USER -c /opt/CA/siteminder/stop-all &
rm -rf /var/lock/subsys/siteminder
;;
esac
EOF

chmod 555 $SMPS_HOME/S90siteminder
chown $USER:$GROUP $SMPS_HOME/S90siteminder
echo ""
echo "## Ignore the follow error message(s) if script is not run as root ##"
cp -r -p $SMPS_HOME/S90siteminder /etc/init.d/siteminder
chkconfig --del siteminder
chkconfig --add siteminder
chkconfig siteminder on

#####
##### Update missing home variable entry in the AAS component of SiteMinder #####
##### Issues is seen on startup / shutdown of SiteMinder #####
cp -r -p /opt/CA/aas/sbin/arrfenv /opt/CA/aas/arrfenv.$BACKUPDATE
sed -i 's/ARCOT_HOME=ARCOT_HOME>/ARCOT_HOME=\\Opt/CA/aas/g'
/opt/CA/aas/sbin/arrfenv

#####
# Update smuser profile to assist with environment variables and X11 Redirect
#
# Note: If CA SSG is installed; it will create an OS default profile
# that appears to impact, but doesn't but is useful to rename profile
# to avoid confusion /etc/profile.d/ssgen.sh
# ssgen.sh.2015-07-15_rename_to_avoid_impacting_sm_solution
touch $SMPS_HOME/.kshrc
cp -r -p $SMPS_HOME/.kshrc $SMPS_HOME/.kshrc.$BACKUPDATE
cp -r -p /opt/CA/siteminder/smprofile.ksh /opt/CA/siteminder/.kshrc
echo "#### Added to address DISPLAY variable issue with Putty X11 ##### >>
/opt/CA/siteminder/.kshrc
echo "DISPLAY=$(who -m | gawk -F'(' '{ print $2}' | gawk -F')' '{print $1}')>0.0;export
DISPLAY" >> /opt/CA/siteminder/.kshrc

chown -R $USER:$GROUP $SMPS_HOME >/dev/null 2>&1
chown -R $USER:$GROUP $AAS_HOME >/dev/null 2>&1

#####
echo
#####
#
```





CLI Example: step084_smuser_Load_SM_Base_Policy_Structure

```
# Siteminder Policy Store - update SM business logic
#
BACKUPDATE='date +%Y%m%d_%H%M%S_%N'
STARTTIME='date'
MEDIAFOLDER=/opt/CA/media
SMHOME=/opt/CA/siteminder
_PASSWORD=Password01
DN_SMPS="cn=diradmin,ou=serviceaccount,ou=SiteMinder,ou=Netegrity,o=smps"
DN_SMKS="cn=diradmin,ou=serviceaccount,ou=SiteMinder,ou=Netegrity,o=smks"
DN_SMSS="cn=diradmin,ou=serviceaccount,ou=sessionstore,o=smss"
USER=smuser
GROUP=smuser

### Source SM environmental variables
echo "### Source SM environmental variables ###"
. $SMHOME/ca_ps_env.ksh
chown -R $USER:$GROUP $SMHOME

### Update SM Registry to use CA Directory Policy Store
echo "### Updating SM Registry to use CA Directory Policy Store via smldapsetup"
. ./opt/CA/siteminder/ca_ps_env.ksh
$SMHOME/bin/smldapsetup status -hlocalhost -p22389 -d$DN_SMPS -
w$_PASSWORD -ro=smps -v
$SMHOME/bin/smldapsetup reg -hlocalhost -p22389 -d$DN_SMPS -
w$_PASSWORD -ro=smps -v
$SMHOME/bin/smldapsetup status -hlocalhost -p23389 -d$DN_SMKS -
w$_PASSWORD -ro=smks -v -k1
$SMHOME/bin/smldapsetup reg -hlocalhost -p23389 -d$DN_SMKS -
w$_PASSWORD -ro=smks -v -k1

### Start SM Policy Server
echo "### Start SM Policy Server & Create 1st Backup before loading policies ###"
cd $SMHOME/log
$SMHOME/start-ps
XPSExport -xb -npass -vT
XPSExport_xb_npass_before_any_updates_to_smpls_policy_store_`date
+%Y%m%d_%H%M%S_%N`.xml

### Reset SM Super User Password using ISOs smreg utility
echo "### Reset SM Super User Password using ISOs smreg utility ###"
$MEDIAFOLDER/iso/ca/casso/ps-12.52-linux/smreg -su $_PASSWORD
cd $SMHOME/log
XPSExport -xb -npass -vT XPSExport_xb_npass_after_new_smpls_password_`date
+%Y%m%d_%H%M%S_%N`.xml

### Load Base SM Master Policies
echo "### Load Base SM Master Policies ###"
$SMHOME/bin/XPSDDInstall $SMHOME/xps/dd/SmMaster.xdd -vT
cd $SMHOME/log
XPSExport -xb -npass -vT
XPSExport_xb_npass_after_new_smpls_smmaster_xdd_policies_`date
+%Y%m%d_%H%M%S_%N`.xml
```

```
### Load Base SM Secure Policies
echo "### Load Base SM Secure Policies ###"
$SMHOME/bin/XPSImport $SMHOME/db/smpolicy-secure.xml -npass -vT
cd $SMHOME/log
XPSExport -xb -npass -vT
XPSExport_xb_npass_after_new_smpls_smpolicy_secure_policies_`date
+%Y%m%d_%H%M%S_%N`.xml

echo "Start @ $STARTTIME"
echo "Done @ `date`"
echo ""
echo "View XML files under $SMHOME/log and use CA Community Tool SM Policy
Reader to view deltas"
echo ""
echo ""
```

CLI Example: step085_-smuser-_Create_FSSUI_4x_Agent_with_SM_Perl



H:\sandbox\
J-19\steps\step085

```
# Create limited UI for use with IM / SM integration
#
$STARTTIME='date'
$SMHOME=/opt/CA/siteminder
LD_LIBRARY_PATH=/opt/CA/java/jdk1.7.0_71_x86/jre/lib/i386/server:$LD_LIBRARY_PATH
export LD_LIBRARY_PATH

### Use SM Perl to create 4x Agent
echo "# Use SM Perl to create 4x Agent"
.$SMHOME/ca_ps_env.ksh

cat << 'EOF' > $SMHOME/CLI/bin/fssuiagent.pl
#!/opt/CA/siteminder/CLI/bin/perl
use FindBin qw($Bin);
use lib "$Bin/..lib";
use Netegrity::PolicyMgtAPI;
use Netegrity::AgentAPI;
#####
# use diagnostics;use strict;use warnings;
# Use this script to create the agent name and secret
# required for logging into the FSS Admin UI.

my $secret="Password01";
my $policymgtpapi= Netegrity::PolicyMgtAPI->New();
my $session = $policymgtpapi->CreateSession('siteminder',$secret,'127.0.0.1');
#my $audit = $policymgtpapi->DisableAudit();
my $agentType= $session->GetAgentType("Web Agent");
$session->CreateAgent("4xagent",$agentType,"FSSUI 4xagent","127.0.0.1",$secret);
my $agent = $session->GetAgent("4xagent");
print "Agent Name = ". $agent->Name(). "\n";
#####
EOF

#####
# Create SM 4xagent for FSSUI
cd $SMHOME/CLI/bin
$SMHOME/CLI/bin/perl fssuiagent.pl

cd $SMHOME/log
XPSExport -xb -npass -vT
XPSExport_xb_npass_after_new_fssui_4xagent_added_`date
+%Y%m%d_%H%M%S_%N`.xml
#####
echo ""
echo "Done @ `date`"
echo "Started @ $STARTTIME"
echo ""
```



CLI Example: step086_smuser_Create_copies_of_default_HCO_and_ACO_for_IM_Integration

```
# Jumpstart and Create a SM Tunnel Agent (4xagent) for IM Integration
# SiteMinder CLI Perl Process
#
# Alternatively, the SM WAMUI or SM FSU! tools may be used
# by an administrator to manually create the objects
#
# NOTE: Replace IP/HOSTNAME TOKENS WITH SITEMINDER POLICY SERVER IP/HOSTNAME
# NOTE: Update token
CHANGE_TO_SM_POLICY_SERVER_HOSTNAME_OR_IP_HERE

echo "# Run script as smuser on SMPS Server"
echo "# Ensure shell environmental variables are set correctly"
SMPS_HOME=/opt/CAsiteminder
SMPS_HOSTNAME=sandbox01

# IMWA = IM Application Server - Needed for tunnel agent definition
IMWA01_HOSTNAME='hostname'
SMWA01_HOSTNAME='hostname'
SMWA01_FQDN='hostname -f'
SMWA01_IP='hostname -i'
SMWA01_WBAGENT=$[SMWA01_HOSTNAME]_web_agent_for_im

#SMWA01_IP=192.168.92.129
#_PASSWORD=Password01
SM_AC0_NAME=AC0_IM
SM_HCO_NAME=HCO_IM
USER=smuser
GROUP=smuser

echo "# Set Environmental variable for smuser"
echo "# and change local directory to CLI folder for PERL scripts"
. $SMPS_HOME/casps_env.ksh
cd $SMPS_HOME/CL/bin/
chown -R $USER:$GROUP $SMPS_HOME

echo "Create IM/SM Tunnel Agent via SM Perl Scripts"
# NOTE: Escape ALL $ to allow variables to be used within the EOF section
# NOTE: Use EOF without quotes to allow variables to pass through
echo ""
echo ""
cat <> EOF > $SMPS_HOME/CL/bin/ims_web_agent.pl
#####
##### USED TO CREATE CA IM-SM TUNNEL AGENT #####
#####

#/opt/CAsiteminder/CL/bin/perl
use FindBin qw($Bin);
use lib "$Bin/../lib";
use Netegrity::PolicyMgtAPI;
use Netegrity::AgentAPI;
#####
##### use diagnostics;usestrict;usewarnings;
# Use this script to create the agent name and secret
# required for the CA IM tunnel agent with raxml
#####
##### my $secret="S_PASSWORD";
# my $policymgtpapi = Netegrity::PolicyMgtAPI->New();
# my $session = $policymgtpapi->CreateSession('smiteminder', 'Secret', '127.0.0.1');
# my $audit = $policymgtpapi->DisableAudit();
# my $agentType = $session->GetAgentType("Web Agent");
# $session->CreateAgent('ca_im_session_tunnel', $agentType, 'Used for the CA IM tunnel agent to SMPS', '$SMWA01_HOSTNAME', $secret);
# Netegrity::PolicyMgtAgent->ConvertToLegacy();
#####
##### EOF
```

```
<<< EOF > $SMPS_HOME/CL/bin/ims_web_agent.pl
#####
##### USED TO CREATE SM WEB AGENT #####
#####
#/opt/CAsiteminder/CL/bin/perl
use FindBin qw($Bin);
use lib "$Bin/../lib";
use Netegrity::PolicyMgtAPI;
use Netegrity::AgentAPI;
#####
##### use diagnostics;usestrict;usewarnings;
# Use this script to create the agent name and secret
# required for the CA SM Web Agent for the IM Web Server
#####
##### my $secret="S_PASSWORD";
# my $policymgtpapi = Netegrity::PolicyMgtAPI->New();
# my $session = $policymgtpapi->CreateSession('smiteminder', 'Secret', '127.0.0.1');
# my $audit = $policymgtpapi->DisableAudit();
# my $agentType = $session->GetAgentType("Web Agent");
# $session->CreateAgent("$[SMWA01_HOSTNAME]_web_agent_for_im", $agentType, 'Used for CA SM Web Agent to SMPS for
# IMWA', '$SMWA01_HOSTNAME', $secret);
# Netegrity::PolicyMgtAgent->ConvertToLegacy();
#####
##### EOF

echo ##### IM/SM TUNNEL AGENT #####
cat $SMPS_HOME/CL/bin/ims_agent.pl
echo ##### IM/SM TUNNEL AGENT #####
echo ""
echo ""
#####
##### use diagnostics;usestrict;usewarnings;
# Execute the SM PERL CLI process to create the SM Tunnel Agent for IM
echo "
#####
##### cd $SMPS_HOME/CL/bin
perl ims_agent.pl
cd $SMPS_HOME/log
XPSEsport -xb -npass -q -vT
XPSEsport -xb -npass_after_new_im_sm_tunnel_agent_for_im_added_date +%Y%m%d_%H%M%S_N.xml

echo ##### SM WEB AGENT #####
# Note: Used this process instead of SM CLI Perl, as there was no obvious
# duplicate API process
# The recommendation per SM bookshelves are to "copy" a prior default
# version, to ensure
# all parameters are copied as well. (See reference links at bottom of script)
# Set EOF without quotes to allow variables to pass through
# The GUID for the two (2) SM objects were change to avoid collisions with
existing objects
# The last value in the GUID was changed to all to: ffffffff
#
cat <> EOF > $SMPS_HOME/CL/bin/ims_policy.xml
<xmlelement version="1.0" encoding="UTF-8">
<xmlelement xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="C_A_Siteminder_WAM-XPS2.xsd">
<xmlelement version="1">/XPSVersion>
<xmlelement>
<xmlelement>
grep $SM_AC0_NAME $SMPS_HOME/CL/bin/ims_policy.xml
grep AgentName $SMPS_HOME/CL/bin/ims_policy.xml | grep -v
FQHostNames
grep LogoffURI $SMPS_HOME/CL/bin/ims_policy.xml
echo ""
echo ""
# Check the values have changed in the file
grep $SM_AC0_NAME $SMPS_HOME/CL/bin/ims_policy.xml
echo ""
echo ""
# Check three (3) to six (6) ACO tokens' values
echo ""
grep $SMPS_HOSTNAME_4441_4442_4443 $SMPS_HOME/CL/bin/ims_policy.xml
grep $SM_HCO_NAME $SMPS_HOME/CL/bin/ims_policy.xml | grep -v
FQHostNames
grep LogoffURI $SMPS_HOME/CL/bin/ims_policy.xml
echo ""
echo ""
# Check two (2) HCO tokens' values
echo ""
grep $SMPS_HOSTNAME_4441_4442_4443 $SMPS_HOME/CL/bin/ims_policy.xml
grep $SM_HCO_NAME $SMPS_HOME/CL/bin/ims_policy.xml
grep $SM_HCO_NAME $SMPS_HOME/CL/bin/ims_policy.xml

echo "# Execute the SM XPS import process to load the new IM ACO and
HCO objects"
cd $SMPS_HOME/CL/bin/
XPSEimport ims_policy.xml -npass -vT
cd $SMPS_HOME/log
XPSEsport -xb -npass -q -vT
XPSEsport -xb -npass_after_new_sm_web_agent_for_im_added_date +%Y%m%d_%H%M%S_N.xml
+>>>
```

```
<<< EOF > $SMPS_HOME/CL/bin/ims_web_agent.pl
#####
##### USED TO CREATE IM ACO & HCO OBJECTS #####
#####
#/opt/CAsiteminder/CL/bin/perl
use FindBin qw($Bin);
use lib "$Bin/../lib";
use Netegrity::PolicyMgtAPI;
use Netegrity::AgentAPI;
#####
##### use diagnostics;usestrict;usewarnings;
# Use this script to create the agent name and secret
# required for the CA IM and HCO objects
#####
##### my $secret="S_PASSWORD";
# my $policymgtpapi = Netegrity::PolicyMgtAPI->New();
# my $session = $policymgtpapi->CreateSession('smiteminder', 'Secret', '127.0.0.1');
# my $audit = $policymgtpapi->DisableAudit();
# my $agentType = $session->GetAgentType("Web Agent");
# $session->CreateAgent('im_aco', $agentType, 'Used for IM ACO', '$IMWA01_HOSTNAME', $secret);
# $session->CreateAgent('im_hco', $agentType, 'Used for IM HCO', '$IMWA01_HOSTNAME', $secret);
# Netegrity::PolicyMgtAgent->ConvertToLegacy();
#####
##### EOF

echo "# The ACO object is a duplicate of the default Apache ACO
(smpolicy.xml)"
echo "# with the GUID value change to avoid a collision"
echo "# The HCO object is a duplicate of the default HCO (smpolicy.xml)"
echo "# with the GUID value change to avoid a collision"
echo ""
echo "# Three (3) tokens of six (6) are the min needed for the ACO object"
echo "# Extra AgentName values have been defined as well for the ACO
object"
echo "#"
echo "# Two (2) tokens have been updated in the HCO object."
echo ""

<Object Class="CA.SM:AgentConfig" Xid="CA.SM:AgentConfig@21-ea30a01-e8f9-11d5-ba50-ffffffff" UpdatedBy="IMSTUB"
UpdateMethod="internal" ExportType="Replace">
<Property Name="CA.SM:AgentConfig.Attributes">

<StringValue>AgentName1=0:$SMWA01_HOSTNAME</StringValue>
<StringValue>AgentName2=0:$SMWA01_FQDN</StringValue>
<StringValue>AgentName3=0:$SMWA01_IP</StringValue>

</Object>

<Object Class="CA.SM:HostConfig" Xid="CA.SM:HostConfig@21-ea30a00-e8f9-11d5-ba50-ffffffff" UpdatedBy="IMSTUB"
UpdateMethod="internal" ExportType="Replace">

<StringValue>$SMPS_HOSTNAME_4441_4442_4443</StringValue>
<Property Name="CA.SM:HostConfig.PolicyServer">
<StringValue>$SMPS_HOSTNAME,4441,4442,4443</StringValue>
<Property Name="CA.SM:HostConfig.Name">
<StringValue>$SM_AC0_NAME</StringValue>
<Property Name="CA.SM:HostConfig.Attributes">
<StringValue>#DefaultLocale=0</StringValue>
<StringValue>#ClientLocalePreferred=0</StringValue>
<Property Name="CA.SM:HostConfig.Attributes">-->
<Property Name="CA.SM:HostConfig.Name">
<StringValue>$SM_HCO_NAME</StringValue>
</Property>
</Object>

<Object Class="CA.SM:HostConfig" Xid="CA.SM:HostConfig@21-ea30a00-e8f9-11d5-ba50-ffffffff" UpdatedBy="IMSTUB"
UpdateMethod="internal" ExportType="Replace">

<StringValue>$SMPS_HOSTNAME_4441_4442_4443</StringValue>
<Property Name="CA.SM:HostConfig.PolicyServer">
<StringValue>$SMPS_HOSTNAME,4441,4442,4443</StringValue>
<Property Name="CA.SM:HostConfig.Name">
<StringValue>$SM_HCO_NAME</StringValue>
</Property>
</Object>

</PolicyData>
</XPS>
EOF

echo ""
echo "# Check the values have changed in the file
$SMPS_HOME/CL/bin/ims_policy.xml"
echo ""
echo "# Check three (3) to six (6) ACO tokens' values"
echo ""
grep $SM_AC0_NAME $SMPS_HOME/CL/bin/ims_policy.xml
grep AgentName $SMPS_HOME/CL/bin/ims_policy.xml | grep -v
FQHostNames
grep LogoffURI $SMPS_HOME/CL/bin/ims_policy.xml
echo ""
echo ""
# Check two (2) HCO tokens' values
echo ""
grep $SMPS_HOSTNAME_4441_4442_4443 $SMPS_HOME/CL/bin/ims_policy.xml
grep $SM_HCO_NAME $SMPS_HOME/CL/bin/ims_policy.xml
grep $SM_HCO_NAME $SMPS_HOME/CL/bin/ims_policy.xml

echo "# Execute the SM XPS import process to load the new IM ACO and
HCO objects"
cd $SMPS_HOME/CL/bin/
XPSEimport ims_policy.xml -npass -vT
cd $SMPS_HOME/log
XPSEsport -xb -npass -q -vT
XPSEsport -xb -npass_after_new_sm_web_agent_for_im_added_date +%Y%m%d_%H%M%S_N.xml
+>>>
```

```
<<< EOF > $SMPS_HOME/CL/bin/ims_web_agent.pl
#####
##### Extra Steps to occur on J2EE JBOSS Server where IM EAR has been
installed #####
#####
# Step 01: Edit the raxml file located in
# VidentityMinder.ear/policyserver.rar/META-INF, as follows:
# Set Enabled = true.
# Set ConnectionURL = $ITEMINDER_POLICY_STORE_HOSTNAME_OR_IP
# Set UserName = siteminder
# Set AdminSecret = {PBES}; format
# Encrypt the SiteMinder administrator's password using the Identity
Manager Password Tool
# ..\CA\IM Suite\Identity
# Manager\tools\PasswordTool\pwdtools.bat (or pwdtools.sh)
# Note: Add the string "{PBES}" to the beginning of the encrypted
password
# produced by the Password Tool, before adding it to the
AdminSecret property.
# Set AgentName = ims_tunnel_agent
# Set AgentSecret = {PBES}; format
# Encrypt the Agent's password using the Identity Manager Password
Tool
# and put it in the AgentSecret property.
# Note: Add the string "{PBES}" to the beginning of the encrypted
password
# produced by the Password Tool, before adding it to the
AgentSecret property.

# Step 02: Edit the web.xml file located in \identityMinder.ear\
user_console.war\WEB-INF,
# Set FrameworkFilter property to Enabled = false.
# This will disable IM only authentication
#
# Reference: PWD tool
# https://support.ca.com/cadocs/0/CA%20Identity%20Manager%2012%20206
%20%20-ENU\Bookshelf_Files\HTML\docs\index.htm?toc.htm#FIPS_Password_Tool
.html
#
# Step 03: Performance update - Edit the policyserver-service.xml from
<JBoss_home>/server/default/deploy/viam_im.ear/policyserver_rar/META-
INF,
# Set ConnectionMax = 20 (Sets the maximum number of connections
to the proxy server)
# Set ConnectionMin = 2 (Sets the minimum number of connections
to the proxy server)
# Set ConnectionStep = 2x (Sets the number of additional connections
to open when
# all the agent connections are in use)
# Set ConnectionTimeout = 60 (Specifies the amount of time in seconds
that the agent
# is required to wait to connect to SiteMinder before
timing out)
# Restart the application server.
#
# Reference:
# https://support.ca.com/cadocs/0/CA%20Identity%20Manager%2012%20206
%20%20-ENU\Bookshelf_Files\HTML\docs\index.htm?toc.htm?7463444.html
#
# Reference: Troubleshooting IM/SM for raxml settings
#
# https://support.ca.com/cadocs/0/CA%20Identity%20Manager%2012%20206
%20%20-ENU\Bookshelf_Files\HTML\docs\index.htm?toc.htm?7101131.html#021
2717
#
# Ensure mod_jk.so is available for Apache and JBOSS (OR use mod_proxy
built-in to Apache HTTPD 2.2.x)

#
# https://docs.jboss.org/author/display/AS71/Using+mod_jk+with+JBoss+AS
7
# https://developer.jboss.org/wiki/usingmodjk12withjboss
#
# https://support.ca.com/cadocs/0/CA%20Identity%20Manager%2012%20206
%20%20-ENU\Bookshelf_Files\HTML\docs\index.htm?toc.htm?7443936.html
```

CLI Example: step087_root_Add_Apache_2-2_for_FSSUI_to_Build_4x_Agent



H:\sandbox\
0-19\steps\step08

```
# Apache HTTPD 2.2.x download at
# http://httpd.apache.org/download.cgi?apache22
#
STARTTIME=`date`
BACKUPDATE=`date +%Y%m%d_%H%M%S_%N`
HTTPD_FSSUI_HOME=/opt/CA/httpd_fssui
HTTPD_VER=2.2.31
MEDIAFOLDER=/opt/CA/media/iso
SMPS_HOME=/opt/CA/siteminder
USER=smuser
GROUP=smuser
```

```
### Clean up prior Apache HTTPD installation
echo "### Clean up prior Apache HTTPD installation ###"
rm -rf $MEDIAFOLDER/apache/httpd-$HTTPD_VER
rm -rf $HTTPD_FSSUI_HOME
```

```
### Extract Apache HTTPD 2.2.x
echo "## Extract Apache HTTPD $HTTPD_VER ##"
cd $MEDIAFOLDER/apache
tar zxf $MEDIAFOLDER/apache/httpd-$HTTPD_VER.tar.gz >
/dev/null 2>&1
```

```
### Make folders to install Apache httpd
echo "## Make folders to install Apache httpd ##"
mkdir -p $HTTPD_FSSUI_HOME
```

```
### Configure, make and install Apache httpd (no extra modules)
echo "## Configure, make and install Apache httpd ##"
cd $MEDIAFOLDER/apache/httpd-2.2.31
./configure --prefix=$HTTPD_FSSUI_HOME
make
make install
```

```
### Check for modules APR and APR-UTIL are within compiled
code
echo "## Check for modules APR and APR-UTIL are within
compiled code ##"
$HTTPD_FSSUI_HOME/bin/httpd -l | grep mod_so.c
```

```
### Ensure file/folder ownership is for correct user: $USER
echo "## Ensure file/folder ownership is for correct user:
$USER ##"
chown -R $USER:$GROUP $HTTPD_FSSUI_HOME
```

```
### Copy missing ICON file to new path
echo "## Copy missing ICON file to new path ##"
cp -r -p $HTTPD_FSSUI_HOME/manual/images/favicon.ico
$SMPS_HOME/admin
```

```
### Enable SiteMinder Shared Libraries for FSSUI and HTTPD
echo "## Enable SiteMinder Shared Libraries for FSSUI and
HTTPD ##"
echo "## Must be root to update a file under /etc ##"
cat << EOF > $HTTPD_FSSUI_HOME/siteminder.conf
### /etc/ld.so.conf.d/siteminder.conf
/opt/CA/siteminder/lib/
/opt/CA/siteminder/odbc/lib/
/opt/CA/siteminder/CAPKI/Linux/x86/32/lib/
EOF
echo "## Update LD Cache as root user ##"
ldconfig > /dev/null 2>&1

### Update existing ca_ps_env.ksh shell script
echo "## Update existing ca_ps_env.ksh shell script ##"
cp -r -p $SMPS_HOME/ca_ps_env.ksh
$SMPS_HOME/ca_ps_env.ksh.$BACKUPDATE
cat << 'EOF' > $SMPS_HOME/ca_ps_env_fssui.ksh
##### Added XLIB location for smconsole#####
AB 10-12-13
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/usr/lib/vmware-
tools/lib32/libXrender.so.1; export LD_LIBRARY_PATH
# Add in the following two variable to assist with FSSUI
SM ADM UDP PORT=4444; export SM ADM UDP PORT
SM ADM TCP PORT=4444; export SM ADM TCP PORT
# Updated Perl Library to use with FSSUI
PERL5LIB=/opt/CA/siteminder/lib:/opt/CA/siteminder/CLI/lib/
opt/CA/siteminder/CAPKI/lib; export PERL5LIB
# TECH NOTE TEC590517 -Reduce SM CPU from 80% to 6%
chown -R smuser:smuser /tmp/GCL-SiteMinder*
# AB -License Recycle to 60 days
#"SNETE_PS_ROOT/bin/smreg" -siteminderdemo
#####
EOF
echo ". $SMPS_HOME/ca_ps_env_fssui.ksh" >
$SMPS_HOME/ca_ps_env.ksh
chmod 555 $SMPS_HOME/ca_ps_env_fssui.ksh
```

```
# Update Apache HTTPD CONF
echo "## Create SMFSSUI.CONF and append to HTTPD.CONF
##"
cp -r -p $HTTPD_FSSUI_HOME/conf/httpd.conf
$HTTPD_FSSUI_HOME/conf/httpd.conf.before_fssui.$BACKUPDA
TE
echo "include conf/extra/smfsui.conf" >>
$HTTPD_FSSUI_HOME/conf/httpd.conf
cat << 'EOF' > $HTTPD_FSSUI_HOME/conf/extra/smfsui.conf
#####
#Set Environmental Variables
SetEnv SM ADM UDP PORT 4444
SetEnv SM ADM TCP PORT 4444
PassEnv LD_LIBRARY_PATH
SetEnv CAPKIHOME /opt/CA/siteminder/CAPKI
Listen 19090
DocumentRoot "/opt/CA/siteminder/admin"
#####
<IfModule lmpm_netware_module>
<IfModule lmpm_winnnt_module>
User smuser
Group smuser
</IfModule>
</IfModule>
#####
# Load module for NA ServletExec to assist with SM Monitor
# NA ServletExec only supports Apache 2.2.x
# thirdparty-tools/servletexec/servletexec-
6.0/unix/ServletExec_AS_60.sh
# thirdparty-tools/servletexec/servletexec--6.0.0.2_39/unix/
#LoadModule servletexec_module modules/mod_servlet22.so
#####
# Added "satisfy all" switch for SM Monitor and ServletExec,
# since Apache Httpd 2.2.x stops JSP execution by default
<Directory />
Options +Indexes +MultiViews +ExecCGI +FollowSymLinks -
SymLinksIfOwnerMatch
AllowOverride None
Order deny,allow
Satisfy all
<Directory>
#####
# Enabled for FSSUI & SM OneView Monitor Setup / Validation
LogLevel debug
#####
```

```
# This section is for the SM FSSUI {OneView Monitor web app
is setup in ServleExec}
<IfModule alias_module>
PassEnv SNETE_PS_ROOT
Alias /siteminder/ "/opt/CA/siteminder/admin/"
Alias /siteminder/cgi/ "/opt/CA/siteminder/admin/"
<Directory "/opt/CA/siteminder/admin">
Options +Indexes +MultiViews +ExecCGI +FollowSymLinks -
SymLinksIfOwnerMatch
AllowOverride None
Order allow,deny
Allow from all
<Directory>
</IfModule>
#####
# The AddHandler cgi-script .exe allows the FSSUI tool to be
used
# This can be set manually or via the tool
# SNETE_PS_ROOT/install_config_info/ca-ps-config.exe for SM
One Monitor
<IfModule mime_module>
TypesConfig conf/mime.types
AddType application/x-compress .Z
AddType application/x-gzip .tgz
AddHandler cgi-script .cgi
AddHandler cgi-script .exe
</IfModule>
#####
#Default settings in this file.
#ServletExecAdapterConfigFile
"/opt/NewAtlanta/ServletExecAS/config/webadapter.properties"
#####
EOF

echo "## If script is executed by root, update folder
permissions to smuser ##"
echo "## As root, Update folder/file ownership to smuser ##"
echo "# chown -R $USER:$GROUP $HTTPD_FSSUI_HOME ##"
chown -R $USER:$GROUP $SMPS_HOME
echo ""
echo "## Note1: If FSSUI certificate is expired, application will
not load within FF, IE, or Chrome ##"
echo "## On WinOS: Open Control Panel / Programs / Java
Control Panel / Navigate to Security Tab; ##"
echo "## Then add URL to Exception List Site with port ##"
echo ""
echo "## Example: http://hostname -i:19090 "
echo ""
echo "## Start fssui apache httpd with:
/etc/init.d/httpd.fssui start "
echo "## after creating the auto-start with next script"
ca
technologies
```

CLI Example: step088_root_Create_autostart_for_apache_httpd_for_fssui



H:\sandbox\
0-19\steps\step08

```
# Create auto start script for httpd.fssui as root
#
#####
STARTTIME=date`  
HTTPD_FSSUI_HOME=/opt/CA/httpd_fssui  
SMHOME=/opt/CA/siteminder

cat << EOF > /etc/init.d/httpd.fssui
#!/bin/bash
#
# Startup script for the Apache Web Server for SiteMinder FSSUI
#
# chkconfig: - 99 15
# description: Apache is a World Wide Web server. It is used to serve \
#           HTML files and CGI to assist with SiteMinder FSSUI
# processname: httpd
# pidfile: $HTTPD_FSSUI_HOME/logs/httpd.pid
# config: $HTTPD_FSSUI_HOME/conf/httpd.conf

# Source function library.
./etc/rc.d/init.d/functions

#####
## Add SM PORTS to allow SM FSSUI to function
SM_ADMIN_UDP_PORT=44444
SM_ADMIN_TCP_PORT=44444
export SM_ADMIN_UDP_PORT SM_ADMIN_TCP_PORT
# Ensure this file is sourced after "function" to get PATH correct
.$SMHOME/ca_ps_env.ksh
#####

# This will prevent initlog from swallowing up a pass-phrase prompt if
# mod_ssl needs a pass-phrase from the user.
INITLOG_ARGS=""

# Path to the apachectl script, server binary, and short-form for messages.
apachectl=$HTTPD_FSSUI_HOME/bin/apachectl
httpd=$HTTPD_FSSUI_HOME/bin/httpd
pid=$httpd/logs/httpd.pid
prog=httpd
RETVAL=0
```

```
# The semantics of these two functions differ from the way apachectl does
# things -- attempting to start while running is a failure, and shutdown
# when not running is also a failure. So we just do it the way init scripts
# are expected to behave here.
start() {
    echo -n $"Starting $prog: "
    daemon $httpd $OPTIONS
    RETVAL=$?
    echo
    [ \$RETVAL = 0 ] && touch /var/lock/subsys/httpd.fssui
    return \$RETVAL
}
stop() {
    echo -n $"Stopping $prog: "
    killproc $httpd
    RETVAL=$?
    echo
    [ \$RETVAL = 0 ] && rm -f /var/lock/subsys/httpd.fssui \$pid
}
reload() {
    echo -n $"Reloading $prog: "
    killproc $httpd -HUP
    RETVAL=$?
    echo
}
# See how we were called.
case "$1" in
    start)
        start
        ;;
    stop)
        stop
        ;;
    status)
        status $httpd
        RETVAL=$?
        ;;
    restart)
        stop
        start
        ;;
    condrestart)
        if [ -f $pid ] ; then
            stop
            start
        fi
        ;;
esac
```

```
reload)
reload
;;
graceful|help|configtest|fullstatus)
\Sapachectl \$@
RETVAL=\$?
;;
*)
    echo \$"Usage: \$prog {start|stop|restart|condrestart|reload|status}"
    echo \$"          \$fullstatus|graceful|help|configtest"
    exit 1
esac

exit \$RETVAL
EOF

chown -R $USER:$GROUP $HTTPD_FSSUI_HOME
chmod 555 /etc/init.d/httpd.fssui
### Run chkconfig to setup runlevels for which httpd.fssui will run
echo ### Run chkconfig to setup runlevels for which httpd.fssui will run ###
chkconfig --add httpd.fssui
chkconfig --level 2345 httpd.fssui on
chkconfig --list

### Update firewall port for FSSUI 19090 & SM Port 44444 #####
echo ### Update firewall port for FSSUI 19090 & SM Port 44444 #####
firewall-cmd --zone=public --permanent --add-port=19090/tcp
firewall-cmd --zone=public --permanent --add-port=44441/tcp
firewall-cmd --zone=public --permanent --add-port=44442/tcp
firewall-cmd --zone=public --permanent --add-port=44443/tcp
firewall-cmd --zone=public --permanent --add-port=44444/tcp
firewall-cmd --reload

echo ### Start httpd.fssui: /etc/init.d/httpd.fssui start #####
echo ""
echo ### Note 1: If FSSUI certificate is expired, application will not load within FF, IE, or
Chrome #####
echo ### On WinOS: Open Control Panel / Programs / Java Control Panel / Navigate to
Security Tab; #####
echo ### Then add URL to Exception List Site with port #####
echo ### Example: http://hostname:19090 "
echo ### Copy the above link to a browser #####
echo ### To enable NPAPI functionality within Chrome, past the following with the
Chrome URL bar:"#
echo ### chrome://flags/#enable-npapi then click Enable, then relaunch Chrome &
access the FSSUI URL"
```

CLI Examples: CA SSO Web Agent & IM Integration

- CA SSO Web Agent Integration with CA IAM Suite
- Assumption:
 - CA SSO PS & Web SSO Agent Binaries are deployed AFTER the IM installation
 - This process will clarify the integration steps between IM and SSO, instead of relying on a “blackbox” install wizard.
 - Apache Web Servers (latest supported GA release) downloaded and configured as individual Web Servers.
 - Same service ID will own Apache and SSO Web Agent folders to avoid permission issues.
 - Use CA SSO Web Agent from SSO ISO Install Media
- step090_root_Install_Apache_for_CA_IM_and_SM_redirect_to_JBOSS
- step091_root_Install_Ca_SSO_WebAgent_for_Apache
- step092_root_Create_autostart_for_apache_httpd_for_smwa_and_redirect_to_jboss_imwa
- step093_root_Install_SM_Extension_from_CA_IM_r12-6-6_image
- step094a_jboss_Integration_IMWA_and_SMPS_with_ra-xml_and_web-xml_updates
- step094b_jboss_Disable_Integration_IMWA_and_SMPS_with_ra-xml_and_web-xml_updates
- step095a_root_Enable_SM_WA_on_Apache_HTTPD
- step095b_root_Disable_SM_WA_on_Apache_HTTPD

CLI Example: step090_root_Install_Apache_for_CA_IM_and_SM_redirect_to_JBOSS



H:\sandbox\\0-19\steps\step09

```
# Run as root ; permissions will be reset to smuser
#
# Apache HTTPD 2.2.x may be downloaded at
# http://httpd.apache.org/download.cgi#apache22
#
# Use embedded mod_proxy to redirect to JBoss
# https://developer.jboss.org/wiki/UsingModproxyWithJBoss
# Instead of older jk
https://developer.jboss.org/wiki/usingmodjk12withjboss
#
# Notes: When to use mod_jk and when to use mod_proxy for load-balancing
#
# Load balancing is easier to configure using mod_proxy as compared to mod_jk
# mod_proxy works well since version 2.2.6 of Apache httpd.
# mod_proxy_http doesn't forward the SSL information when using http:// proxy
# mod_proxy allows to use https between Apache httpd and JBoss Web
# (See Encrypting connection between httpd and TC).
# mod_proxy offers two options for load-balancing
#
# Add SSL library (SSL Toolkit) needed by Apache
yum -y install openssl-devel

##### VARIABLES #####
STARTTIME="date"
echo "Start at $STARTTIME"
BACKUPDATE="`date +\%Y\%m\%d_\%H\%M\%_N`"
APACHE_HOME="/opt/Ca/httpd"
APACHE_VER=httpd-2.2.31
MEDIA_HOME=/opt/Ca/media/iso
#JBOSS1_HOST="hostname01.here.dom"
#JBOSS2_HOST="hostname02.here.dom"
JBOS1_HOST="hostname -f"
JBOS2_HOST="sandbox02"
PORT1=8080
PORT2=8180
USER="smuser"
GROUP="smuser"

echo "# Clean up prior Apache HTTPD installation"
echo "# Ignore errors for 1st run"
$APACHE_HOME/bin/apachectl stop >/dev/null 2>&1
rm -rf $MEDIA_HOME/$APACHE_VER /dev/null 2>&1
rm -rf $APACHE_HOME /dev/null 2>&1

echo "# Extract Apache HTTPD 2.2"
cd $MEDIA_HOME/apache
tar zxf $MEDIA_HOME/apache/$APACHE_VER.tar.gz >/dev/null 2>&1

echo "# Make folders to install Apache httpd"
mkdir $APACHE_HOME
chown $USER:$GROUP $APACHE_HOME

echo "# Configure, make and install Apache httpd"
cd $MEDIA_HOME/apache/$APACHE_VER
# Ref: https://httpd.apache.org/docs/2.2/programs/configure.html
# Ref: https://httpd.apache.org/docs/2.0/programs/configure.html
./configure --prefix=$APACHE_HOME --enable-ssl --enable-mods-shared="proxy ssl deflate expires headers" --enable-so
make
make install

echo "# Check for modules apr(so), ssl, and proxy are within compiled code"
$APACHE_HOME/bin/httpd -t -D DUMP_MODULES | grep so
$APACHE_HOME/bin/httpd -t -D DUMP_MODULES | grep ssl
$APACHE_HOME/bin/httpd -t -D DUMP_MODULES | grep proxy
$APACHE_HOME/bin/httpd -t -D DUMP_MODULES | grep headers
echo "# Check for openssl installed for use with creating SSL certs"
rpm -qa | grep openssl
```

```
# Update Apache HTTPD CONF
cp -r -p $APACHE_HOME/conf/httpd.conf
$APACHE_HOME/conf/httpd.conf.prior_jboss_proxy.$BACKUPDATE
echo "include conf/extra/boss_proxy.conf" >>
$APACHE_HOME/conf/httpd.conf
cat << EOF > $APACHE_HOME/conf/extra/performance.conf
#####
#####
#
# IM/SM PERFORMANCE ENHANCEMENTS CONFIGURATION
#####
#####
#
# Ensure this configuration is called by Apache 2.2.x httpd.conf
# and that LoadModule entries exist for deflate, expires, headers
# Used for CA IM/SM Bandwidth Performance gain over CPU usage
#
# Validate performance gain with Yslow (Yahoo Web Dev Testing Tool)
# http://developer.yahoo.net/performance/rules.html#cdn
# Add module to Firefox for testing solution
#
### Enable GZIP
<module mod_deflate.c>
AddOutputFilterByType DEFLATE text/plain text/xml
text/css application/javascript application/javascript
# Alternative full version
#SetOutputFilter DEFLATE

# Address Netscape 4.x issue
BrowserMatch ^Mozilla/4 gzip-only-text/html
# Address Netscape 4.0-4.08 issues
BrowserMatch ^Mozilla/4.[0-078] no-gzip
# Address when MSIE masquerades as Netscape
BrowserMatch _bMSIE [nogzip] gzip-only-text/html

# Don't compress images or select file types. Add fcc for SM
SetEnvIfNoCase Request_URI
\.(?:gif|jpg|png|fcgi)$ no-gzip dont-vary

# Make sure proxies don't deliver the wrong content
Header append Vary User-Agent env=!dont-vary
</ifmodule>

### Expires Headers - 2678400s = 31 days
<module mod_expires.c>
ExpiresActive On
ExpiresDefault "access plus 1 seconds"
ExpiresByType text/html "access plus 7200 seconds"
ExpiresByType image/gif "access plus 2678400 seconds"
ExpiresByType image/jpeg "access plus 2678400 seconds"
ExpiresByType image/png "access plus 2678400 seconds"
ExpiresByType text/css "access plus 518400 seconds"
ExpiresByType text/javascript "access plus 2678400 seconds"
ExpiresByType application/x-javascript "access plus 2678400 seconds"
</ifmodule>

##### Cache Headers
<module mod_headers.c>
# Cache specified files for 31 days
<filesmatch "\.(ico|flv|jpg|jpeg|png|gif|css|swf)$">
Header set Cache-Control "max-age=2678400, public"
</filesmatch>
# Cache HTML files for a couple hours
<filesmatch "\.(html|htm)$">
Header set Cache-Control "max-age=7200, private, must-revalidate"
</filesmatch>
# Cache PDFs for a day
<filesmatch "\.(pdf)$">
Header set Cache-Control "max-age=86400, public"
</filesmatch>
# Cache JavaScripts for 31 days
<filesmatch "\.(js)$">
Header set Cache-Control "max-age=2678400, private"
</filesmatch>
</ifmodule>
#####
EOF
```

```
# Update Apache HTTPD CONF
cp -r -p $APACHE_HOME/conf/httpd.conf
$APACHE_HOME/conf/httpd.conf.prior_ssl_update.$BACKUPDATE
echo "include conf/extra/performance.conf" >>
$APACHE_HOME/conf/httpd.conf
cat << EOF > $APACHE_HOME/conf/extra/ssl_info.conf
#####
#####
#
# SSL CERT CONFIGURATION
#####
#
# Note: Add SSL certs - auto generate
# https://www.thegeekstuff.com/2011/03/install-apache-2-ssl/
# https://chrisjean.com/adding-ssl-support-to-apache-on-centos/
# Example: Add module after Apache is running: a2enmod ssl
#####
#
# Add SSL functionality to Apache HTTPD
# Note: Port 443 implies that apache must be started as root (as it is below
1024)
# Temporary set to 8443 to allow testing to progress as smuser
LoadModule ssl_module modules/mod_ssl.so
Listen 443
Listen 8443

AddType application/x-x509-ca-cert .crt
AddType application/x-pkcs7-crl .crl
SSLPassPhraseDialog builtin
SSLCSessionCache shmbc:/var/cache/mod_ssl/scache($S12000)
SSLCSessionCacheTimeout 300
SSLMutex default
SSLRandomSeed startup file:/dev/urandom 512
SSLRandomSeed connect builtin
SSLCryptoDevice builtin
ServerName $S12000
DocumentRoot /opt/Ca/httpd/htdocs
ScriptAlias $C1-bin /home/site/cgi-bin
SSLEngine on
SSLProtocol all -SSLv2
SSLCipherSuite
ALL:!ADH:!EXPORT:!SSLv2:RC4+RSA:+HIGH:+MEDIUM:+LOW
SSLCertificateFile /opt/Ca/httpd/conf/ssl/$S12000/server.crt
#SSLCertificateKeyFile /opt/Ca/httpd/conf/ssl/$S12000/server.key
# Replace the below key with a password protected key for production
environments
SSLCertificateFile
/opt/Ca/httpd/conf/ssl/$S12000/server.noassword.key
# Replace the below CertChain from SSL Public Vendor
#SSLCertificateChainFile
/opt/Ca/httpd/conf/ssl/parent_root_or_intermediate_bundle.crt

SetEnvIf User Agent ".*MSIE.*" \
nokeepalive ssl-unclean-shutdown \
 downgrade-1.0 force-response-1.0

CustomLog /opt/Ca/httpd/logs/access.log combined
EOF

# Generate SSL KEY and CERTS
$S12000=/opt/Ca/httpd/conf/ssl
$_HOSTNAME="hostname"
$_FQDN="hostname -f"
$_IP="hostname -i"
$_PASSWORD="password01
mkdir -p $S12000
echo "# Generate a CA certificate server key"
openssl genrsa -aes256 -passout pass:$S_PASSWORD -out
$S12000/server.key 4096
echo "# Generate a cert (crt) using above CA certificate server
key for "
echo "hostname = $_HOSTNAME, fqdn = $_FQDN, ip = $_IP"
openssl req -new -passin pass:$S_PASSWORD -key
$S12000/server.key -out
$S12000/server.csr -subj
"/C=US/ST=STL/CITY=O/Corp/OU=Dept/CN=$_HOSTNAME/emailAddress=
CHANGE_ME@example.com/subjectAltName=DNS1=$_FQDN,DNS2=CHANGEME@example.com,DNS3=valid.example.com,IP1=$_IP,IP2=192.168.2
55.254"
echo ""
```

```
echo "# Create self-signed cert (TO BE REPLACED BY VALID PUBLIC CERTS IN
PRODUCTION BEFORE GO LIVE)"
openssl x509 -req -days 3650 -passin pass:$S_PASSWORD -in
$S12000/server.csr -signkey
$S12000/server.key -out
$S12000/server.crt
echo ""
echo "Create non password protected server key to allow auto start of
Apache w/o Password required"
openssl rsa -passin pass:$S_PASSWORD -in
$S12000/server.key -out
$S12000/server.noassword.key
echo ""
echo ""
echo "Password protected version"
head -3 $S12000/server.key
echo ""
echo ""
echo "Open / no password protection version"
head -3 $S12000/server.noassword.key
echo ""
echo ""
echo "View the self-signed Certificate"
openssl x509 -in $S12000/server.crt -text -noout
#####
#
# Fixing the missing favicon.ico icon
cp -r /opt/Ca/httpd/manual/images/favicon.ico
/opt/Ca/httpd/htdocs/favicon.ico

echo "# Update Apache HTTPD ownership to $USER:$GROUP via chown -R"
chown $USER:$GROUP /opt/Ca/httpd
chown -R $USER:$GROUP $APACHE_HOME

echo "# Update firewall port for Web Server HTTPD as root"
firewall-cmd --zone=public --permanent --add-port=4080/tcp
firewall-cmd --reload

# Reverse Proxy Info
#
Http://www.microhowto.info/howto/configure_apache_as_a_reverse_prox
y.html

#####
#
echo "#####
echo "#####
echo "#####
echo " Done @ $STARTTIME"
echo " Started @ $STARTTIME"
echo ""
echo ""
echo " Start Apache via: $APACHE_HOME/bin/apachectl start"
echo ""
echo " as the $USER user & open a web browser (IE/FF) to validate SSL on
port 443 or 8443"
echo ""
echo " Http://$IP:443 & Http://$IP:8443 & Http://$IP:8443/iam/immanage"
echo " Http://$FQDN:443 & Http://$FQDN:443/iam/immanage"
echo " Http://$FQDN:8443 & Http://$FQDN:8443/iam/immanage"
echo ""
echo ""
echo " Monitor via: tail -f /opt/Ca/httpd/logs/access.log"
echo " or "
echo " via: tail -f /opt/Ca/httpd/logs/error_log to view use of SSL and
SiteMinder"
echo ""
echo "#####
echo ""
echo "#####"
```



CLI Example: step091_root_Install_CASO_WebAgent_for_Apache



H:\sandbox\
0-19\steps\step09

```
# Install CA SSO Web Agent for Apache Web Server on Linux x64
# To be integrated with CA IM
#
#####
HTTPD_HOME=/opt/CA/httpd
SMWA_HOME=/opt/CA/webagent
BACKUPDATE=`date +%Y%m%d_%H%M%S_%N`
STARTTIME=`date`'-
_PASSWORD=Password01
MEDIAFOLDER=/opt/CA/media
IAMSUITETOOLS=$MEDIAFOLDER/iso/custom
PROPERTIESFOLDER=$MEDIAFOLDER/steps/properties
DXHOME=/opt/CA/Directory/dxserver
SMHOME=/opt/CA/siteminder
HOSTNAME='hostname'
FQDN=`hostname -f`
IP=`hostname -i`
SMUSER=siteminder
USER=smuser
GROUP=smuser

echo "# Remove prior SM WA for Apache HTTPD"
./opt/CA/siteminder/webagent_ssui/ca_wa_env.sh > /dev/null 2>&1
/etc/init.d/httpd.im stop > /dev/null 2>&1
rm -rf $SMWA_HOME

echo "# Create silent install and configure files for use by SM WA"
echo "# Use webagent configure binary to regenerate information"
cat << EOF > $PROPERTIESFOLDER/ca_sm_wa_installer_silent.properties
USER_INSTALL_DIR=$SMWA_HOME
USER_SHORTCUTS=$MEDIAFOLDER
EOF
```

```
cat << EOF > $PROPERTIESFOLDER/ca_sm_wa_configure_silent.properties
USER_INSTALL_DIR=$SMWA_HOME
USER_SHORTCUTS=$MEDIAFOLDER
HOST_REGISTRATION_YES=1
ADMIN_REG_NAME=siteminder
DEFAULT_ADMIN_REG_PASSWORD=Password01
#ADMIN_REG_PASSWORD=ENC:g5rQF9Q36nJX2+UtAlnaQ==
SHARED_SECRET_ROLLOVER_YES=0
TRUSTED_HOST_NAME=$HOSTNAME
CONFIG_OBJ=HCO_IM
IP_ADDRESS_STRING=$IP
FIPS_VALUE=COMPAT
SM_HOST_FILENAME=SmHost.conf
SM_HOST_DIR=$SMWA_HOME/config
APACHE_SELECTED=1
APACHE_WEBSERVER_ROOT=$HTTPD_HOME
APACHE_SPECIFIC_PATH=YES
APACHE_VENDOR_TYPE=HTTP_APACHE
APACHE_VERSION=2.2.31
DOMINO_SELECTED=0
DOMINO_WEBSERVER_ROOT=
IPLANET_SELECTED=0
IPLANET_WEBSERVER_ROOT=/root/iplanet
IBM_HTTP_SERVER_ZOS=
IBM_HTTP_WEBSERVER_ZOS_CONF_PATH=
WEB_SERVER_INFO=Apache,/opt/CA/httpd/conf/Apache
2.2.31,+EMPTYSTR+,apache,2.2.31,/opt/CA/httpd,Unix,+EMPTYSTR+,1,1,0,0,1,HTTP
Basic over SSL,ACO_IM,0,undefined,ENC:6f1i5TLVEpusBHpf4GrASg==,
CONFIGURE_SITES=
UNCONFIGURE_SITES=
ENABLE_WEBAGENT_RESULT=YES
USER_REQUESTED_RESTART=
EOF

echo "#####
echo "# Install SM WA for Apache HTTPD "
#/so/ca/casso/ps-12.52-linux/agents/ca-wa-12.52-linux-x86-64.bin -i console
chmod -R 555 $MEDIAFOLDER/iso/ca/casso/ps-12.52-linux/agents/*.bin
#$MEDIAFOLDER/iso/ca/casso/ps-12.52-linux/agents/ca-wa-12.52-linux-x86-64.bin -i
silent -f $PROPERTIESFOLDER/ca-wa-installer-silent.properties
$MEDIAFOLDER/iso/ca/casso/ps-12.52-linux/agents/ca-wa-12.52-linux-x86-64.bin -i
silent -f $PROPERTIESFOLDER/ca_sm_wa_installer_silent.properties

echo "#####
echo "# Configure SM for Apache HTTPD WA"
./opt/CA/webagent/ca_wa_env.sh
#/opt/CA/webagent/install_config_info/ca-wa-config.bin -i console
#$SMWA_HOME/install_config_info/ca-wa-config.bin -i silent -f
$PROPERTIESFOLDER/ca-installer-configure-silent.properties
$SMWA_HOME/install_config_info/ca-wa-config.bin -i silent -f
$PROPERTIESFOLDER/ca_sm_wa_configure_silent.properties
```

```
echo "#####
echo "# Update ldd config for SM WA and Apache HTTPD libraries"
ldd $SMWA_HOME/bin/libmod_sm22.so
cat << 'EOF' > /etc/ld.so.conf.d/siteminder_wa.conf
/usr/lib
/opt/CA/webagent/bin/
EOF
ldconfig

echo "#####
echo "# Update and Register the host as a trusted host to use a web agent on"
echo "# use SM WA binary: smreghost with the overwrite switch to avoid error message if
trusted host already exists"
./$SMWA_HOME/ca_wa_env.sh
$SMWA_HOME/bin/smreghost -i $HOSTNAME:44441,44442,44443 -o $SMUSER -p
$_PASSWORD -hn "$HOSTNAME" -hc HCO_IM -o -f $SMWA_HOME/config/SmHost.conf
echo ""
echo ""
echo ""

chown -R $USER:$GROUP $SMWA_HOME
```

CLI Example: step092_-root-_Create_autostart_for_apache _httpd_for_smwa_and_redirect_to_jboss_imwa



H:\sandbox\
0-19\steps\step09

```
# Create auto start script for httpd.im as root
# Assumption: HTTPD and SMWA have been installed and integrated
#
#####
STARTTIME='date'
HTTPD_HOME=/opt/CA/httpd
SMWA_HOME=/opt/CA/webagent

cat << EOF > /etc/init.d/httpd.im
#!/bin/bash
#
# Startup script for the Apache Web Server for SiteMinder WA & Redirect to IM
JBoss
#
# chkconfig: - 99 15
# description: Apache is a World Wide Web server.
# It is used to redirect and load-balance to two (2) IM JBOSS Servers
# processname: httpd
# pidfile: $HTTPD_HOME/logs/httpd.pid
# config: $HTTPD_HOME/conf/httpd.conf

# Source function library.
./etc/rc.d/init.d/functions

#####
## Add SM PORTS to allow SMWA to function
SM_ADMIN_UDP_PORT=44444
SM_ADMIN_TCP_PORT=44444
export SM_ADMIN_UDP_PORT SM_ADMIN_TCP_PORT
# Ensure this file is sourced after "function" to get PATH correct
.$SMWA_HOME/ca_wa_env.sh
#####

# This will prevent initlog from swallowing up a pass-phrase prompt if
# mod_ssl needs a pass-phrase from the user.
INITLOG_ARGS=""

# Path to the apachectl script, server binary, and short-form for messages.
apachectl=$HTTPD_HOME/bin/apachectl
httpd=$HTTPD_HOME/bin/httpd
pid=$httpd/logs/httpd.pid
prog=httpd
RETVAL=0
```

```
# The semantics of these two functions differ from the way apachectl does
# things -- attempting to start while running is a failure, and shutdown
# when not running is also a failure. So we just do it the way init scripts
# are expected to behave here.

start() {
    echo -n $"Starting $prog: "
    daemon $httpd $OPTIONS
    RETVAL=$?
    echo
    [ \$RETVAL = 0 ] && touch /var/lock/subsys/httpd.im
    return \$RETVAL
}

stop() {
    echo -n $"Stopping $prog: "
    killproc $httpd
    RETVAL=$?
    echo
    [ \$RETVAL = 0 ] && rm -f /var/lock/subsys/httpd.im \$pid
}

reload() {
    echo -n $"Reloading $prog: "
    killproc $httpd -HUP
    RETVAL=$?
    echo
}

# See how we were called.
case "$1" in
    start)
        start
        ;;
    stop)
        stop
        ;;
    status)
        status $httpd
        RETVAL=$?
        ;;
    restart)
        stop
        start
        ;;
    condrestart)
        if [ -f \$pid ] ; then
            stop
            start
        fi
        ;;
esac
```

```
reload)
reload
;;
graceful|help|configtest|fullstatus)
    $Apachectl \$@
    RETVAL=\$?
    ;;
*)
    echo $"Usage: $prog {start|stop|restart|condrestart|reload|status}"
    echo \$" fullstatus|graceful|help|configtest"
    exit 1
esac

exit \$RETVAL
EOF

chown -R $USER:$GROUP $HTTPD_HOME
chmod 555 /etc/init.d/httpd.im

#####
## Run chkconfig to setup runlevels for which httpd.fssui will run
echo "## Run chkconfig to setup runlevels for which httpd.fssui will run ##"
chkconfig --del httpd.im
chkconfig --add httpd.im
chkconfig --level 2345 httpd.im on
chkconfig --list

#####
## Update firewall port for HTTPS 443 & SM Port 44444 ##
echo "## Update firewall port for HTTPS 443 & SM Port 44444 ##"
firewall-cmd --zone=public --permanent --add-port=443/tcp
firewall-cmd --zone=public --permanent --add-port=44444/tcp
firewall-cmd --reload

echo "##"
echo ""
echo "## Start httpd.im: /etc/init.d/httpd.im start ##"
echo "## Example: http://hostname -i:443 ##"
echo ""
echo "## Copy the above link to a browser ##"
echo "Done @ `date`"
echo "Started @ $STARTTIME"
echo ""
echo "##"
echo "Done @ `date`"
echo "Start @ $STARTTIME"
echo "##"
rm /dev/null; mknod -m 666 /dev/null c 1 3
```



CLI Example: step093_-root-_Install_SM_Extension _from_CA_IM_r12-6-6_image

```
# Install the CA IM SM Extension to SSO PS Folder
#
# Variables
BACKUPDATE='date +%Y%m%d_%H%M%S_%N'
#IATEMPDIR='/your/temp/space/directory'
MEDIAFOLDER=/opt/CA/media/iso
PROPERTIESFOLDER=/opt/CA/media/steps/properties
JAVA_VER=jdk1.7.0_71
JAVA_ROOT=/opt/CA/jdk
JAVA_HOME="$JAVA_ROOT/$JAVA_VER"_x64
JBoss_FULL_VER=jboss-eap-6.2.0
JBoss_VER=jboss-eap-6.2
JBoss_ROOT=/opt/CA/jboss
JBoss01_IM_HOME="$JBoss_ROOT"/im_01/"$JBoss_VER"
JBoss02_IM_HOME="$JBoss_ROOT"/im_02/"$JBoss_VER"
JBoss01_IP_HOME="$JBoss_ROOT"/ip_01/"$JBoss_VER"
JBoss01_IG_HOME="$JBoss_ROOT"/ig_01/"$JBoss_VER"
USER=jboss
GROUP=jboss
_PASSWORD=Password01
EMBEDDEDUSER=idmembedded
_DEFAULT_APP_SERVER_URL="http://imwa001.domain.com:8080"
_DEFAULT_JBoss_CLUSTER_UNICAST_HOSTNAMES="sandbox01[7600],sandbox02[7700]"
_CLUSTER01_HOSTNAME='hostname'
_CLUSTER02_HOSTNAME=sandbox02
_DEFAULT_JBoss_CLUSTER_UNICAST_HOSTNAMES=_HOSTNAME01_[7600]_HOSTNAME02_[7700]
# Host MUST resolve via nslookup (or local host file)
# Use different TCP Port if running both JBoss instances on same server
# with two (2) hostnames resolved to the same IP address

#Need for uninstall process
PATH=$PATH:$JAVA_HOME/bin

cat $PROPERTIESFOLDER/imwa-sm.exten.properties

echo "### Installing CA IM r12.6.6 SM Extension ###"
echo ""
echo "Note: tar/zip up Siteminder folder before and after to compare"
echo ""
echo "### This may take 3-5 minutes ###"
echo ""
echo ""
#$MEDIAFOLDER/ca/iam_suite/r12-6-6/server/ca-im-12.6.06-linux.bin -f
$PROPERTIESFOLDER/imwa-sm.exten.properties -i silent
```

```
cp -r -p /opt/CA/media/iso/custom/im-sm_extension/libxml2-2.9.1.so.iam-fw
/opt/CA/siteminder/bin/thirdparty/
cp -r -p /opt/CA/siteminder/registry/sm.registry
/opt/CA/siteminder/registry/sm.registry.$BACKUPDATE
mv /opt/CA/siteminder/registry/sm.registry
/opt/CA/siteminder/registry/sm.registry.save
head -2 /opt/CA/siteminder/registry/sm.registry.save >
/opt/CA/siteminder/registry/sm.registry
echo "ImInstalled=          8.0; REG_SZ" >>
/opt/CA/siteminder/registry/sm.registry
tail -337 /opt/CA/siteminder/registry/sm.registry.save >>
/opt/CA/siteminder/registry/sm.registry

echo
#####
echo "# Validate SiteMinder Update by IM - Date and IAM string"
echo "# ls -al /opt/CA/siteminder/thirdparty/libxml2-2.9.1.so.iam-fw"
ls -al /opt/CA/siteminder/bin/thirdparty/libxml2-2.9.1.so.iam-fw
echo "# grep -i ImInstalled /opt/CA/siteminder/registry/sm.registry "
grep -i ImInstalled /opt/CA/siteminder/registry/sm.registry

chown -R smuser:smuser /opt/CA/siteminder

### Note on cluster versus non cluster
### JBoss configuration: standalone-full.xml: Support of Java EE Full-Profile and all
server capabilities without clustering
### JBoss configuration: standalone-full-ha.xml: Full profile with clustering capabilities

echo ""
echo ""
echo ""
echo ""
echo
#####
```

NOTE: Only two changes in SiteMinder PS Folder

- One new 3rd party library file (dll or so)
- Update of token in SM registry.



CLI Example: step094a_-jboss-_Integration_IMWA_and_SMPS_with_ra-xml_and_web-xml_updates

```
# Integrate CA Identity Manager and CA SSO (SiteMinder) Policy Server
# & Web Agent (Apache)
#
# Variables
STARTTIME=0
BACKUPDATE="date +%Y%m%d_%H%M%S_%N"
MEDIAFOLDER=/opt/CA/media
PROPERTIESFOLDER=/opt/CA/media/steps/properties
JAVA_VER=jdk.7_0_71
JAVA_ROOT=/opt/CA/jdk
JAVA_HOME=$JAVA_ROOT/$JAVA_VER_x64
JBOS_VER=jboss-eap-6.2
JBOS_ROOT=/opt/CA/boss
JBOS01_IM_HOME=$JBOS_ROOT/im_01/$JBOS_VER"
JBOS02_IM_HOME=$JBOS_ROOT/im_02/$JBOS_VER"
JBOS01_IP_HOME=$JBOS_ROOT/ip_01/$JBOS_VER"
JBOS01_ID_HOME=$JBOS_ROOT/ig_01/$JBOS_VER"
USER=root
GROUP=jboss
PORT=810
HTTPD_FSSUI_HOME=/opt/CA/httpd_fssui
HTTPD_VER=2.2.31
SMPS_HOME=/opt/CA/sitesminder
SMPS_HOSTNAME=sandbox01
SMPS_FAILOVER_HOSTNAME=$sandBox02
_PASSWORD=password01
IM_TUNNEL_AGENT_NAME=ca_im_session_tunnel
PATH=$PATH:$JAVA_HOME/bin
# This process will ensure the tight integration between IM and SM via
# ra.xml and web.xml
# Example:
# [WARN [ims,default] {ServerService Thread Pool -- 87} * Startup Step 2
# : Attempting to start PolicyServerService
# [WARN [ims,default] {ServerService Thread Pool -- 87} Unlimited
Strength Java Crypto Extensions enabled: TRUE
# ERROR [ims] {ServerService Thread Pool -- 87} Unable to connect to the
policy server: null. Please verify the tunnel agent name, shared secret
and other configurations as specified in ra.xml file in iam_im_ear, verify
that the Java JDK has been updated with Java Cryptographic Extension
Unlimited Strength Jurisdiction Policy Files (JCE).
echo "# Backup the existing IM ra.xml configuration file to SiteMinder
Policy Server"
cp -r p
$JBOS01_IM_HOME/standalone/deployments/iam_im.ear/policyserver.
ra/META-INF/ra.xml
$JBOS01_IM_HOME/standalone/deployments/iam_im.ear/policyserver.
ra/META-INF/ra.xml$BACKUPUPDATE
cp -r p
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/custom/identi
tymanager/systemWideProperties.properties
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/custom/identi
tymanager/systemWideProperties.properties.$BACKUPUPDATE
echo "# Update Password hash"
JAVA_EXE=$JAVA_HOME/bin/java
IAM_HOME=$JBOS01_IM_HOME/standalone/deployments/iam_im.ear
cd $MEDIAFOLDER/iso/ca/iam_suite/r12-6-5-server/PasswordTool/bin
$JAVA_EXE -classpath ../../lib/idsutils.jar:../../lib/cryptofIPS.jar
-Dcrypto.secretstore=$IAM_HOME/custom/identitymanager/systemWideP
roperties.properties.com.netegrity.rtJce.JSafeTools -JSafe -p
S_PASSWORD
#cat
$IAM_HOME/custom/identitymanager/systemWideProperties.properties
PASSWORD_HASH=$grep '[BES]' $IAM_HOME/custom/identitymanager/systemWideProperties.properties
| awk -F"Secret=" '{print $2}'
echo ""
echo ""
echo "# The password hash is: $PASSWORD_HASH"

echo "# Step 01: Edit the ra.xml file located in
$iam_im.ear/policyserver.ra/META-INF, as follows:"
echo "    Set Enabled = true."
echo "    Set ConnectionURL ="
SITEMINDER_POLICY_STORE_HOSTNAME_OR_IP"
echo "    Set UserName = $teminder"
echo "    Set AdminSecret = '$(PBES): format='
echo ""
echo "    Encrypt the SiteMinder administrator's password using the
Identity Manager Password Tool"
echo "    $(CA)AM Suite Identity
Manager/tools/PasswordTool/bin/pwdtools.bat (or pwdtools.sh)"
echo "    Use installation ISO if 'Admin Tools' were not installed for
password tool"
echo "    $MEDIAFOLDER/iso/ca/iam_suite/r12-6-
S/server/PasswordTool/bin/pwdtools.sh"
echo ""
echo "    Note: Add the string '$(PBES):' to the beginning of the encrypted
password"
echo "    produced by the Password Tool, before adding it to the
AdminSecret property."

```

```
echo ""
echo "    Set AgentName = $IM_TUNNEL_AGENT_NAME"
echo "    Set AgentSecret = '$(PBES): format='
echo ""
echo "    Encrypt the Agent's password using the Identity Manager
Password Tool and put it into the AgentSecret property."
echo "    Note: Add the string '$(PBES):' to the beginning of the encrypted
password"
echo "    produced by the Password Tool, before adding it to the
AgentSecret property."
echo ""

# May remove this section after testing is complete. Retain for historical
notes
#
# Pulled section from $MEDIAFOLDER/iso/ca/iam_suite/r12-6-
S/server/PasswordTool/bin/pwdtools.sh
# NOTE: The $MEDIAFOLDER Password Tool LIB folder is missing libraries
that don't seem to
# be required for basic password change
#
# Existing: cryptoFIPS.jar idmutils.jar log4j.jar
# Missing: cacommmons_jar nim-core.jar commons-codec-1.3.jar
# Retired: application.jar (Not within ISO)

echo "# Backup the existing IM/IMPS configuration file to update
embedded authentication"
cp -r p
$JBOS01_IM_HOME/standalone/deployments/iam_im.ear/custom/identi
tymanager/systemWideProperties.properties
$JBOS01_IM_HOME/standalone/deployments/iam_im.ear/custom/identi
tymanager/systemWideProperties.properties.$BACKUPUPDATE
cp -r p
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/custom/identi
tymanager/systemWideProperties.properties
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/custom/identi
tymanager/systemWideProperties.properties.$BACKUPUPDATE
echo "#"

echo "# Update Password hash"
JAVA_EXE=$JAVA_HOME/bin/java
IAM_HOME=$JBOS01_IM_HOME/standalone/deployments/iam_im.ear
cd $MEDIAFOLDER/iso/ca/iam_suite/r12-6-5-server/PasswordTool/bin
$JAVA_EXE -classpath ../../lib/idsutils.jar:../../lib/cryptofIPS.jar
-Dcrypto.secretstore=$IAM_HOME/custom/identitymanager/systemWideP
roperties.properties.com.netegrity.rtJce.JSafeTools -JSafe -p
S_PASSWORD
#cat
$IAM_HOME/custom/identitymanager/systemWideProperties.properties
PASSWORD_HASH=$grep '[BES]' $IAM_HOME/custom/identitymanager/systemWideProperties.properties
| awk -F"Secret=" '{print $2}'
echo ""
echo ""
echo "# The password hash is: $PASSWORD_HASH"

echo "# Due to the number of changes, the update of the ra.xml file will
be via"
echo "# a full replacement copy of the file, with variables added to update
the file"
echo ""
echo "# Remarks have been added for clarity to the file:"
echo "#"
$JBOS01_IM_HOME/standalone/deployments/iam_im.ear/policyserver.
ra/META-INF/ra.xml"
echo ""
echo "#####
#####"
echo ""
echo "# Note: Add the string '$(PBES):' to the beginning of the encrypted
password"
echo "    produced by the Password Tool, before adding it to the
AdminSecret property."

```

```
cat << EOF >
$JBOS01_IM_HOME/standalone/deployments/iam_im.ear/policyserver.ra/
META-INF/ra.xml
<xml version="1.0" encoding="UTF-8"?>

<IDOC>TYPE connector PUBLIC "-//Sun Microsystems, Inc.//DTD Connector
1.0//EN" "http://java.sun.com/dtd/connector_1_0.dtd">

<!-- UPDATED FOR IM AUTOMATION -->
<!-- UPDATED FOR IM AUTOMATION -->
<!-- UPDATED FOR IM AUTOMATION -->

<connector>
<!-- Make sure the dtd referenced here exists in \install\resources\global\ddt
for local referencing -->

<!-- display-name=PolicyServerRA</display-name>
<!-- vendor-name=Netegrity</vendor-name>
<!-- spec-version=1.0</spec-version>
<!-- eis-type=Policy.Store</eis-type>
<!-- version=1.0</version>
<!-- license>
<!-- license-required=false</license-required>
<!-- license>
<!-- resourceadapter id="PolicyServerResourceAdapter">
<!-- managedconnectionfactory=>
<!-- class=com.netegrity.ra.policyserver.impl.PSManagedConnectionFactory</man
agedconnectionfactory-class>
<!-- connectionfactory=>
<!-- interface=com.netegrity.ra.policyserver.iPolicyServerConnectionFactory</con
nectionfactory-interface>
<!-- connectionfactory-impl=>
<!-- class=com.netegrity.ra.policyserver.impl.PSConnectionFactory</connectionfac
tory-impl-class>
<!-- connection-interface=com.netegrity.ra.policyserver.iPolicyServerConnection</con
nection-interface>
<!-- connection-impl=>
<!-- class=com.netegrity.ra.policyserver.impl.PSConnection</connection-impl-clas
s>
<!-- transaction-support=NoTransaction</transaction-support>
<!-- config-property>
<!-- config-property-name=ValidateSMHeadersWithPS=</config-property-name>
<!-- config-property-type=java.lang.String</config-property-type>
<!-- UPDATE ValidateSMHeadersWithPS from false to true -->
<!-- config-property-value=true</config-property-value>
<!-- config-property>
<!-- config-property-name=Enabled=</config-property-name>
<!-- config-property-type=java.lang.String</config-property-type>
<!-- UPDATE Enabled from false to true -->
<!-- config-property-value=true</config-property-value>
<!-- config-property>
<!-- Set FIPS Mode to true if SiteMinder is in FIPS Only Mode -->
<!-- config-property>
<!-- config-property-name=FIPSMode=</config-property-name>
<!-- config-property-type=java.lang.String</config-property-type>
<!-- NO CHANGE to default FIPSMode value at this time -->
<!-- config-property-value=false</config-property-value>
<!-- config-property>
<!-- config-property-name=ConnectionURL=</config-property-name>
<!-- config-property-type=java.lang.String</config-property-type>
<!-- UPDATE ConnectionURL from default to variable $SMPS_HOSTNAME -->
<!-- config-property-value=$SMPS_HOSTNAME_44441_44442_44443</config-property-value>
<!-- config-property>
<!-- config-property-name=UserName=</config-property-name>
<!-- config-property-type=java.lang.String</config-property-type>
<!-- NO CHANGE to default SM UserName value at this time -->
<!-- config-property-value=SiteMinder</config-property-value>
<!-- config-property-->

```

```
<!-- config-property>
<!-- config-property-name=AdminSecret=</config-property-name>
<!-- config-property-type=java.lang.String</config-property-type>
<!-- UPDATE AdminSecret for SM UserName changed from null to
$PASSWORD_HASH -->
<!-- config-property-value=$PASSWORD_HASH</config-property-value>
<!-- config-property>
<!-- config-property-name=AgentName=</config-property-name>
<!-- config-property-type=java.lang.String</config-property-type>
<!-- UPDATE AdminName for IM/SM Tunnel Agent changed from install
default to $IM_TUNNEL_AGENT_NAME -->
<!-- config-property-value=$IM_TUNNEL_AGENT_NAME</config-
property-value>
<!-- config-property>
<!-- config-property-name=SPASSWORD_HASH -->
<!-- config-property-value=$SPASSWORD_HASH</config-property-value>
<!-- config-property>
<!-- config-property-name=AgentSecret=</config-property-name>
<!-- config-property-type=java.lang.String</config-property-type>
<!-- UPDATE AdminSecret for IM/SM Tunnel Agent changed from null to
$PASSWORD_HASH -->
<!-- config-property-value=$PASSWORD_HASH</config-property-value>
<!-- config-property>
<!-- config-property-name=ConnectionMin=</config-property-name>
<!-- config-property-type=java.lang.Integer</config-property-type>
<!-- NO CHANGE to default SMPS ConnectionMin value at this time -->
<!-- config-property-value=</config-property-value>
<!-- config-property>
<!-- config-property-name=ConnectionMax=</config-property-name>
<!-- config-property-type=java.lang.Integer</config-property-type>
<!-- NO CHANGE to default SMPS ConnectionMax value at this time -->
<!-- config-property-value=</config-property-value>
<!-- config-property>
<!-- config-property-name=ConnectionStep=</config-property-name>
<!-- config-property-type=java.lang.Integer</config-property-type>
<!-- NO CHANGE to default SMPS ConnectionStep value at this time -->
<!-- config-property-value=</config-property-value>
<!-- config-property>
<!-- config-property-name=ConnectionTimeout=</config-property-
name>
<!-- config-property-type=java.lang.Integer</config-property-type>
<!-- NO CHANGE to default SMPS ConnectionTimeout value at this time -->
<!-- config-property-value=</config-property-value>
<!-- config-property>
<!-- config-property-name=FailOver=</config-property-name>
<!-- config-property-type=java.lang.String</config-property-type>
<!-- NO CHANGE to default SMPS FailOver value at this time -->
<!-- config-property-value=</config-property-value>
<!-- config-property>
<!-- authentication-mechanism=>
<!-- authentication-mechanism-type=BasicPassword</authentication-
mechanism-type>
<!-- credential->
<!-- interface=javax.resource.spi.security.PasswordCredential</credential-
interface>
<!-- authentication-mechanism=>
<!-- reauthentication-support=false</reauthentication-support>
<!-- resourceadapter -->
<!-- connector -->
<!-- UPDATED FOR IM AUTOMATION -->
<!-- UPDATED FOR IM AUTOMATION -->
<!-- UPDATED FOR IM AUTOMATION -->
EOF

```

```
echo "# Update 2nd JBOSS Node with a copy of ra.xml"
echo "# This assumes the 2nd JBOSS node is on the same host as 1st JBOSS
node"
cp -r p
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/policyserver.ra/
META-INF/ra.xml
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/policyserver.ra/
META-INF/ra.xml

head -31
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/policyserver.ra/
META-INF/ra.xml | tail -4
head -37
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/policyserver.ra/
META-INF/ra.xml | tail -4
head -44
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/policyserver.ra/
META-INF/ra.xml | tail -4
head -50
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/policyserver.ra/
META-INF/ra.xml | tail -4
head -56
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/policyserver.ra/
META-INF/ra.xml | tail -4
head -68
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/policyserver.ra/
META-INF/ra.xml | tail -4
head -74
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/policyserver.ra/
META-INF/ra.xml | tail -4
head -80
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/policyserver.ra/
META-INF/ra.xml | tail -4
head -110
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/policyserver.ra/
META-INF/ra.xml | tail -4
head -116
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/policyserver.ra/
META-INF/ra.xml | tail -4

echo "# Backup the existing IM web.xml configuration file to update
authentication redirection"
cp -r p
$JBOS01_IM_HOME/standalone/deployments/iam_im.ear/user_console.
war/WEB-INF/web.xml
$JBOS01_IM_HOME/standalone/deployments/iam_im.ear/user_console.
war/WEB-INF/web.xml$BACKUPUPDATE
cp -r p
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/user_console.
war/WEB-INF/web.xml
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/user_console.
war/WEB-INF/web.xml$BACKUPUPDATE

echo "# Step 02: Edit the web.xml file located in
$iam_im.ear/user_console.war/WEB-INF/"
echo "    Set FrameworkAuthFilter property to Enabled = false."
echo "    This will disable IM only authentication"
echo "sed -i '13s|[true/false]|'$
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/user_console.
war/WEB-INF/web.xml

SECTION REMOVED FOR CLARITY

cp -r p
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/user_console.
war/WEB-INF/web.xml
$JBOS02_IM_HOME/standalone/deployments/iam_im.ear/user_console.
war/WEB-INF/web.xml$BACKUPUPDATE

rown -R USR:SGROUP:$JBOS_ROOT



```

CLI Example: step094b_-jboss-_Disable_Integration_IMWA_and_SMPS_with_ra-xml_and_web-xml_updates



H:\sandbox\\
0-19\steps\step09\

```
# Disable the Integrate CA Identity Manager and CA SSO (SiteMinder)
Policy Server & Web Agent (Apache)
#
SECTIONS REMOVED FOR CLARITY

cat << EOF >
$JBSSO01_IM_HOME/standalone/deployments/iam_im.ear/policyserver.
rar/META-INF/ras.xml
<?xml version="1.0" encoding="UTF-8"?>

<!DOCTYPE connector PUBLIC "-//Sun Microsystems, Inc.//DTD
Connector 1.0//EN" "http://java.sun.com/dtd/connector_1_0.dtd">

<!-- UPDATED FOR IM AUTOMATION -->
<!-- UPDATED FOR IM AUTOMATION -->
<!-- UPDATED FOR IM AUTOMATION -->

<connector>
<!-- Make sure the dtd referenced here exists in
\install\resources\global\dtd for local referencing -->

<display-name>PolicyServerRA</display-name>
<vendor-name>Netegrity</vendor-name>
<spec-version>1.0</spec-version>
<eis-type>Policy Store</eis-type>
<version>1.0</version>
<license>
<license-required>false</license-required>
</license>
<resourceadapter id="PolicyServerResourceAdapter">
<managedconnectionfactory-
class>com.netegrity.ra.policyserver.impl.PSManagedConnectionFactory</managedconnectionfactory-class>
<connectionfactory-interface>com.netegrity.ra.policyserver.IPolicyServerConnectionFactory</connectionfactory-interface>
<connectionfactory-impl->
<class>com.netegrity.ra.policyserver.impl.PSConnectionFactory</connectionfactory-impl-class>
<connection-interface>com.netegrity.ra.policyserver.IPolicyServerConnection</connection-interface>
<connection-impl->
<class>com.netegrity.ra.policyserver.impl.PSConnection</connection-impl-class>
<transaction-support>NoTransaction</transaction-support>
<config-property>
<config-property-name>ValidateSMHeadersWithPS</config-property-name>
<config-property-type>java.lang.String</config-property-type>
<!-- UPDATE ValidateSMHeaderWithPS from false to true -->
<!-- UPDATE ValidateSMHeaderWithPS from true to false -->
<config-property-value>false</config-property-value>
</config-property>
<config-property>
<config-property-name>Enabled</config-property-name>
<config-property-type>java.lang.String</config-property-type>
<!-- UPDATE Enabled from false to true -->
<!-- UPDATE Enabled from true to false -->
<config-property-value>false</config-property-value>
</config-property>
<!-- Set FIPS Mode to true if SiteMinder is in FIPS Only Mode -->
<config-property>
<config-property-name>FIPSMode</config-property-name>
<config-property-type>java.lang.String</config-property-type>
<!-- NO CHANGE to default FIPSMode value at this time -->
<config-property-value>false</config-property-value>
</config-property>
<config-property-name>ConnectionURL</config-property-name>
<config-property-type>java.lang.String</config-property-type>
```

```
echo ""
echo " Step 02: Edit the web.xml file located in
\iam_im.ear\user_console.war\WEB-INF"
echo " Set FrameworkAuthFilter property to Enabled = false."
echo " This will disable IM only authentication "
#
# Reference: https://support.ca.com/cadocs/0/CA%20Identity%20Manager%2012%20
%20-ENU/Bookshelf_Files/HTML/docs/index.htm?toc.htm?FIPS_Password_To
ol.html

#sed -i '136s|true|false|'
$JBSSO01_IM_HOME/standalone/deployments/iam_im.ear/user_console.
war/WEB-INF/web.xml
sed -i '136s|true|false|'
$JBSSO02_IM_HOME/standalone/deployments/iam_im.ear/user_console.
war/WEB-INF/web.xml

cp -r -p
$JBSSO01_IM_HOME/standalone/deployments/iam_im.ear/user_console.
war/WEB-INF/web.xml
$JBSSO02_IM_HOME/standalone/deployments/iam_im.ear/user_console.
war/WEB-INF/web.xml.$BACKUPUPDATE

chown -R $USER:$GROUP $JBSSO_ROOT

#####
# General SM / IM integration:
https://support.ca.com/cadocs/0/CA%20Identity%20Manager%2012%20
%20-ENU/Bookshelf_Files/HTML/docs/index.htm?toc.htm?7443936.html
# Tunnel 4agent IM to SM:
https://support.ca.com/cadocs/0/CA%20Identity%20Manager%2012%20
%20-ENU/Bookshelf_Files/HTML/docs/index.htm?toc.htm?2012691.html
# LogOffUri for SM WebAgent:
https://support.ca.com/cadocs/0/CA%20Identity%20Manager%2012%20
%20-ENU/Bookshelf_Files/HTML/docs/index.htm?toc.htm?1701131.html@o20
12715
# LogOffUri for SM WebAgent:
https://support.ca.com/cadocs/0/CA%20Identity%20Manager%2012%20
%20-ENU/Bookshelf_Files/HTML/docs/index.htm?toc.htm?267247.html
# SM HCO Object:
https://support.ca.com/cadocs/0/CA%20SiteMinder%2012%20
-ENU/Bookshelf_Files/HTML/docs/index.htm?toc.htm?7346014.html
# SM ACO Object:
https://support.ca.com/cadocs/0/CA%20SiteMinder%2012%20
-ENU/Bookshelf_Files/HTML/docs/index.htm?toc.htm?7346230.html
# SM TrustedHost Object:
https://support.ca.com/cadocs/0/CA%20SiteMinder%2012%20
-ENU/Bookshelf_Files/HTML/docs/index.htm?toc.htm?7347494.html

#
# Reference:
https://support.ca.com/cadocs/0/CA%20Identity%20Manager%2012%20
%20-ENU/Bookshelf_Files/HTML/docs/index.htm?toc.htm?7463444.html
# Reference: Troubleshooting IM/SM for ra.xml settings
#
https://support.ca.com/cadocs/0/CA%20Identity%20Manager%2012%20
%20-ENU/Bookshelf_Files/HTML/docs/index.htm?toc.htm?1701131.html@o20
12717

# Ensure mod_jk.so is available for Apache and JBOSS (OR use mod_proxy
built-in to Apache HTTPD 2.2.x)
#
https://docs.jboss.org/author/display/AS71/Using+mod_jk+with+JBoss+AS
7
# https://developer.jboss.org/wiki/usingmodjk12withjboss
#
https://support.ca.com/cadocs/0/CA%20Identity%20Manager%2012%20
%20-ENU/Bookshelf_Files/HTML/docs/index.htm?toc.htm?7443936.html
```

Disable IM:SM Integration when the following Error messages are seen upon startup in JBOSS server.log

- 15:38:19,859 ERROR [com.netegrity.ims.manage.filter.ManagementConsoleAuthFilter] (http-/0.0.0.0:8080-1) Failed to deploy the directory for AuthenticationDirectory
- 15:38:19,861 ERROR [com.netegrity.ims.manage.filter.ManagementConsoleAuthFilter] (http-/0.0.0.0:8080-1) Failed to the create the bootstrap directory for authentication. The user directory "@SMDirName" does not exist.

/opt/CA/jboss/im_01/jboss-eap-
6.2/standalone/deployments/iam_im.ear/management_console.war/WEB-INF/web.xml

```
<filter>
  <filter-name>ManagementConsoleAuthFilter</filter-name>
  <filter-class>com.netegrity.ims.manage.filter.ManagementConsoleAuthFilter</filter-class>
  <init-param>
    <param-name>Enable</param-name>
    <!-- <param-value>true</param-value> -->
    <param-value>false</param-value>
  </init-param>
</filter>
```



CLI Example: step095a_-root-_Enable_SM_WA_on_Apache_HTTPD

```
# Enable the SM Webagent for the Apache HTTPD
#
BACKUPDATE=`date +%Y%m%d_%H%M%S_%N`
HTTPD_HOME=/opt/CA/httpd

echo "# Make backup copy of the existing HTTPD SMWA' WebAgent.conf file"
cp -r $HTTPD_HOME/conf/WebAgent.conf
$HTTPD_HOME/conf/WebAgent.conf.org.$BACKUPDATE

echo "# Update the EnableWebAgent token to the value YES"
sed -i 's/EnableWebAgent="NO"/EnableWebAgent="YES"/g'
$HTTPD_HOME/conf/WebAgent.conf

echo "# Monitor the behavior of the SMWA within the
$HTTPD_HOME/logs/error_log"
echo "# if needed; add the the following token to the
$HTTPD_HOME/conf/WebAgent.conf :"
echo " LogLevel debug"
echo ""
echo ""
echo "# NOTE:The default log location is defined by: ErrorLog
\"$HTTPD_HOME/logs/error_log\""
echo ""
echo ""

echo "# Check if change was made"
grep EnableWebAgent $HTTPD_HOME/conf/WebAgent.conf

#####
###"
echo "# Update missing CAAAS JAVA HOME token in /etc/profile "
cp -r -p /etc/profile /etc/profile.$BACKUPDATE
sed -i
"s|CAAAS_JAVA_HOME=|CAAAS_JAVA_HOME=/opt/CA/jdk/jdk1.7.0_71_x64|g"
/etc/profile
```

a



H:\sandbox\
J-19\steps\step09!

CLI Example: step095b_-root-_Disable_SM_WA_on_Apache_HTTPD

```
# Enable the SM Webagent for the Apache HTTPD
#
BACKUPDATE=`date +%Y%m%d_%H%M%S_%N`
HTTPD_HOME=/opt/CA/httpd

echo
#####
###"
echo "# Make backup copy of the existing HTTPD SMWA' WebAgent.conf file"
cp -r $HTTPD_HOME/conf/WebAgent.conf
$HTTPD_HOME/conf/WebAgent.conf.org.$BACKUPDATE

echo """
echo
#####
###"
echo "# Update the EnableWebAgent token to the value NO"
sed -i 's/EnableWebAgent="YES"/EnableWebAgent="NO"/g'
$HTTPD_HOME/conf/WebAgent.conf

echo """
echo
#####
###"
echo """
echo "# Monitor the behavior of the SMWA within the
$HTTPD_HOME/logs/error_log"
echo "# if needed; add the the following token to the
$HTTPD_HOME/conf/WebAgent.conf :"
echo " LogLevel debug"
echo """
echo "# NOTE:The default log location is defined by: ErrorLog
\"$HTTPD_HOME/logs/error_log\""
echo """
echo """

echo
#####
###"
echo "# Check if change was made"
grep EnableWebAgent $HTTPD_HOME/conf/WebAgent.conf
```

a

CLI Examples: CA IAM Suite Tool & Logging JSP

- CA IAM Suite Tools (Samples) and Logging JSP
- Assumption:
 - CA IAM ISO required to extract the IAM SUITE Tools
 - Deploy the Logging.jsp without security steps per readme, to rapidly deploy
 - step100_root_Install_IAM_Suite_Tools_from_CA_IM_r12-6-6_image
 - step101_root_Install_IM_Logging-jsp



CLI Example: step100_root_Install_IAM_Suite_Tools_from_CA_IM_r12-6-6_image

```
# Install the CA IM EAR to JBOSS EAP
# This wizard will install CA Identity Manager 12.6.6
# 3- Identity Manager Administrative Tools

# Variables
BACKUPDATE=`date +%Y%m%d_%H%M%S_%N`
#IATEMPDIR=/your/temp/space/directory"
MEDIAFOLDER=/opt/CA/media/iso
PROPERTIESFOLDER=/opt/CA/media/steps/properties
JAVA_VER=jdk1.7.0_71
JAVA_ROOT=/opt/CA/jdk
JAVA_HOME="$JAVA_ROOT/$JAVA_VER"_x64
JBoss_FULL_VER=jboss-eap-6.2.0
JBoss_VER=jboss-eap-6.2
JBoss_ROOT=/opt/CA/jboss
JBoss01_IM_HOME="$JBoss_ROOT"/im_01/"$JBoss_VER"
JBoss02_IM_HOME="$JBoss_ROOT"/im_02/"$JBoss_VER"
JBoss01_IP_HOME="$JBoss_ROOT"/ip_01/"$JBoss_VER"
JBoss01_IG_HOME="$JBoss_ROOT"/ig_01/"$JBoss_VER"
USER=jboss
GROUP=jboss
_PASSWORD=Password01
EMBEDDEDUSER=idmembedded
_DEFAULT_APP_SERVER_URL="http://imwa001.domain.com:8080"
_DEFAULT_JBOSS_CLUSTER_UNICAST_HOSTNAMES="sandbox01[7600],sandbox02[7700]"
_CLUSTER01_HOSTNAME='hostname'
_CLUSTER02_HOSTNAME=sandbox02
#_DEFAULT_JBOSS_CLUSTER_UNICAST_HOSTNAMES=_HOSTNAME01_[7600]_HOSTNAME02_[7700]
# Host MUST resolve via nslookup (or local host file)
# Use different TCP Port if running both JBOSS instances on same server
# with two (2) hostnames resolved to the same IP address

#Need for uninstall process
PATH=$PATH:$JAVA_HOME/bin

echo "# Update silent properties file for CA IM r12.6.6 Admin Tools "
###imwa-jboss-cluster01.properties
cp -r -p $PROPERTIESFOLDER/imwa-jboss-cluster01.admin.properties
file $PROPERTIESFOLDER/imwa-jboss-cluster01.admin.properties

echo "# Update Installation to Admin Tools ONLY"
sed -i "$_DEFAULT_COMPONENTS=Server |$_DEFAULT_COMPONENTS=Admin|g"
"$PROPERTIESFOLDER/imwa-jboss-cluster01.admin.properties"

echo "# Update JAVA_HOME=$JAVA_HOME"
sed -i
's,"_DEFAULT_JAVA_HOME=/opt/CA/java/jdk1.7.0_71_x64","_DEFAULT_JAVA_HOME
=$JAVA_HOME",' "$PROPERTIESFOLDER/imwa-jboss-cluster01.admin.properties"
```

```
echo "# Update JBOSS_FOLDER=$JBoss01_IM_HOME"
sed -i 's,"_DEFAULT_JBOSS_FOLDER=/opt/CA/jboss/eap-
6.2","_DEFAULT_JBOSS_FOLDER=$JBoss01_IM_HOME"," '$PROPERTIESFOLDER/imwa-
jboss-cluster01.admin.properties"

echo "# Update Embedded ID=$EMBEDDEDUSER"
sed -i
"s/_DEFAULT_GENERIC_USERNAME=idmembedded/_DEFAULT_GENERIC_USERNAME=$E
MBEDDEDUSER/g" $PROPERTIESFOLDER/imwa-jboss-cluster01.admin.properties

echo "# Update Embedded Password=$_PASSWORD"
sed -i
"s/_DEFAULT_GENERIC_PASSWORD=Password01/_DEFAULT_GENERIC_PASSWORD=$_PAS
WORD/g" $PROPERTIESFOLDER/imwa-jboss-cluster01.admin.properties
sed -i
"s/_DEFAULT_DB_PASSWORD=Password01/_DEFAULT_DB_PASSWORD=$_PASSWORD/g"
$PROPERTIESFOLDER/imwa-jboss-cluster01.admin.properties

echo "# Update HTTP URL=$_DEFAULT_APP_SERVER_URL"
sed -i
"s/_DEFAULT_APP_SERVER_URL=http://imwa001.domain.com:8080/_DEFAULT_APP_SERV
ER_URL=$_DEFAULT_APP_SERVER_URL/g" $PROPERTIESFOLDER/imwa-jboss-
cluster01.admin.properties

echo "# Update UNICAST CLUSTER HOSTNAMES & PORTS=
$_DEFAULT_JBOSS_CLUSTER_UNICAST_HOSTNAMES"
sed -i "s/_HOSTNAME01_|$_CLUSTER01_HOSTNAME|g" "$PROPERTIESFOLDER/imwa-
jboss-cluster01.admin.properties"
sed -i "s/_HOSTNAME02_|$_CLUSTER02_HOSTNAME|g" "$PROPERTIESFOLDER/imwa-
jboss-cluster01.admin.properties"

echo "### Installing CA IM r12.6.6 Admin Tools ###"
echo "### This may take 3-5 minutes ###"
echo ""
###$MEDIAFOLDER/ca/iam_suite/r12-6-6/server/ca-im-12.6.06-linux.bin -f
$PROPERTIESFOLDER/silent-cluster.ini -i console
$MEDIAFOLDER/ca/iam_suite/r12-6-6/server/ca-im-12.6.06-linux.bin -f
$PROPERTIESFOLDER/imwa-jboss-cluster01.admin.properties -i silent

echo "# Validate Jboss Update by IM - Date and IAM string"
echo "# /opt/CA/IdentityManager/IAM_Suite/IdentityManager/tools/"
ls -al /opt/CA/IdentityManager/IAM_Suite/IdentityManager/tools/
```

CLI Example: step101_root_Install_IM_Logging-jsp



H:\sandbox\
0-19\steps\step10

```
# Update Logging.jsp and Ping.jsp from IM Admin Tools to both JBOSS Folders

# Variables
BACKUPDATE=`date +%Y%m%d_%H%M%S_%N`
#IATEMPDIR=/your/temp/space/directory"
MEDIAFOLDER=/opt/CA/media/iso
PROPERTIESFOLDER=/opt/CA/media/steps/properties
JAVA_VER=jdk1.7.0_71
JAVA_ROOT=/opt/CA/jd
JAVA_HOME="$JAVA_ROOT/$JAVA_VER"_x64
JBoss_FULL_VER=jboss-eap-6.2.0
JBoss_VER=jboss-eap-6.2
JBoss_ROOT=/opt/CA/jboss
JBoss01_IM_HOME="$JBoss_ROOT"/im_01/"$JBoss_VER"
JBoss02_IM_HOME="$JBoss_ROOT"/im_02/"$JBoss_VER"
JBoss01_IP_HOME="$JBoss_ROOT"/ip_01/"$JBoss_VER"
JBoss01_Ig_HOME="$JBoss_ROOT"/ig_01/"$JBoss_VER"
USER=jboss
GROUP=jboss
_PASSWORD=Password01
EMBEDDEDUSER=idmembedded
_DEFAULT_APP_SERVER_URL="http://imwa001.domain.com:8080"
_DEFAULT_JBOSS_CLUSTER_UNICAST_HOSTNAMES="sandbox01[7600],sandbox02[7
700]"
_CLUSTER01_HOSTNAME='hostname'
_CLUSTER02_HOSTNAME=sandbox02
_DEFAULT_JBOSS_CLUSTER_UNICAST_HOSTNAMES=_HOSTNAME01_[7600]_HOST
NAME02_[7700]
# Host MUST resolve via nslookup (or local host file)
# Use different TCP Port if running both JBOSS instances on same server
# with two (2) hostnames resolved to the same IP address

#Need for uninstall process
PATH=$PATH:$JAVA_HOME/bin
echo "## Coping the Logging.jsp & ping.jsp from the CA IM r12.6.6 Admin Tools
###"
echo ""
cp -r -p
/opt/CA/IdentityManager/IAM_Suite/IdentityManager/tools/samples/Admin/user_c
onsole.war/*.*"
$JBoss01_IM_HOME/standalone/deployments/iam_im.ear/user_console.war/
cp -r -p
/opt/CA/IdentityManager/IAM_Suite/IdentityManager/tools/samples/Admin/user_c
onsole.war/*.*"
$JBoss02_IM_HOME/standalone/deployments/iam_im.ear/user_console.war/
```

```
echo
#####
echo "# Validate Logging.Jsp & Ping.jsp for Jboss"
echo "#"
$JBoss01_IM_HOME/standalone/deployments/iam_im.ear/user_console.war/logging.js
p & ping.jsp "
echo "#"
$JBoss02_IM_HOME/standalone/deployments/iam_im.ear/user_console.war/logging.js
p & ping.jsp "

chown -R $USER:$GROUP $JBoss01_IM_HOME
chown -R $USER:$GROUP $JBoss02_IM_HOME

ls -al
$JBoss01_IM_HOME/standalone/deployments/iam_im.ear/user_console.war/logging.js
p
ls -al
$JBoss01_IM_HOME/standalone/deployments/iam_im.ear/user_console.war/ping.jsp
ls -al
$JBoss02_IM_HOME/standalone/deployments/iam_im.ear/user_console.war/logging.js
p
ls -al
$JBoss02_IM_HOME/standalone/deployments/iam_im.ear/user_console.war/ping.jsp

echo """
echo """
echo """
echo """
echo """
#####
```

CLI Examples: CA IM IMPD/IMPD Installation

- CA IAM Suite IMPD (Provisioning Directory), IMPS (Provisioning Server), and IAMCS (IAM Connector Server/JCS)
- Assumption:
 - CA IAM ISO is used for all installs
 - Note: IMPS will not verify on CENTOS 7 (and will roll-back)
 - To install IMPS without rollback, set switch to noverify
 - SLAPD will core dump on CENTOS7 with current release.
 - RH7/CentOS7 is NOT on the support matrix; so no surprises there.
 - step110_root-_Install_Ca_IM_Provisioning_Directory_r12-6-6
 - step111_root-_Install_Ca_IM_Provisioning_Server_r12-6-6
 - step112a_root-_Install_Ca_IAMCS_Connector_JCS_Server_with_IMPS_r12-6-6
 - step112b_root-_Install_Ca_IAMCS_Connector_JCS_Server_without_IMPS_r12-6-6

CLI Example: step110_root_Install_CA_IM_Provisioning_Directory_r12-6-6



H:\sandbox\
0-19\steps\step11

```
# Install the CA IM PROVISIONING DIRECTORY

# Variables
BACKUPDATE=`date +%Y%m%d_%H%M%S_%N` 
#IATEMPDIR=/your/temp/space/directory"
MEDIAFOLDER=/opt/CA/media/iso
PROPERTIESFOLDER=/opt/CA/media/steps/properties
HOSTNAME=hostname -s'
JAVA_VER=jdk1.7.0_71
JAVA_ROOT=/opt/CA/jdk
JAVA_HOME="$JAVA_ROOT/$JAVA_VER"_x64
JBoss_FULL_VER=jboss-eap-6.2.0
JBoss_VER=jboss-eap-6.2
JBoss_ROOT=/opt/CA/jboss
JBoss01_IM_HOME="$JBoss_ROOT"/im_01/"$JBoss_VER"
JBoss02_IM_HOME="$JBoss_ROOT"/im_02/"$JBoss_VER"
JBoss01_IP_HOME="$JBoss_ROOT"/ip_01/"$JBoss_VER"
JBoss01_Ig_HOME="$JBoss_ROOT"/ig_01/"$JBoss_VER"
USER=jboss
GROUP=jboss
_PASSWORD=password01
EMBEDDEDUSER=idmembedded
_DEFAULT_APP_SERVER_URL="http://imwa001.domain.com:8080"
_DEFAULT_JBoss_CLUSTER_UNICAST_HOSTNAMES="sandbox01[7600],sandbox02[700]"
_CLUSTER01_HOSTNAME='hostname'
_CLUSTER02_HOSTNAME=sandbox02
DXHOME=/opt/CA/Directory/dxserver

#Need for uninstall process
PATH=$PATH:$JAVA_HOME/bin

# " -console      Performs a console installation"
# " -silent       Performs a Silent installation. Also requires -options <file>" 
# " -debug        Enables debug logging. (Warning: Debug logs contain passwords)"
# " -options <file>  Performs an install with defaults values from <file>" 
# " -options-record <file>  Performs an interactive install, and saves" 
# "                  a response file which can be used in silent mode"
# " -options-template <file> Generates an empty response file which can be" 
# "                  used in silent install mode"

# NOTE: update the cadir-silent.properties file with MULTIPLE hostnames to have
installer pre-generate the DSA knowledge
# files, and the SSLD PEM personalities files (signed by the common
impd_trusted.pem file under SSLD)
# NOTE: Besure that the impd.dwg file under knowledge is source only for current
host to avoid excessive logging until
# the other servers are enabled with CA Directory + IMPD
```

```
echo "# Uninstall Prior IMPD r12.6.6 release"
/opt/CA/IdentityManager/ProvisioningDirectory/_uninst/uninstaller.bin -silent
#/opt/CA/media/iso/ca/iam_suite/r12-6-
6/server/Provisioning/ProvisioningDirectory/uninstall -i silent
#/opt/CA/media/iso/ca/iam_suite/r12-6-
6/server/Provisioning/ProvisioningServer/uninstall -i silent
#/opt/CA/media/iso/ca/iam_suite/r12-6-
6/server/Provisioning/ProvisioningDirectory/setup -options-template /tmp/impd-silent.properties
#/opt/CA/media/iso/ca/iam_suite/r12-6-
6/server/Provisioning/ProvisioningServer/setup -options-template /tmp/imps-silent.properties

echo "# Update silent properties file for CA IMPD r12.6.6 "
###imwa-jboss-cluster01.properties
cp -r -p $PROPERTIESFOLDER/impd-silent.properties.save.multi
$PROPERTIESFOLDER/impd-silent.properties.save.multi.$BACKUPDATE
cp -r -p $PROPERTIESFOLDER/impd-silent.properties.save.multi
$PROPERTIESFOLDER/impd-silent.properties
file $PROPERTIESFOLDER/impd-silent.properties

echo "# deploymentType.selectedChoice=1 Size = 500 MB & 1000 MB & 2000 MB"
sed -i "s|deploymentType.selectedChoice=1|deploymentType.selectedChoice=1|g"
$PROPERTIESFOLDER/impd-silent.properties

echo "# /opt/CA/IdentityManager/ProvisioningDirectory"
sed -i
"s|/opt/CA/IdentityManager/ProvisioningDirectory|/opt/CA/IdentityManager/ProvisioningDirectory|g" $PROPERTIESFOLDER/impd-silent.properties

echo "# Update primary hostname"
sed -i "s|sandbox01|sandbox01|g" $PROPERTIESFOLDER/impd-silent.properties

echo "# Update MW secondary hostname"
sed -i "s|sandbox02|sandbox02|g" $PROPERTIESFOLDER/impd-silent.properties

echo "# Update embedded Password"
sed -i "s|Password01|Password01|g" $PROPERTIESFOLDER/impd-silent.properties
echo ""

echo ""
echo "### Installing CA IMPD r12.6.6 ###"
echo ""
$MEDIAFOLDER/ca/iam_suite/r12-6-6/server/Provisioning/ProvisioningDirectory/setup
-options $PROPERTIESFOLDER/impd-silent.properties -silent
```

```
echo #####
echo "# Validate IMPD and IMPS - Date and IAM string"
su - dsa -c "dxserver status"
ls -l /opt/CA/IdentityManager/ProvisioningDirectory/
cat /opt/CA/IdentityManager/ProvisioningDirectory/version.txt

echo #####
echo "# Source the dxprofile for root to use dxsearch cmd "
echo "# Query IMPD DSA ports main 20394, co 20398, inc 20398, notify 20404"
./opt/CA/Directory/dxserver/install/.dxprofile
echo "dxsearch -h $HOSTNAME -p 20394 -c -x -D
$TDSCContainerName=DSAs,eTNamespaceName=CommonObjects,dc=etadb -w
$_PASSWORD"
dxsearch -h $HOSTNAME -p 20394 -c -x -b dc=etadb -D
"eTDSCContainerName=DSAs,eTNamespaceName=CommonObjects,dc=etadb" -w
$_PASSWORD"
dxsearch -h $HOSTNAME -p 20396 -c -x -b dc=etadb -D
"eTDSCContainerName=DSAs,eTNamespaceName=CommonObjects,dc=etadb" -w
$_PASSWORD"
dxsearch -h $HOSTNAME -p 20404 -c -x -b dc=etadb -D
"eTDSCContainerName=DSAs,eTNamespaceName=CommonObjects,dc=etadb" -w
$_PASSWORD"

##### Update impd.dwg to avoid excessive logging until other IMPD are enabled#####
cp -r -p $DXHOME/config/knowledge/impd.dwg impd.dwg.$BACKUPDATE
cat << EOF > $DXHOME/config/knowledge/impd.dwg
source "$HOSTNAME-impd-main.dwg";
source "$HOSTNAME-impd-co.dwg";
source "$HOSTNAME-impd-inc.dwg";
source "$HOSTNAME-impd-notify.dwg";
EOF

chown -R dsa:etrdir /opt/CA/Directory
su - dsa -c "dxserver init all"

echo ""
echo ""
echo ""
echo ""
echo #####
```



CLI Example: step111_root_Install_CA_IM_Provisioning_Server_r12-6-6

```
# Install the CA IM PROVISIONING SERVER
# NOTE: CA IM r12.6.6 is only supported on RHEL 6.x (not 7.x) at this time

# WARNING: CA IM PS will install on CentOS 7.x but SLAPD will FAIL
#           with memory segmentation error and core dump.
#
# DEBUGGING STEPS USED:
# To Force Install without Validation Steps (that cause a rollback):
# setup -noverify -debug -i console
# setup -noverify -debug -i silent -options imps.silent.properties
#
# Validate no issues with embedded ECS
# ./eCSinstall.sh "/opt/CA/SharedComponents/EnterpriseCommonServices" "IM Provisioning Server" "0" "1"
#
# To view issues with permissions, or missing libraries, or incorrect paths
# strace -v -lslapd -n im_ps -s 64 -f ..//data/im_ps.conf -h "ldap://localhost:20389
Idap://sandbox01:20389 ldaps://localhost:20390 ldaps://sandbox01:20390" -d 65535
#
# Permission Issue: imps writes to this folder as a registry
# chown -R $USER:$GROUP
/opt/CA/SharedComponents/EnterpriseCommonServices
#
# Missing Path Issue:
# ln -s /opt/CA/SharedComponents/CAPKI/CAPKIS/ $IMPS_ROOT/CAPKIS
# Default Shell Issue (bash versus ksh)
# imps required KSH shell & needs to source ./etc/.profile_imps

# Variables
BACKUPDATE=`date +%%Y%md_%H%M%S_%N`  

#IATEMPDIR=/your/temp/space/directory"  

MEDIAFOLDER=/opt/CA/media/iso  

PROPERTIESFOLDER=/opt/CA/media/steps(properties  

JAVA_VER=jdk1.7.0_71  

JAVA_ROOT=/opt/CA/jdk  

JAVA_HOME="$JAVA_ROOT/$JAVA_VER"_x64  

JBoss_FULL_VER=jboss-eap-6.2.0  

JBoss_VER=jboss-eap-6.2  

JBoss_ROOT=/opt/CA/jboss  

JBoss01_IM_HOME="$JBoss_ROOT"/im_01/"$JBoss_VER"  

JBoss02_IM_HOME="$JBoss_ROOT"/im_02/"$JBoss_VER"  

JBoss01_IP_HOME="$JBoss_ROOT"/ip_01/"$JBoss_VER"  

JBoss01_ID_HOME="$JBoss_ROOT"/ig_01/"$JBoss_VER"  

USER=imps  

GROUP=imps  

_PASSWORD=Password01  

IMPS_ROOT=/opt/CA/IdentityManager/ProvisioningServer  

EMBEDDEDUSER=idmembedded  

_DEFAULT_APP_SERVER_URL="http://imwa001.domain.com:8080"  

_CLUSTER01_HOSTNAME='hostname'  

_CLUSTER02_HOSTNAME=sandbox02
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```

```
#Need for uninstall process
PATH=$PATH:$JAVA_HOME/bin

#"-console"      Performs a console installation"
#""-silent"      Performs a Silent installation. Also requires -options <file>""
#""-debug"       Enables debug logging. (Warning: Debug logs contain passwords)"
#""-options <file>"  Performs an install with defaults values from <file>""
#""-options-record <file>"  Performs an interactive install, and saves"
#""-options-response <file>"  a response file which can be used in silent mode"
#""-options-template <file>" Generates an empty response file which can be"
#""-options-silent <file>"  used in silent install mode"

echo "# Shutdown and clean up prior build"
/etc/init.d/improvisioning stop
$IMPS_ROOT/bin/imps stop

echo "# Uninstall Prior IMPS r12.6.6 release"
/opt/CA/media/iso/ca/iam_suite/r12-6-
6/server/Provisioning/ProvisioningServer/uninstall -silent
echo "# Remove prior imps home folder"
rm -rf $IMPS_ROOT

mkdir -p $IMPS_ROOT
chown -R $USER:$GROUP $IMPS_ROOT
mkdir -p /opt/CA/SharedComponents/EnterpriseCommonServices
chown -R $USER:$GROUP /opt/CA/SharedComponents/EnterpriseCommonServices

echo "# Update Fw Ports for IMPS Service"
firewall-cmd --zone=public --permanent --add-port=20389/tcp
firewall-cmd --zone=public --permanent --add-port=20390/tcp
firewall-cmd --reload

# Add missing library for IMPS eCS installation
#/opt/CA/media/iso/ca/iam_suite/r12-6-
6/server/Provisioning/ProvisioningServer/linux/ecs-installation/eCSinstall.sh
# yum provides */libstdc++-libc6.2-2.so.3
# http://rpmfind.net/linux/rpm2html/search.php?query=libstdc%2B%2B-libc6.2-2.so.3
rpm -ivh $MEDIAFOLDER/custom/ecs_lib_for_centos_7/compat-libstdc++-296-2.96-
144.el6.i686.rpm
yum -y install compat-libstdc++*686 > /dev/null 2>&1
yum -y install compat-libstdc++*el6 > /dev/null 2>&1
yum -y install libstdc++*686 > /dev/null 2>&1
yum -y install libidn*686 > /dev/null 2>&1
grep imps /etc/security/limits.conf

echo "# Update silent properties file for CA IMPD r12.6.6 "
cp -r -p $PROPERTIESFOLDER/imps.silent.save.properties
$PROPERTIESFOLDER/imps.silent.save.properties.$BACKUPDATE
cp -r -p $PROPERTIESFOLDER/imps.silent.save.properties
$PROPERTIESFOLDER/imps.silent.properties
file $PROPERTIESFOLDER/imps.silent.properties
```

```
sed -i "$|deploymentType.selectedChoice=1|deploymentType.selectedChoice=1|g"
$PROPERTIESFOLDER/imps.silent.properties
sed -i
"s|/opt/CA/IdentityManager/ProvisioningServer|/opt/CA/IdentityManager/Provisioning
server|g" $PROPERTIESFOLDER/imps.silent.properties
sed -i "s|localhost|sandbox01|g" $PROPERTIESFOLDER/imps.silent.properties
sed -i "s|sandbox01|sandbox01|g" $PROPERTIESFOLDER/imps.silent.properties
sed -i "s|sandbox02|sandbox02|g" $PROPERTIESFOLDER/imps.silent.properties
sed -i "s|etadmin|etadmin|g" $PROPERTIESFOLDER/imps.silent.properties
sed -i "s|Password01|Password01|g" $PROPERTIESFOLDER/imps.silent.properties

echo "# IGNORE FALSE NEGATIVE: sysctl: Function not implemented "
echo "# Occurs on CentOS 7 via ECS component check for kernel settings"
grep -i $USER /etc/passwd
userdel -r $USER

### IMPS Install expect to use an imps account with the Korn Shell
### A new IMPS_ROOT/.profile is created for the imps user
adduser -U -M MAIL_DIR=/dev/null -d $IMPS_ROOT -p $_PASSWORD $USER -s
/bin/ksh
grep -i $USER /etc/passwd

#####
# Fix missing recommended.list from r12.6.6 ECS #####
cp -r -p $MEDIAFOLDER/ca/iam_suite/r12-6-
6/server/Provisioning/ProvisioningServer/linux/ecs-installation/bin/recommend.list
$MEDIAFOLDER/ca/iam_suite/r12-6-6/server/Provisioning/ProvisioningServer/linux/ecs-
installation/bin/
$MEDIAFOLDER/ca/iam_suite/r12-6-6/server/Provisioning/ProvisioningServer/setup -
-noverify -debug -options $PROPERTIESFOLDER/imps.silent.properties -silent
echo "# Validate IMPS - Date and IAM string"
chown -R $USER:$GROUP $IMPS_ROOT
ls -al $IMPS_ROOT
cat $IMPS_ROOT/version.txt

cat << EOF > $IMPS_ROOT/.bash_profile
#source IMPS Profile
./etc/.profile_imps
#source Directory Profile
./opt/CA/Directory/.dxprofile

CALIB=$CALIB:/opt/CA/SharedComponents/CAPKI/CAPKIS/Linux/amd64/64/lib:/opt/CA/
SharedComponents/CAPKI/CAPKIS/Linux/x86/lib:/opt/CA/webagent/CAPKI/Linux/amd64
/64/lib:/opt/CA/siteminder/CAPKI/Linux/x86/32/lib
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/opt/CA/IdentityManager/ProvisioningServer/lib
::/opt/CA/SharedComponents/lib:/opt/CA/IdentityManager/ProvisioningServer/Linux/x8
6/32/lib
export CALIB LD_LIBRARY_PATH
EOF

/etc/init.d/improvisioning start
su - imps -c "$IMPS_ROOT/bin/pingeta"
su - imps -c "$IMPS_ROOT/bin/bindeta"
```

CLI Example: step112a_-root-_Install_CA_IAMCS_Connector_JCS_Server_with_IMPS_r12-6-6



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```
# Variables  
BACKUPDATE='date +%Y%m%d_%H%M%S_%N'  
#IATEMPDIR='/your/temp/space/directory'  
MEDIAFOLDER=/opt/CA/media/iso  
PROPERTIESFOLDER=/opt/CA/media/steps/properties  
JAVA_VER=jdk1.7.0_71  
JAVA_ROOT=/opt/CA/jdk  
JAVA_HOME="$JAVA_ROOT/$JAVA_VER"_x64  
JBoss_FULL_VER=jboss-eap-6.2.0  
JBoss_VER=jboss-eap-6.2  
JBoss_ROOT=/opt/CA/jboss  
JBoss01_IM_HOME="$JBoss_ROOT"/im_01/"$JBoss_VER"  
JBoss02_IM_HOME="$JBoss_ROOT"/im_02/"$JBoss_VER"  
JBoss01_IP_HOME="$JBoss_ROOT"/ip_01/"$JBoss_VER"  
JBoss01_Ig_HOME="$JBoss_ROOT"/ig_01/"$JBoss_VER"  
USER=jboss  
GROUP=jboss  
_PASSWORD=Password01  
EMBEDDEDUSER=idmembedded  
_DEFAULT_APP_SERVER_URL="http://imwa001.domain.com:8080"  
_DEFAULT_JBOSS_CLUSTER_UNICAST_HOSTNAMES="sandbox01[7600],sandbox02[7700]"  
_CLUSTER01_HOSTNAME='hostname'  
_CLUSTER02_HOSTNAME=sandbox02  
  
#Need for uninstall process  
PATH=$PATH:$JAVA_HOME/bin  
  
# " -console      Performs a console installation"  
# " -silent       Performs a Silent installation. Also requires -options <file>"  
# " -debug        Enables debug logging. (Warning: Debug logs contain passwords)"  
# " -options <file>  Performs an install with defaults values from <file>"  
# " -options-record <file>  Performs an interactive install, and saves"  
# "           a response file which can be used in silent mode"  
# " -options-template <file> Generates an empty response file which can be"  
# "           used in silent install mode"  
  
#echo "# Create silent install template under /tmp if needed to be updated for later releases"  
#/opt/CA/media/iso/ca/iam_suite/r12-6-  
6/server/Provisioning/ConnectorServer/setup -options-template  
/tmp/iams.silent.properties  
echo "# Uninstall Prior IAMCS r12.6.6 release"  
/opt/CA/IdentityManager/ConnectorServer/_uninst/uninstaller.bin -silent  
#/opt/CA/media/iso/ca/iam_suite/r12-6-  
6/server/Provisioning/ConnectorServer/uninstall -silent  
  
echo "# Update silent properties file for CA IAMCS r12.6.6"  
cp -r -p $PROPERTIESFOLDER/iams.silent.save.properties  
$PROPERTIESFOLDER/iams.silent.save.properties.$BACKUPDATE  
cp -r -p $PROPERTIESFOLDER/iams.silent.save.properties  
$PROPERTIESFOLDER/iams.silent.properties  
file $PROPERTIESFOLDER/iams.silent.properties
```

```
70  
  
echo  
#####
echo "# /opt/CA/IdentityManager/ConnectorServer"  
sed -i  
"s|/opt/CA/IdentityManager/ConnectorServer|/opt/CA/IdentityManager/ConnectorServer|g" $PROPERTIESFOLDER/iamcs.silent.properties  
  
echo "# Update IMPS hostname for IAMCS service"  
sed -i "s|$sandbox01|$g" $PROPERTIESFOLDER/iamcs.silent.properties  
echo "# Update IMPS embedded admin account etaadmin"  
sed -i "s|etaadmin|etaadmin|g" $PROPERTIESFOLDER/iamcs.silent.properties  
echo "# Update embedded Password"  
sed -i "s|Password01|Password01|g" $PROPERTIESFOLDER/iamcs.silent.properties  
  
echo ""  
echo  
#####
cat $PROPERTIESFOLDER/iamcs.silent.properties | grep " " | grep -v "#"  
  
echo  
#####
echo "##### ENSURE THE PROPERTIES VALUES ABOVE ARE CORRECT #####"  
echo  
#####  
  
echo  
#####
echo ""  
echo "## Installing CA IAMCS r12.6.6 ##"  
echo ""  
echo ""  
echo ""  
echo ""  
$MEDIAFOLDER/ca/iam_suite/r12-6-6/server/Provisioning/ConnectorServer/setup -  
options $PROPERTIESFOLDER/iamcs.silent.properties -silent  
  
echo  
#####
echo "# Validate IAMCS - Date and IAM string"  
ls -al /opt/CA/IdentityManager/ConnectorServer/  
cat /opt/CA/IdentityManager/ConnectorServer/version.properties  
/opt/CA/IdentityManager/ConnectorServer/bin/im_jcs status
```



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CLI Example: step112b_root_Install_CA_IAMCS_Connector_JCS_Server_without_IMPS_r12-6-6



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0-19\steps\step112

```
# Install the CA IM CONNECTOR SERVER with out IMPS
#
# To avoid issues where IMPS is not currently available
#
# To create silent install file (iamcs-install.txt) & monitor with debug switch
(im_connector_server_install.log)
# /r12-6-6/server/Provisioning/ConnectorServer/setup -debug -console -options-
record /tmp/iamcs-install.txt
#
# Variables
BACKUPDATE="date +%Y%m%d_%H%M%S_%N"
#IATEMPDIR="/your/temp/space/directory"
MEDIAFOLDER=/opt/CA/media/iso
PROPERTIESFOLDER=/opt/CA/media/steps/properties
JAVA_VER=jdk1.7.0_71
JAVA_ROOT=/opt/CA/jdk
JAVA_HOME="$JAVA_ROOT/$JAVA_VER"_x64
JBoss_FULL_VER=jboss-eap-6.2.0
JBoss_VER=jboss-eap-6.2
JBoss_ROOT=/opt/CA/jboss
JBoss01_IM_HOME="$JBoss_ROOT"/im_01/"$JBoss_VER"
JBoss02_IM_HOME="$JBoss_ROOT"/im_02/"$JBoss_VER"
JBoss01_IP_HOME="$JBoss_ROOT"/ip_01/"$JBoss_VER"
JBoss01_IG_HOME="$JBoss_ROOT"/ig_01/"$JBoss_VER"
USER=jboss
GROUP=jboss
_PASSWORD=Password01
EMBEDDEDUSER=idmembedded
_DEFAULT_APP_SERVER_URL="http://imwa001.domain.com:8080"
_DEFAULT_JBOSS_CLUSTER_UNICAST_HOSTNAMES="sandbox01[7600],sandbox02[7
700]"
_CLUSTER01_HOSTNAME=`hostname`
_CLUSTER02_HOSTNAME=sandbox02

#Need for uninstall process
PATH=$PATH:$JAVA_HOME/bin

#
# -console      Performs a console installation
# " -silent     Performs a silent installation. Also requires -options <file>""
# " -debug      Enables debug logging. (Warning: Debug logs contain passwords)"
# " -options <file>  Performs an install with defaults values from <file>""
# " -options-record <file>  Performs an interactive install, and saves"
# "           a response file which can be used in silent mode"
# " -options-template <file> Generates an empty response file which can be"
# "           used in silent install mode"
```

```
echo "# Create silent install template under /tmp if needed to be updated for later
releases"
#/opt/CA/media/iso/ca/iam_suite/r12-6-6/server/Provisioning/ConnectorServer/setup
-options-template /tmp/iamcs.silent.properties
echo "# Uninstall Prior IAMCS r12.6.6 release"
/opt/CA/IdentityManager/ConnectorServer/_uninst/uninstaller.bin -silent
#/opt/CA/media/iso/ca/iam_suite/r12-6-
6/server/Provisioning/ConnectorServer/uninstall -silent

echo "# Update silent properties file for CA IAMCS r12.6.6"
cp -r -p $PROPERTIESFOLDER/iamcs.silent.noimps.save.properties
$PROPERTIESFOLDER/iamcs.silent.noimps.save.properties.$BACKUPDATE
cp -r -p $PROPERTIESFOLDER/iamcs.silent.noimps.save.properties
$PROPERTIESFOLDER/iamcs.silent.properties
file $PROPERTIESFOLDER/iamcs.silent.properties

echo "# /opt/CA/IdentityManager/ConnectorServer "
sed -i
"s|/opt/CA/IdentityManager/ConnectorServer|/opt/CA/IdentityManager/ConnectorSer
ver|g" $PROPERTIESFOLDER/iamcs.silent.properties

echo "# Update IMPS hostname for IAMCS service"
sed -i "s|sandbox01|sandbox01|g" $PROPERTIESFOLDER/iamcs.silent.properties
echo "# Update IMPS embedded admin account etaadmin"
sed -i "s|etaadmin|etaadmin|g" $PROPERTIESFOLDER/iamcs.silent.properties
echo "# Update embedded Password"
sed -i "s|Password01|Password01|g" $PROPERTIESFOLDER/iamcs.silent.properties

echo "### Installing CA IAMCS r12.6.6 ###"
echo ""
$MEDIAFOLDER/ca/iam_suite/r12-6-6/server/Provisioning/ConnectorServer/setup -
options $PROPERTIESFOLDER/iamcs.silent.properties -silent

echo
#####
echo "# Validate IAMCS - Date and IAM string"
ls -al /opt/CA/IdentityManager/ConnectorServer/
cat /opt/CA/IdentityManager/ConnectorServer/version.properties
/opt/CA/IdentityManager/ConnectorServer/bin/im_jcs status

echo ""
echo ""
echo ""
echo ""
echo ""
#####"
```



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CLI Examples: CA IG Installation

- CA IAM Suite IG (Identity Governance)
- Assumption:
 - CA IAM ISO is used for all installs
 - Note: IG will create a silent install file, **but does not appear to consume it.**
 - IG installer require JDK6, but IG solution will use JDK7 during run-time
 - IG default installation for object store databases require four (4) instances
- step120_root_Install_JDK7_x86_and_x64_for_IG
- step121_root_Install_JBOSS_EAP_for_IG
- step123_root_Create_IG_db_as_Oracle_User_via_su
- step124_root_Install_CA_IG_Server_r12-6-6_EAR_On_JBOSS_First_HA_Node



CLI Example: step120_root_Install_JDK7_x86_and_x64_for_IG

```
##### Shell script to install three(3) packages in the follow order: #####
##### Java JDK 1.7 b71+ (x86 / x64) , Java JCE Unlimited Encryption Libraries #####
##### Java JDK 1.7 b71+ (2015/05/12 b79) #####
##### http://www.oracle.com/technetwork/java/javase/downloads/jdk7-
downloads-1880260.html #####
##### Java JCE 1.7 #####
##### http://www.oracle.com/technetwork/java/javase/downloads/jce-7-
download-432124.html #####
STARTTIME=`date`  
echo ""  
echo $STARTTIME  
  
MEDIA_HOME=/opt/CA/media/iso/jdk  
INSTALL_PATH=/opt/CA/jdk  
JDK_VERSION=jdk1.7.0_71  
JDK_GZ_NAME_X86=jdk-7u71-linux-i586.gz  
JDK_GZ_NAME_X64=jdk-7u71-linux-x64.gz  
  
mkdir -p "$INSTALL_PATH"  
  
echo "### Clean up prior installation of x86 JDK ###"  
cd $MEDIA_HOME  
rm -rf "$MEDIA_HOME/$JDK_VERSION"  
rm -rf "$INSTALL_PATH/$JDK_VERSION" _x86  
tar -zvxf "$MEDIA_HOME/$JDK_GZ_NAME_X86" >/dev/null 2>&1  
mv "$MEDIA_HOME/$JDK_VERSION" "$INSTALL_PATH/$JDK_VERSION" _x86  
  
echo "### Clean up prior installation of x64 JDK ###"  
rm -rf "$MEDIA_HOME/$JDK_VERSION"  
rm -rf "$INSTALL_PATH/$JDK_VERSION" _x64  
tar -zvxf "$MEDIA_HOME/$JDK_GZ_NAME_X64" >/dev/null 2>&1  
mv "$MEDIA_HOME/$JDK_VERSION" "$INSTALL_PATH/$JDK_VERSION" _x64  
  
echo "### Check status of JDK 7 x86 ###"  
file "$INSTALL_PATH/$JDK_VERSION" _x86/bin/java  
echo "### Check status of JDK 7 x64 ###"  
file "$INSTALL_PATH/$JDK_VERSION" _x64/bin/java  
  
echo "### Update JCE libraries for JDK 7 x86 and x64 ###"  
cd $MEDIA_HOME/jce_7  
cp -r -p *.jar "$INSTALL_PATH/$JDK_VERSION" _x86/jre/lib/security  
cp -r -p *.jar "$INSTALL_PATH/$JDK_VERSION" _x64/jre/lib/security
```

```
echo "## JCE Test (viewable on console) ##"  
echo "## Check JAVA JCE Encryption for Unlimited Strength ##"  
cat << EOF > $MEDIA_HOME/CipherTest.java  
import javax.crypto.Cipher;  
class CipherTest {  
    public static void main(String args[]) {  
        try {  
            int maxKeyLen = Cipher.getMaxAllowedKeyLength("AES");  
            if(maxKeyLen < 256) {  
                System.out.println("FAILED: Max key length too small! (" + maxKeyLen + ".);");  
            } else {  
                System.out.println("PASSED: Max key length OK! (" + maxKeyLen + ".);");  
            }  
        } catch(Exception e) {  
            System.out.println("FAILED: No AES found!");  
        }  
    }  
}  
EOF  
  
cd $MEDIA_HOME  
echo "## JDK x86 Cipher Test with Unlimited JCE ##"  
"$INSTALL_PATH/$JDK_VERSION" _x86/bin/javac CipherTest.java  
"$INSTALL_PATH/$JDK_VERSION" _x86/bin/java CipherTest  
echo "## JDK x64 Cipher Test with Unlimited JCE ##"  
"$INSTALL_PATH/$JDK_VERSION" _x64/bin/javac CipherTest.java  
"$INSTALL_PATH/$JDK_VERSION" _x64/bin/java CipherTest  
  
chown -R nobody:nobody /opt/CA/jdk  
  
echo "## Done with JDK installation##"  
echo "Started at $STARTTIME"  
echo "Done at `date`"  
echo "## Done ##"  
echo ""  
ls -lart /opt/CA/jdk
```

CLI Example: step121_root_Install_JBOSS_EAP_for_IG



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0-19\steps\step12

```
# JBOSS EAP - For IG Deployment
#
#_PASSWORD=Password01
MEDIAFOLDER=/opt/CA/media/iso
JAVA_HOME=/opt/CA/jdk/jdk1.7.0_71_x64
JBOSS_FULL_VER=jboss-eap-6.4.0
#JBOSS_FULL_VER=jboss-eap-6.2.0
#JBOSS_FULL_VER=jboss-eap-6.1.0
JBOSS_VER=jboss-eap-6.4
#JBOSS_VER=jboss-eap-6.2
#JBOSS_VER=jboss-eap-6.1
JBOSS_ROOT=/opt/CA/jboss
JBOSS01_IG_HOME="$JBOSS_ROOT"/ig_01
JBOSS02_IG_HOME="$JBOSS_ROOT"/ig_02
USER=jboss
GROUP=jboss

PATH=$PATH:$JAVA_HOME/bin

# IG specific install variables for JBOSS J2EE
IG_JAVA_HOME=/opt/CA/jdk/jdk1.7.0_71_x64/jre
IG_MAX_MEMORY=2048m
IG_GROUPS_HOSTS=sandbox01[7800],sandbox02[7900]
IG_DB_HOST_NAME=localhost
IG_DB_PORT=1521
IG_DB_SERVICE_ID=XE
IG_DB_USER_NAME=idb
IG_DB_USER_PASSWORD=Password01
# IG_DB_USER_PASSWORD_HASH will be generated from the variable
IG_DB_USER_PASSWORD using the IAMSuite Pwdtool

echo "Ensure JBOSS for all components is not running"
echo "Ignore any error message related to missing init.d scripts for"
echo "components that may not be installed yet or not running"
systemctl daemon-reload >/dev/null 2>&1
/etc/init.d/jboss-ig01 stop >/dev/null 2>&1

#echo "Kill any remaining process open by jboss user ID"
#kill -9 `ps -ef | grep jboss | grep -v grep | awk '{print $2}'` > /dev/null 2>&1

echo "# Clean up prior deployment by removing folders"
rm -rf $JBOSS01_IG_HOME
#userdel -r $USER

#echo "# Make JBOSS folder for install and create soft link for $JBOSS_ROOT"
#mkdir -p $JBOSS_ROOT

#echo "# Create JBOSS User"
adduser -U -M -d $JBOSS_ROOT -p $_PASSWORD $USER

echo "# Unzip $JBOSS_FULL_VER from $JBOSS01_IG_HOME/$JBOSS_VER"
unzip -u $MEDIAFOLDER/jboss/$JBOSS_FULL_VER.zip -d $JBOSS01_IG_HOME >
/dev/null 2>&1
74
```

```
echo "# Update JBOSS configuration files prior to SIGMA install "
cp -r -p /opt/CA/media/iso/custom/sigma/* $JBOSS01_IG_HOME/$JBOSS_VER/

echo "Update JAVA_HOME in select JBOSS shell scripts"
sed -i "s|IG_JAVA_HOME|$IG_JAVA_HOME|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/bin/add-user.sh"
sed -i "s|IG_JAVA_HOME|$IG_JAVA_HOME|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/bin/jboss-cli.sh"
sed -i "s|IG_JAVA_HOME|$IG_JAVA_HOME|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/bin/jconsole.sh"
sed -i "s|IG_JAVA_HOME|$IG_JAVA_HOME|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/bin/standalone.sh"
sed -i "s|IG_GROUPS_HOSTS|$IG_GROUPS_HOSTS|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/bin/standalone.sh"
file $JBOSS01_IG_HOME/$JBOSS_VER/bin/standalone.sh
grep jdk "$JBOSS01_IG_HOME/$JBOSS_VER/bin/standalone.sh"
grep JGROUPS "$JBOSS01_IG_HOME/$JBOSS_VER/bin/standalone.sh"
sed -i "s|IG_MAX_MEMORY|$IG_MAX_MEMORY|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/bin/standalone.conf"
file $JBOSS01_IG_HOME/$JBOSS_VER/bin/standalone.conf
grep SIG_MAX_MEMORY "$JBOSS01_IG_HOME/$JBOSS_VER/bin/standalone.conf"

echo "Update JBOSS DataSource in select JBOSS standalone xml configuration files"
cp -r -p "$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone-full-ha.xml.template.oracle.$JBOSS_VER"
"$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone-full-ha.xml"
cp -r -p "$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone-full.xml.template.oracle.$JBOSS_VER"
"$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone-full.xml"
cp -r -p
"$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone.xml.template.oracle.$JBOSS_VER"
"$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone.xml"

echo "Update DB HOST NAME to $IG_DB_HOST_NAME in standalone.xml file(s)"
sed -i "s|IG_DB_HOST_NAME|$IG_DB_HOST_NAME|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone-full-ha.xml"
sed -i "s|IG_DB_HOST_NAME|$IG_DB_HOST_NAME|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone-full.xml"
sed -i "s|IG_DB_HOST_NAME|$IG_DB_HOST_NAME|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone.xml"

echo "Update DB PORT # to $IG_DB_PORT in standalone.xml file(s)"
sed -i "s|IG_DB_PORT|$IG_DB_PORT|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone-full-ha.xml"
sed -i "s|IG_DB_PORT|$IG_DB_PORT|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone-full.xml"
sed -i "s|IG_DB_PORT|$IG_DB_PORT|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone.xml"
```

```
echo "Update DB SERVICE ID to $IG_DB_SERVICE_ID in standalone.xml file(s)"
sed -i "s|IG_DB_SERVICE_ID|$IG_DB_SERVICE_ID|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone-full-ha.xml"
sed -i "s|IG_DB_SERVICE_ID|$IG_DB_SERVICE_ID|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone-full.xml"
sed -i "s|IG_DB_SERVICE_ID|$IG_DB_SERVICE_ID|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone.xml"

echo "Update DB USER NAME to $IG_DB_USER_NAME in standalone.xml file(s)"
sed -i "s|IG_DB_USER_NAME|$IG_DB_USER_NAME|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone-full-ha.xml"
sed -i "s|IG_DB_USER_NAME|$IG_DB_USER_NAME|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone-full.xml"
sed -i "s|IG_DB_USER_NAME|$IG_DB_USER_NAME|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone.xml"

echo "Generate Password Hash from $IG_DB_USER_PASSWORD"
JAVA_EXE=$JAVA_HOME/bin/java
IAM_HOME=/opt/CA/identityManager
PASSWORDTOOLHOME=/opt/CA/media/iso/ca/iam_suite/r12-6-
6/server/PasswordTool/bin
PATH=$PATH:$JAVA_HOME/bin

echo "# Update Password hash"
cd $PASSWORDTOOLHOME
IG_DB_USER_PASSWORD_HASH_OUTPUT=$(($JAVA_EXE -classpath
..lib/dmutils.jar..lib/log4j.jar..lib/cryptoFIGS.jar com.netegrity.rtl.jce.JSafeTools -
JSafe -p $IG_DB_USER_PASSWORD))
IG_DB_USER_PASSWORD_HASH=$(echo $IG_DB_USER_PASSWORD_HASH_OUTPUT |
grep "{PES}" | awk '{print $6}')
echo "# The password hash for $IG_DB_USER_PASSWORD is:
$IG_DB_USER_PASSWORD_HASH "
#####
# Use until a Password Hash process is well-defined
IG_DB_USER_PASSWORD_HASH=$IG_DB_USER_PASSWORD
#####

echo "Update DB USER PASSWORD to $IG_DB_USER_PASSWORD_HASH in
standalone.xml file(s)"
sed -i "s|IG_DB_USER_PASSWORD_HASH|$IG_DB_USER_PASSWORD_HASH|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone-full-ha.xml"
sed -i "s|IG_DB_USER_PASSWORD_HASH|$IG_DB_USER_PASSWORD_HASH|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone-full.xml"
sed -i "s|IG_DB_USER_PASSWORD_HASH|$IG_DB_USER_PASSWORD_HASH|g"
"$JBOSS01_IG_HOME/$JBOSS_VER/standalone/configuration/standalone.xml"

echo "# Update permissions to jboss"
chown -R $USER:$GROUP $JBOSS_ROOT

echo "# Check that standalone.sh was updated
ls -al $JBOSS_ROOT/
ls -al $JBOSS01_IG_HOME/
ls -al $JBOSS01_IG_HOME/$JBOSS_VER/bin/standalone.sh"
```

CLI Example: step123_-root-_Create_IG_db_as_Oracle_User_via_su



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```
# Create Oracle login ID for IG (four dB Instances)
#
USER=oracle
GROUP=dba
IGUSER1=igdba_eurekify_sdb
IGUSER2=igdba_eurekify_ticketdb
IGUSER3=igdba_WPDS
IGUSER4=igdba_gvm_datawarehouse
_PASSWORD=Password01
_PORT=1521

# Install an warpper for sqlplus to add in history and command line up/down
# http://sourceforge.net/projects/gqlplus/files/latest/download
# gqlplus-1.16.tar.gz

echo "#####
echo "##### Create DB Users $IMUSER, $IPUSER, $IGUSER #####
echo "#####"
su - oracle -c "sqlplus system/$_PASSWORD" << EOF
/*
/*
/* IG (Identity Governance DB User) */
/*
/*
drop user $IGUSER1 cascade;
create user $IGUSER1 identified by $_PASSWORD;
grant connect, resource to $IGUSER1;
grant ALTER SESSION, CREATE CLUSTER, CREATE DATABASE LINK, CREATE SEQUENCE,
CREATE SESSION, CREATE SYNONYM, CREATE TABLE, CREATE VIEW, CREATE CLUSTER,
CREATE INDEXTYPE, CREATE OPERATOR, CREATE PROCEDURE, CREATE SEQUENCE,
CREATE TABLE, CREATE TRIGGER, CREATE TYPE, SELECT ANY DICTIONARY to $IGUSER1;
/*
/*
/* IG (Identity Governance Ticket DB User) */
/*
/*
drop user $IGUSER2 cascade;
create user $IGUSER2 identified by $_PASSWORD;
grant connect, resource to $IGUSER2;
grant ALTER SESSION, CREATE CLUSTER, CREATE DATABASE LINK, CREATE SEQUENCE,
CREATE SESSION, CREATE SYNONYM, CREATE TABLE, CREATE VIEW, CREATE CLUSTER,
CREATE INDEXTYPE, CREATE OPERATOR, CREATE PROCEDURE, CREATE SEQUENCE,
CREATE TABLE, CREATE TRIGGER, CREATE TYPE, SELECT ANY DICTIONARY to $IGUSER2;
```

```
/*
/*
/* IG (Identity Governance Workflow DB User) */
/*
/*
drop user $IGUSER3 cascade;
create user $IGUSER3 identified by $_PASSWORD;
grant connect, resource to $IGUSER3;
grant ALTER SESSION, CREATE CLUSTER, CREATE DATABASE LINK, CREATE SEQUENCE,
CREATE SESSION, CREATE SYNONYM, CREATE TABLE, CREATE VIEW, CREATE CLUSTER,
CREATE INDEXTYPE, CREATE OPERATOR, CREATE PROCEDURE, CREATE SEQUENCE,
CREATE TABLE, CREATE TRIGGER, CREATE TYPE, SELECT ANY DICTIONARY to $IGUSER3;
/*
/*
/* IG (Identity Governance DataWarehouse DB User) */
/*
/*
drop user $IGUSER4 cascade;
create user $IGUSER4 identified by $_PASSWORD;
grant connect, resource to $IGUSER4;
grant ALTER SESSION, CREATE CLUSTER, CREATE DATABASE LINK, CREATE SEQUENCE,
CREATE SESSION, CREATE SYNONYM, CREATE TABLE, CREATE VIEW, CREATE CLUSTER,
CREATE INDEXTYPE, CREATE OPERATOR, CREATE PROCEDURE, CREATE SEQUENCE,
CREATE TABLE, CREATE TRIGGER, CREATE TYPE, SELECT ANY DICTIONARY to $IGUSER4;
/*
/*
/* Show All Users Created in database */
select * from all_users;
/*
/*
EOF

# Ensure ownership is correct by the oracle account
chown -R $USER:$GROUP /opt/CA/db
chown -R $USER:$GROUP /u01/app/oracle
chown -R $USER:$GROUP /u01/

echo "Reminder REBOOT server with Oracle if unable to apply SQL updates"
```

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CLI Example: step124_-root-_Install_CA_IG_Server_r12-6-6_EAR_On_JBOSS_First_HA_Node



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```
# Install Identity Governance
#
# Installer require JDK 1.6
#
# IG requires the following packages to be extracted:
#
# 1. Installer - CA-IdentityGovernance-12.6.03-Installer.zip
# 2. JBOSS - CA-IdentityGovernance-12.6.03-Windows-JBOSS.zip
# 3. Lang - CA-IdentityGovernance-12.6.03-Language-Files.zip
#
# IG requires the following files, in zip format, to be under the same folder
#
# 4. Core - CA-IdentityGovernance-12.6.03-Core.zip {It is extracted to
/tmp/#####.tmp/assembly}
#
# IG requires the database to be externally exposed (not only localhost)
#
# 5. netstat -an |grep 1521
#   tcp      0  0.0.0.0:1521      0.0.0.0:*      LISTEN
#
#
#
# Usage: InstCAIdentityGovernance [-f <path_to_installer_properties_file>] -o
options]
# where options include:
# -? show this help text
# -i [swing | console | silent] specify the user interface mode for the installer
# -D<name>=<value> specify installer properties
# -r <path_to_generate_response_file> Generates response file.
# The options field may also include the following in case of uninstaller
# if it is enabled for Maintenance Mode
# -add <feature_name_1> [<feature_name_2 ...] Add Specified Features
# -remove <feature_name_1> [<feature_name_2 ...] Remove Specified Features
# -repair Repair Installation
# -uninstall Uninstall
#
#
# strace -v -o strace-ig.txt ./InstCAIdentityGovernance.bin -m console -r
ig.silent.record.txt
# strace -v -o strace-ig.txt ./InstCAIdentityGovernance.bin -i console -r
ig.silent.record.txt
#
# -options "responsefile.txt" -silent

JAVA_VER=java1.6.0_45_x64
JAVA_HOME="/opt/CA/jdk/$JAVA_VER"
PATH=$PATH:$JAVA_HOME/bin
LD_LIBRARY_PATH=/usr/lib:/usr/lib64:$LD_LIBRARY_PATH
MEDIAFOLDER=/opt/CA/media/iso
export JAVA_HOME PATH LD_LIBRARY_PATH

echo $JAVA_HOME
echo $PATH
76
```

```
echo "Shutdown IG if running"
/etc/init.d/jboss_ig01 stop > /dev/null 2>&1

#echo "Uninstall Prior Deployment #1"
#cd $MEDIAFOLDER/ca/iam_suite/r12-6-6/gm_server/
#./InstCAIdentityGovernance.bin -uninstall
echo "Uninstall Prior Deployment #2"
cd "/opt/CA/RCM/Server/Uninstall_CA\ Identity\ Governance" > /dev/null 2>&1
."Uninstall\ CA\ Identity\ Governance"-i silent > /dev/null 2>&1
cd $MEDIAFOLDER/ca/iam_suite/r12-6-6/gm_server/
echo "Remove any leftover folders"
rm -rf "/opt/CA/RCM/Server/Uninstall_CA\ Identity\ Governance" > /dev/null 2>&1

echo "Remove Prior Extracted Files"
cd $MEDIAFOLDER/ca/iam_suite/r12-6-6/gm_server/
rm -rf $MEDIAFOLDER/ca/iam_suite/r12-6-6/gm_server/InstCAIdentityGovernance.bin
rm -rf $MEDIAFOLDER/ca/iam_suite/r12-6-6/gm_server/InstCAIdentityGovernance.exe
rm -rf $MEDIAFOLDER/ca/iam_suite/r12-6-6/gm_server/CA-IdentityGovernance-
12.6.03-Windows-JBOSS
rm -rf $MEDIAFOLDER/ca/iam_suite/r12-6-6/gm_server/CA-IdentityGovernance-
12.6.03-Language-Files

echo "Unzip the IG Installer"
unzip -o CA-IdentityGovernance-12.6.03-Installer.zip
chmod 555 InstCAIdentityGovernance.bin
echo "Unzip the IG JBOSS"
unzip -o CA-IdentityGovernance-12.6.03-Windows-JBOSS.zip > /dev/null 2>&1
echo "Unzip the IG Lang"
unzip -o CA-IdentityGovernance-12.6.03-Language-Files.zip > /dev/null 2>&1

echo "Install IG"
# ./InstCAIdentityGovernance.bin -r -i console
cp -r -p ig.silent.save.noiamcs.properties installer.properties
cp -r -p ig.silent.save.noiamcs.properties InstCAIdentityGovernance.properties
#strace -s 1024 -v -t -e open,read -o save.txt ./InstCAIdentityGovernance.bin -f
/opt/CA/media/iso/ca/iam_suite/r12-6-6/gm_server/installer.properties -i silent

$MEDIAFOLDER/ca/iam_suite/r12-6-6/gm_server/InstCAIdentityGovernance.bin -f
installer.properties -i silent

echo "Remove Prior Extracted Files to clean up space"
cd $MEDIAFOLDER/ca/iam_suite/r12-6-6/gm_server/
rm -rf $MEDIAFOLDER/ca/iam_suite/r12-6-6/gm_server/InstCAIdentityGovernance.bin
rm -rf $MEDIAFOLDER/ca/iam_suite/r12-6-6/gm_server/InstCAIdentityGovernance.exe
rm -rf $MEDIAFOLDER/ca/iam_suite/r12-6-6/gm_server/CA-IdentityGovernance-
12.6.03-Windows-JBOSS
rm -rf $MEDIAFOLDER/ca/iam_suite/r12-6-6/gm_server/CA-IdentityGovernance-
12.6.03-Language-Files

ls -lart /opt/CA/RCM
```

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CLI Examples: CA IP (Identity Portal/SIGMA) Installation

- CA IAM Suite Identity Portal (SIGMA)
- Assumption:
 - CA IAM ISO is used for all installs
 - Note: IP will create a silent install file, **but does not appear to consume it.**
 - Use IP install to use 2nd option to extract IP installation for use.
 - Created prescriptive install with Oracle Database (XA)
 - SIGMA require JDK 1.6, but appears to be able to use JDK 1.7
- step130_root_Install_JDK6_x86_and_x64_for_SIGMA
- step131_root_Install_JBOSS_EAP_for_SIGMA
- step132_root_Extract_and_Install_CA_IM_r12-6-6_Identity_Portal_SIGMA_Server_r1-6-0cr1_WAR_On_JBOSS



CLI Example: step130_root_Install_JDK6_x86_and_x64_for_SIGMA

```
##### Shell script to install three(3) packages in the follow order: #####
##### Java JDK 1.6 b45+ (x86 / x64) , Java JCE Unlimited Encryption Libraries #####
#####
##### Java JDK 1.6 b45+ (2015/05/12 b79) #####
##### Java JCE 1.6 #####
STARTTIME=`date`  
echo ""  
echo $STARTTIME  
  
MEDIA_HOME=/opt/CA/media/iso/jdk  
INSTALL_PATH=/opt/CA/jdk  
JDK_VERSION=jdk1.6.0_45  
JDK_GZ_NAME_X86=jdk-6u45-linux-i586.gz  
JDK_GZ_NAME_X64=jdk-6u45-linux-x64.gz  
  
mkdir -p "$INSTALL_PATH"  
  
echo "### Clean up prior installation of x86 JDK ###"  
cd $MEDIA_HOME  
rm -rf "$MEDIA_HOME/$JDK_VERSION"  
rm -rf "$INSTALL_PATH/$JDK_VERSION"_x86  
#tar -zxfv "$MEDIA_HOME/$JDK_GZ_NAME_X86" >/dev/null 2>&1  
/opt/CA/media/iso/jdk/jdk-6u45-linux-i586.bin >/dev/null 2>&1  
mv "$MEDIA_HOME/$JDK_VERSION" "$INSTALL_PATH/$JDK_VERSION"_x86  
  
echo "### Clean up prior installation of x64 JDK ###"  
rm -rf "$MEDIA_HOME/$JDK_VERSION"  
rm -rf "$INSTALL_PATH/$JDK_VERSION"_x64  
#tar -zxfv "$MEDIA_HOME/$JDK_GZ_NAME_X64" >/dev/null 2>&1  
/opt/CA/media/iso/jdk/jdk-6u45-linux-x64.bin >/dev/null 2>&1  
mv "$MEDIA_HOME/$JDK_VERSION" "$INSTALL_PATH/$JDK_VERSION"_x64  
  
echo "### Check status of JDK 6 x86 ###"  
file "$INSTALL_PATH/$JDK_VERSION"_x86/bin/java  
echo "#####"  
echo "### Check status of JDK 6 x64 ###"  
file "$INSTALL_PATH/$JDK_VERSION"_x64/bin/java  
  
echo "### Update JCE libraries for JDK 6 x86 and x64 ###"  
cd $MEDIA_HOME/jce_6  
cp -r -p *.jar "$INSTALL_PATH/$JDK_VERSION"_x86/jre/lib/security  
cp -r -p *.jar "$INSTALL_PATH/$JDK_VERSION"_x64/jre/lib/security
```

```
echo "### JCE Test (viewable on console) ###"  
echo "### Check JAVA JCE Encryption for Unlimited Strength ###"  
cat << EOF > $MEDIA_HOME/CipherTest.java  
import javax.crypto.Cipher;  
class CipherTest {  
    public static void main(String args[]) {  
        try {  
            int maxKeyLen = Cipher.getMaxAllowedKeyLength("AES");  
            if(maxKeyLen < 256) {  
                System.out.println("FAILED: Max key length too small! (" + maxKeyLen + ".);");  
            } else {  
                System.out.println("PASSED: Max key length OK! (" + maxKeyLen + ".);");  
            }  
        } catch(Exception e) {  
            System.out.println("FAILED: No AES found!");  
        }  
    }  
}  
EOF  
  
cd $MEDIA_HOME  
echo "### JDK x86 Cipher Test with Unlimited JCE ###"  
"$INSTALL_PATH/$JDK_VERSION"_x86/bin/javac CipherTest.java  
"$INSTALL_PATH/$JDK_VERSION"_x86/bin/java CipherTest  
echo "#####"  
echo "### JDK x64 Cipher Test with Unlimited JCE ###"  
"$INSTALL_PATH/$JDK_VERSION"_x64/bin/javac CipherTest.java  
"$INSTALL_PATH/$JDK_VERSION"_x64/bin/java CipherTest  
  
chown -R nobody:nobody /opt/CA/jdk  
  
echo "#####"  
echo "Done with JDK installation"  
echo "Started at $STARTTIME"  
echo "Done at `date`"  
echo "#####"  
echo ""  
ls -lart /opt/CA/jdk
```

CLI Example: step131_root_Install_JBOSS_EAP_for_SIGMA



H:\sandbox\\
0-19\steps\step13

```
# JBOSS EAP - Deploy four (4) instances
# 1 for IdP
```

```
_PASSWORD=Password01
```

```
MEDIAFOLDER=/opt/CA/media/iso
```

```
JAVA_HOME=/opt/CA/jdk/jdk1.7.0_71_x64
```

```
JBOSS_FULL_VER=jboss-eap-6.4.0
```

```
#JBOSS_FULL_VER=jboss-eap-6.2.0
```

```
#JBOSS_FULL_VER=jboss-eap-6.1.0
```

```
JBOSS_VER=jboss-eap-6.4
```

```
#JBOSS_VER=jboss-eap-6.2
```

```
#JBOSS_VER=jboss-eap-6.1
```

```
JBOSS_ROOT=/opt/CA/jboss
```

```
JBOSS01_IP_HOME="$JBOSS_ROOT"/ip_01
```

```
USER=jboss
```

```
GROUP=jboss
```

```
PATH=$PATH:$JAVA_HOME/bin
```

```
# IP specific install variables for JBOSS J2EE
```

```
IP_JAVA_HOME=/opt/CA/jdk/jdk1.6.0_45_x64/jre
```

```
IP_MAX_MEMORY=2048m
```

```
IP_GROUPS_HOSTS=sandbox01[7800],sandbox02[7900]
```

```
IP_DB_HOST_NAME=localhost
```

```
IP_DB_PORT=1521
```

```
IP_DB_SERVICE_ID=XE
```

```
IP_DB_USER_NAME=idba
```

```
IP_DB_USER_PASSWORD=Password01
```

```
# IP_DB_USER_PASSWORD_HASH will be generated from the variable
```

```
IP_DB_USER_PASSWORD using the IAMSuite Pwdtool
```

```
echo "Ensure JBOSS for all components is not running"
```

```
echo "Ignore any error message related to missing init.d scripts for"
```

```
echo "components that may not be installed yet or not running"
```

```
systemctl daemon-reload >/dev/null 2>&1
```

```
/etc/init.d/jboss-ip01 stop >/dev/null 2>&1
```

```
#echo "Kill any remaining process open by jboss user ID"
```

```
#kill -9 `ps -ef | grep jboss | grep -v grep | awk '{print $2}'` > /dev/null 2>&1
```

```
echo "# Clean up prior deployment by removing folders"
```

```
rm -rf $JBOSS01_IP_HOME
```

```
#userdel -r $USER
```

```
#echo "# Make JBOSS folder for install and create soft link for $JBOSS_ROOT"
```

```
#mkdir -p $JBOSS_ROOT
```

```
#echo "# Create JBOSS User"
```

```
adduser -U -M -d $JBOSS_ROOT -p $_PASSWORD $USER
```

```
echo "# Unzip $JBOSS_FULL_VER from $JBOSS01_IP_HOME/$JBOSS_VER"
```

```
unzip -u $MEDIAFOLDER/jboss/$JBOSS_FULL_VER.zip -d $JBOSS01_IP_HOME >
```

```
/dev/null 2>1
```

```
79
```

```
echo "# Update JBOSS configuration files prior to SIGMA install "
cp -r -p /opt/CA/media/iso/custom/sigma/* $JBOSS01_IP_HOME/$JBOSS_VER/
```

```
echo "Update JAVA_HOME in select JBOSS shell scripts"
```

```
sed -i "s|IP_JAVA_HOME|$IP_JAVA_HOME|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/bin/add-user.sh"
```

```
sed -i "s|IP_JAVA_HOME|$IP_JAVA_HOME|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/bin/jboss-cli.sh"
```

```
sed -i "s|IP_JAVA_HOME|$IP_JAVA_HOME|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/bin/jconsole.sh"
```

```
sed -i "s|IP_JAVA_HOME|$IP_JAVA_HOME|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/bin/standalone.sh"
```

```
sed -i "s|IP_GROUPS_HOSTS|$IP_GROUPS_HOSTS|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/bin/standalone.sh"
```

```
file $JBOSS01_IP_HOME/$JBOSS_VER/bin/standalone.sh
```

```
grep jdk "$JBOSS01_IP_HOME/$JBOSS_VER/bin/standalone.sh"
```

```
grep JGROUPS "$JBOSS01_IP_HOME/$JBOSS_VER/bin/standalone.sh"
```

```
sed -i "s|IP_MAX_MEMORY|${IP_MAX_MEMORY}|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/bin/standalone.conf"
```

```
file $JBOSS01_IP_HOME/$JBOSS_VER/bin/standalone.conf
```

```
grep ${IP_MAX_MEMORY} "$JBOSS01_IP_HOME/$JBOSS_VER/bin/standalone.conf"
```

```
echo "Update JBOSS DataSource in select JBOSS standalone xml configuration files"
```

```
cp -r -p "$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone-full-ha.xml.template.oracle.$JBOSS_VER"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone-full-ha.xml.template.oracle.$JBOSS_VER"
```

```
cp -r -p "$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone-full.xml.template.oracle.$JBOSS_VER"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone-full.xml.template.oracle.$JBOSS_VER"
```

```
cp -r -p "$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone.xml.template.oracle.$JBOSS_VER"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone.xml.template.oracle.$JBOSS_VER"
```

```
echo "Update DB HOST NAME to $IP_DB_HOST_NAME in standalone.xml file(s)"
```

```
sed -i "s|IP_DB_HOST_NAME|$IP_DB_HOST_NAME|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone-full-ha.xml"
```

```
sed -i "s|IP_DB_HOST_NAME|$IP_DB_HOST_NAME|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone-full.xml"
```

```
sed -i "s|IP_DB_HOST_NAME|$IP_DB_HOST_NAME|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone.xml"
```

```
echo "Update DB PORT # to $IP_DB_PORT in standalone.xml file(s)"
```

```
sed -i "s|IP_DB_PORT|$IP_DB_PORT|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone-full-ha.xml"
```

```
sed -i "s|IP_DB_PORT|$IP_DB_PORT|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone-full.xml"
```

```
sed -i "s|IP_DB_PORT|$IP_DB_PORT|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone.xml"
```

```
echo "Update DB SERVICE ID to $IP_DB_SERVICE_ID in standalone.xml file(s)"
```

```
sed -i "s|IP_DB_SERVICE_ID|$IP_DB_SERVICE_ID|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone-full-ha.xml"
```

```
sed -i "s|IP_DB_SERVICE_ID|$IP_DB_SERVICE_ID|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone-full.xml"
```

```
sed -i "s|IP_DB_SERVICE_ID|$IP_DB_SERVICE_ID|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone.xml"
```

```
echo "Update DB USER NAME to $IP_DB_USER_NAME in standalone.xml file(s)"
```

```
sed -i "s|IP_DB_USER_NAME|$IP_DB_USER_NAME|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone-full-ha.xml"
```

```
sed -i "s|IP_DB_USER_NAME|$IP_DB_USER_NAME|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone-full.xml"
```

```
sed -i "s|IP_DB_USER_NAME|$IP_DB_USER_NAME|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone.xml"
```

```
echo "Generate Password Hash from $IP_DB_USER_PASSWORD"
```

```
JAVA_EXE=$JAVA_HOME/bin/java
```

```
IAM_HOME=/opt/CA/identityManager
```

```
PASSWORDTOOLHOME=/opt/CA/media/iso/ca/iam_suite/r12-6-
```

```
6/server/PasswordTool/bin
```

```
PATH=$PATH:$JAVA_HOME/bin
```

```
echo "# Update Password hash "
```

```
cd $PASSWORDTOOLHOME
```

```
IP_DB_USER_PASSWORD_HASH_OUTPUT=$(($JAVA_EXE -classpath
```

```
..:/lib/idmutils.jar...:/lib/log4j.jar...:/lib/cryptoJFIPS.jar com.netegrity.rtl.jce.JSafeTools -
```

```
JSAFE -p $IP_DB_USER_PASSWORD)"
```

```
IP_DB_USER_PASSWORD_HASH=$(echo $IP_DB_USER_PASSWORD_HASH_OUTPUT | grep
```

```
"{PBES}" | awk '{print $6}'
```

```
echo "# The password hash for $IP_DB_USER_PASSWORD is:
```

```
$IP_DB_USER_PASSWORD_HASH "
```

```
#####
# Use until a Password Hash process is well-defined
```

```
IP_DB_USER_PASSWORD_HASH=$IP_DB_USER_PASSWORD
```

```
#####
#####
```

```
echo "Update DB USER PASSWORD to $IP_DB_USER_PASSWORD_HASH in
```

```
standalone.xml file(s)"
```

```
sed -i "s|IP_DB_USER_PASSWORD_HASH|$IP_DB_USER_PASSWORD_HASH|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone-full-ha.xml"
```

```
sed -i "s|IP_DB_USER_PASSWORD_HASH|$IP_DB_USER_PASSWORD_HASH|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone-full.xml"
```

```
sed -i "s|IP_DB_USER_PASSWORD_HASH|$IP_DB_USER_PASSWORD_HASH|g"
```

```
"$JBOSS01_IP_HOME/$JBOSS_VER/standalone/configuration/standalone.xml"
```

```
echo "#####
# Update permissions to jboss"
```

```
chown -R $USER:$GROUP $JBOSS_ROOT
```



CLI Example: step132_root_Extract_and_Install_CA_IM_r12-6-6_Identity_Portal_SIGMA_Server_r1-6-Ocr1_WAR_On_JBOSS

```
# Install the CA IM SIGMA UI
#
# Requires 1.6 JDK

# Variables
BACKUPDATE="date +%Y%m%d_%H%M%S_%N"
#IATEMPDIR="/your/temp/space/directory"
MEDIAFOLDER=/opt/CA/media/iso
PROPERTIESFOLDER=/opt/CA/media/steps/properties
JAVA_VER=jdk1.6.0_45
JAVA_ROOT=/opt/CA/jdk
JAVA_HOME=$JAVA_ROOT/$JAVA_VER_x64
JBOSFull_VER=jboss-eap-6.4.0
#JBOSFull_VER=jboss-eap-6.2.0
#JBOSFull_VER=jboss-eap-6.1.0
JBOSVer=jboss-eap-6.4
#JBOSVer=jboss-eap-6.2
#JBOSVer=jboss-eap-6.1
JBOS_ROOT=/opt/CA/jboss
JBOS01_IP=$JAVA_HOME"/$JBOS_ROOT"/ip_01/"$JBOSVer"
USER=jboss
GROUP=jboss
PASSWORD=password01
```

```
#####
##### SIGMA VARIABLES #####
SIGMA_HOME=/opt/CA/SIGMA
SIGMA_USER_ID=sigma
SIGMA_USER_PASSWORD=password01!
SIGMA_KEYSTORE_FILE=SIGMA_keystore
SIGMA_KEYSTORE_PASSWORD=password01!
SIGMA_KEY_NAME=sigma.key
SIGMA_KEY_PASSWORD=password01!
SIGMA_KEY_LENGTH=256
```

```
PATH=$JAVA_HOME/bin
echo "Ensure no JBoss for all IP components are not running"
echo "Ignore any error message related to missing init.d scripts for"
echo "Components that may not be initialized yet or not running"
/etc/init.d/boss-ip01 stop >/dev/null 2>1
```

```
#echo "Kill any remaining process open by jboss user ID"
kill -9 ps -ef | grep /boss | grep ip_01 | grep -v grep | awk '{print $2}' >
/dev/null 2>1
```

```
echo "# Remove folder structure - left from any prior installs"
rm -rf $SIGMA_HOME
```

```
# To view SIGMA options; use more SIGMA_1.6.bin
```

```
echo ""
echo "# Follow manual steps listed on p25,
```

```
SIGMA_Installation_Guide.pdf"
```

```
# To install SIGMA manually, you must first have all the SIGMA pre-requisites in place.
```

```
# Please follow the instructions in the pre-requisites section in this document,
```

```
# before proceeding with the manual installation procedure.
```

```
# Once the pre-requisites are fulfilled, you will need to perform the following steps to install SIGMA manually:
```

```
# each of the JBoss application servers:
```

```
echo " 1. Extract the SIGMA application and sample configuration files from the SIGMA installer."
```

```
# Note: The included silent install option will fail; use console mode to EXTRACT to /opt/CA/
```

```
# This will create a subfolder /opt/CA/SIGMA; use chown -R jboss:jboss /opt/CA/SIGMA to reset ownership
```

```
# Then create a tar for prescriptive silent installs: tar -cvf sigma-1-6-for-iamsuite-r12-6-6-extract.tar /opt/CA/SIGMA
```

```
/opt/CA/media/iso/custom/sigma-extract/sigma-1-6-0-for-iamsuite-r12-6-6-extract.tar
```

```
"
```

```
mkdir -p $SIGMA_HOME/logs
mkdir -p $SIGMA_HOME/resources
cd /
tar -xvf /opt/CA/media/iso/custom/sigma-extract/sigma-1-6-0-
cr1_for-iamsuite-r12-6-6-extract.tar >/dev/null 2>1

echo " 2. Generate a SIGMA keystore file."
echo " Note: i. cd /opt/CA/SIGMA/sigma-keystore-tool"
cd $SIGMA_HOME/sigma-keystore-tool
#
# ii. java -jar CreateSigmaKeystore.jar <keystore_file_path>
<keystore_password> <key_name> <key_password>
echo ""
echo "java -jar KeystoreCreator.jar -keyName $SIGMA_KEY_NAME -
keyPassword $SIGMA_KEY_PASSWORD -keystorePassword
$SIGMA_KEYSTORE_PASSWORD -keystoreLocation
$SIGMA_KEYSTORE_FILE -keyLength $SIGMA_KEY_LENGTH"
#
echo ""
echo "java -jar KeystoreCreator.jar -keyName $SIGMA_KEY_NAME -
keyPassword $SIGMA_KEY_PASSWORD -keystorePassword
$SIGMA_KEYSTORE_PASSWORD -keystoreLocation
$SIGMA_KEYSTORE_FILE -keyLength $SIGMA_KEY_LENGTH"

#INFO: USAGE: <keyName> <keyPassword> <keyPassword> -keystorePath <keystorePassword> -keystoreLocation <keystoreLength> <keyLength>
#Where: <keyName> - Alias for the key <keyPassword> - Passphrase to secure the key <keystorePassword> - Passphrase to secure the keystore <keystoreLocation> - Path for the key store <keyLength> - Key Length in bits (128,256,512,1024,2048,4096,etc)
#
# SEVERE: Failed to generate keystore
#java.security.InvalidParameterException: Wrong keysize: must be equal to 128, 192 or 256
#
# iii. Update the $JBOS01_IP_HOME/bin/standalone.sh with the JVM variables"

```

```
echo " 3. Set SIGMA specific JVM options in the application server."
# Note: i. Update the $JBOS01_IP_HOME/bin/standalone.sh & standalone.conf
# ii. See custom updates under /opt/CA/media/iso/custom/sigma for JBoss
sed -i '$SIGMA_HOME$$SIGMA_HOME'g
$JBOS01_IP_HOME/bin/standalone.sh
sed -i '$SIGMA_USER_ID|$SIGMA_USER_ID'g
$JBOS01_IP_HOME/bin/standalone.sh
sed -i '$SIGMA_USER_PASSWORD|$SIGMA_USER_PASSWORD'g
$JBOS01_IP_HOME/bin/standalone.sh
sed -i '$SIGMA_KEYSTORE_FILE|$SIGMA_KEYSTORE_FILE'g
$JBOS01_IP_HOME/bin/standalone.sh
sed -i '$SIGMA_KEYSTORE_PASSWORD|$SIGMA_KEYSTORE_PASSWORD'g
$JBOS01_IP_HOME/bin/standalone.sh
sed -i '$SIGMA_KEY_NAME|$SIGMA_KEY_NAME'g
$JBOS01_IP_HOME/bin/standalone.sh
sed -i '$SIGMA_KEY_PASSWORD|$SIGMA_KEY_PASSWORD'g
$JBOS01_IP_HOME/bin/standalone.sh
sed -i '$SIGMA_KEY_LENGTH|$SIGMA_KEY_LENGTH'g
$JBOS01_IP_HOME/bin/standalone.sh
echo ""
grep "IP," "$JBOS01_IP_HOME/bin/standalone.sh"
head -72 $JBOS01_IP_HOME/bin/standalone.sh | tail -61
#####

head -72 $JBOS01_IP_HOME/bin/standalone.sh | tail -61
#####"
```

```
echo " 4. Configure a database data source in the application server."
# Note: i. Update the $JBOS01_IP_HOME/standalone/configuration/standalone-full-ha.xml
# java:jboss/datasources/jdbc/sigmadb
# ii. See custom updates under /opt/CA/media/iso/custom/sigma for JBoss and Oracle Database
# iii. Or use the JBoss CLI while JBoss is running:
echo "/opt/CA/jboss/ip_01/jboss-eap-6.2/bin/jboss-cl.sh --user=admin --
password=password01! --controller=localhost:9999 -c --
file:/opt/CA/SIGMA/boss-scripts/B_DeploySigma.cli"

```

```
echo " [SKIPPED] FOR JBOSS] 5. Configure Bitronix Transaction Manager (for Tomcat Only). [SKIPPED] FOR JBOSS]"
```

```
echo " 6. Deploy the SIGMA Web Archive to the Application Server.
(sigma.war)"
# Note: i. JBoss is running to be runing to use either the JBoss console or JBoss CLI processes to deploy SIGMA
# ii. Use the JBoss CLI while JBoss is running:
# /opt/CA/jboss/ip_01/jboss-eap-6.2/bin/jboss-cl.sh --user=admin --
password=password01! --controller=localhost:9999 -c --
file:/opt/CA/SIGMA/boss-scripts/B_DeploySigma.cli
# Note: iii. May need to replace the variable %WAR_FILE_PATH% with
# /opt/CA/SIGMA/sigma.war to use script
# Note: iv. Alternative approach:
# Copy /opt/CA/SIGMA/sigma.war to /opt/CA/jboss/ip_01/jboss-eap-6.2/standalone/deployments/
# Touch file called /opt/CA/jboss/ip_01/jboss-eap-6.2/standalone/deployments/sigma.war.deployed
# Restart JBoss and monitor the logs
cp -r $SIGMA_HOME/sigma.war
$JBOS01_IP_HOME/standalone/deployments/
touch $JBOS01_IP_HOME/standalone/deployments/sigma.war.deployed
```

```
echo " 7. Create a user to access the SIGMA Admin UI."
# Note: i. Use the JBoss CLI process to build an application user ID of sigma
echo "/opt/CA/jboss/ip_01/jboss-eap-6.2/bin/add-user.sh -a -u sigma -p Password01! -g SigmaAdministrators -r ApplicationRealm"
# Note: ii. This may be executed after SIGMA EAR is deployed, as the files below will be updated.
# /opt/CA/jboss/ip_01/jboss-eap-6.2/standalone/configuration/application-users.properties
# /opt/CA/jboss/ip_01/jboss-eap-6.2/standalone/configuration/application-roles.properties
# /opt/CA/jboss/ip_01/jboss-eap-6.2/domain/configuration/application-users.properties
# /opt/CA/jboss/ip_01/jboss-eap-6.2/domain/configuration/application-roles.properties
echo ""
$JBOS01_IP_HOME/bin/add-user.sh -a -u $SIGMA_USER_ID -p
$SIGMA_USER_PASSWORD -g SigmaAdministrators -r ApplicationRealm
```

```
echo " 8. Verify the installation"
echo ""
chown -R $USER:$GROUP $JBOS01_IP_HOME
chown -R $USER:$GROUP $SIGMA_HOME
chmod 755 $JBOS01_IP_HOME/bin/standalone.sh

echo "# Validate Jboss Update by IM - Date and IAM string"
ls -al $JBOS01_IP_HOME/bin/standalone.sh
ls -al $JBOS01_IP_HOME/bin/standalone.conf
ls -al $JBOS01_IP_HOME/standalone/configuration/standalone*.xml
file $JBOS01_IP_HOME/standalone/configuration/standalone-full-ha.xml
file $JBOS01_IP_HOME/standalone/configuration/standalone-full.xml
file $JBOS01_IP_HOME/standalone/configuration/standalone.xml
grep -l IAM $JBOS01_IP_HOME/bin/standalone.sh
echo "head -72 $JBOS01_IP_HOME/bin/standalone.sh | tail -61"
echo ""
echo ""
#####
head -72 $JBOS01_IP_HOME/bin/standalone.sh | tail -61
#####"
```


Additional Notes & Supporting Slides

IAM: CA Directory Silent Install, Recorder, & Template

- EXAMPLE(S):
 - # Example: Create silent response file
 - # dxsetup.sh -write_responses silent.txt
 - # dxsetup.sh -nodocs -write_responses silent.txt
- WORKING EXAMPLE:
 - \$MEDIAFOLDER/iso/ca/iam_suite/\$DXVERSION/server/CADirectory/dxserver/install/dxsetup.sh -write_responses
\$PROPERTIESFOLDER/cadir-silent.properties
- SILENT INSTALL(S):
 - # dxsetup.sh -silent -responsefile silent.txt
 - #./dxsetup.sh -silent -nodocs -responsefile silent.txt
- WORKING EXAMPLE (with out silent switch)
 - cd \$MEDIAFOLDER/iso/ca/dir/\$DXVER/linux_x86_64/dxserver/install
 - \$MEDIAFOLDER/iso/ca/dir/\$DXVER/linux_x86_64/dxserver/install/dxsetup.sh -responsefile
\$PROPERTIESFOLDER/cadir-silent.properties

IAM Silent Install, Recorder, & Templates

■ IMPS (ProvServ) / IMPD (ProvDir) / IAMCS (ConnectorServer)

- DEBUG: /r12-6-6/server/Provisioning/ProvisioningServer/setup –log @ALL

- OTHER SWITCHES:

- # " -console Performs a console installation"

- # " -silent Performs a Silent installation. Also requires -options <file>"

- # " -debug Enables debug logging. (Warning: Debug logs contain passwords)" = "-log @ALL"

- # " -options <file> Performs an install with defaults values from <file>"

- # " -options-record <file> Performs an interactive install, and saves a response file which can be used in silent mode"

- # " -options-template <file> Generates an empty response file which can be used in silent install mode"

ADDITIONAL SWITCH: USE IF UNABLE TO RESOLVE ISSUE WITH SLAPD STARTUP AS PART OF INSTALL

```
# ./setup -noverify -options-record imps.response_file_for_install.cfg (will prevent rollback; and create silent response file}
```

- Working Example(s):

- /r12-6-6/server/Provisioning/ProvisioningServer/setup -options-record /tmp/imps-install.properties -i console

- /r12-6-6/server/Provisioning/ProvisioningServer/setup -options-template /tmp/imps-install-template.properties -i console

- /r12-6-6/server/Provisioning/ProvisioningServer/setup -options /tmp/imps-install-template.properties -i silent

IAM IMPS Debug Process

- **IMPORTANT:** Use below switch IF an issue occurs with SLAPD startup as part of the install.
 - **setup -noverify -options-record imps.response_file_for_install.cfg**
 - This will allow the install to continue (with or without errors) and without a roll-back.
 - This will allow additional troubleshooting steps to be available.
 - IMPS will wait 600 seconds to try and communicate with the slapd service (im_ps), if it fails the install will roll back (at the 25% install mark).
 - NOTE: IMPS installer is able to communicate to IMPD; and create objects, but may have issue with IMPS service.
 - (Oct 3, 2015 10:10:27 PM), Install, com.ca.etrust.install.admin.ConfigureAdminServer, dbg, Waiting for im_ps to start up... 601
 - (Oct 3, 2015 10:10:27 PM), Install, com.ca.etrust.install.admin.ConfigureAdminServer, dbg, Checking if Server is Contactable
 - (Oct 3, 2015 10:10:27 PM), Install, com.ca.etrust.install.admin.ConfigureAdminServer, dbg, Creating InitialDirContext for Environment 'env'
 - (Oct 3, 2015 10:10:27 PM), Install, com.ca.etrust.install.admin.ConfigureAdminServer, dbg, Naming Exception in CreateContext: javax.naming.CommunicationException: localhost:20389 [Root exception is java.net.ConnectException: Connection refused]
 - (Oct 3, 2015 10:10:27 PM), Install, com.ca.etrust.install.admin.ConfigureAdminServer, dbg, Server: localhost:20389 SSL: false
 - (Oct 3, 2015 10:10:27 PM), Install, com.ca.etrust.install.admin.ConfigureAdminServer, dbg, DN: cn=etaserver,dc=eta Password: Password01
 - (Oct 3, 2015 10:10:27 PM), Install, com.ca.etrust.install.admin.ConfigureAdminServer, dbg, Exception in isServerContactable(). Reason: javax.naming.NamingException: javax.naming.CommunicationException: localhost:20389 [Root exception is java.net.ConnectException: Connection refused]
 - (Oct 3, 2015 10:10:27 PM), Install, java.lang.String, msg1, WARNING: Timeout occurred attempting to contact server...
- **./imps debug im_ps**
 - ./slapd -n im_ps -s 64 -f ..//data/im_ps.conf -h "ldap://localhost:20389 ldap://sandbox01:20389 ldaps://localhost:20390 ldaps://sandbox01:20390" -d 65535
- Ensure /etc/.profile_imps is updated with LD_LIBRARY PATH & R_SHLIB_LD_PATH
 - #####
 - #Add in /usr/lib:/usr/lib64:/lib64 paths to the below LIBRARY variables
 - # Set up Shared Library path
 - LD_LIBRARY_PATH=\$ETAHOME/lib:\$LD_LIBRARY_PATH:/opt/CA/SharedComponents/lib:/usr/lib:/usr/lib64:/lib64
 - R_SHLIB_LD_LIBRARY_PATH=\$ETAHOME/lib:/usr/lib:/usr/lib64:/lib64
 - #####
- Ensure IMPS HOME FOLDER .profile and/or .bash_profile sources this file
 - . /etc/.profile_imps
- STRACE Option
 - strace ./slapd -n im_ps -s 64 -f ..//data/im_ps.conf -h "ldap://localhost:20389 ldap://sandbox01:20389 ldaps://localhost:20390 ldaps://sandbox01:20390" -d 65535

IMPS SLdap Core Dump Issue on CentOS 7

- sh: line 1: 4558 Segmentation fault (core dumped) ./slapd -n im_ps -s 64 -f/data/im_ps.conf -h "ldap://localhost:20389 ldap://sandbox01:20389 ldaps://localhost:20390 ldaps://sandbox01:20390" -d 65535

IAM ECS Validation

- IMPS (ProvServ) ECS Validation / Install
- Validate no issues with eCS prior to installing IMPS
 - `/r12-6-6/server/Provisioning/ProvisioningServer/linux/ecs-installation/eCSinstall.sh /tmp/ecs`
 - Enterprise Common Services installation is complete.
- Uninstall Enterprise Common Services.
 - `/tmp/ecs/scripts/eCSuninstall.sh`
- Review Logs
 - Enterprise Common Services install session log in the file '`/tmp/eCSinstall.151005.083023.log`'

IMPS .bash_profile (debug process)

```
-bash-4.2$ cat .bash_profile
# Source IMPS Profile
./etc/.profile_imps
./opt/CA/Directory/.dxprofile

PATH=$PATH:/opt/CA/Directory/dxserver/bin
CALIB=$CALIB:/opt/CA/SharedComponents/CAPKI/CAPKI5/Linux/amd64/64/lib:/opt/CA/SharedComponents/CAPKI/CAPKI5/Linux/x86/lib:/opt/CA/webagent/CAPKI/Linux/amd64/64/lib:/opt/CA/siteminder/CAPKI/Linux/x86/32/lib
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/opt/CA/IdentityManager/ProvisioningServer/lib::/opt/CA/SharedComponents/lib:/opt/CA/IdentityManager/ProvisioningServer/Linux/x86/32/lib:/opt/CA/SharedComponents/CAPKI/CAPKI5/Linux/amd64/64/lib:/usr/lib:/usr/lib64
export PATH CALIB LD_LIBRARY_PATH

# add imps to etrdir group
# To ensure access to dxsearch util for imps
#ln -s /opt/CA/SharedComponents/CAPKI/CAPKI5/ CAPKI5

cd bin
strace -v ./slapd -n im_ps -s 64 -f ..data/im_ps.conf -h "ldap://localhost:20389 ldap://sandbox01:20389 ldaps://localhost:20390 ldaps://sandbox01:20390" -d 65535

#ldapsearch -h sandbox01:20391 -D eTDSAContainerName=DSAs,eTNamespaceName=CommonObjects,dc=im,dc=etadb -w Password01
#dxsearch -h sandbox01:20391 -D eTDSAContainerName=DSAs,eTNamespaceName=CommonObjects,dc=im,dc=etadb -w Password01
echo "Done"
```

Umlimit -a

```
-bash-4.2$ ulimit -a
core file size      (blocks, -c) unlimited
data seg size       (kbytes, -d) unlimited
scheduling priority (-e) 0
file size           (blocks, -f) unlimited
pending signals     (-i) 63422
max locked memory   (kbytes, -l) 64
max memory size     (kbytes, -m) unlimited
open files          (-n) 4096
pipe size           (512 bytes, -p) 8
POSIX message queues (bytes, -q) 819200
real-time priority   (-r) 0
stack size           (kbytes, -s) 8192
cpu time             (seconds, -t) unlimited
max user processes   (-u) 4096
virtual memory       (kbytes, -v) unlimited
file locks            (-x) unlimited
```

IAM Silent Install, Recorder, Templates

\$more ca-im-12.6.06-linux.bin (Select lines pulled from IM installer, to reset the TEMP folder (IATEMPDIR) to a location with more than 2 GB free space.)

for Bourne shell (sh), ksh, bash and zsh: \$ IATEMPDIR=/your/temp/space/directory; export IATEMPDIR"

for C shell (csh) and tcsh: \$ setenv IATEMPDIR /your/temp/space/directory"

EXAMPLE(S):

RECORD INSTALL (Manual w/o GUI)

```
/r12-6-6/server/ca-im-12.6.06-linux.bin -f $PROPERTIESFOLDER/silent-cluster.ini -i console
```

SILENT INSTALL

```
/r12-6-6/server/ca-im-12.6.06-linux.bin -f /iso/imwa-silent.properties -i silent
```

SILENT INSTALL

```
#$MEDIAFOLDER/ca/iam_suite/r12-6-6/server/ca-im-12.6.06-linux.bin -f $PROPERTIESFOLDER/imwa-jboss-cluster01.properties.updated -i silent
```

UNINSTALL IM PROCESS

#Need for uninstall process

```
PATH=$PATH:$JAVA_HOME/bin
```

```
echo "Ensure JBOSS for all IM, IG, IP components are not running; Ignore any error message related to missing init.d scripts for components that may not be installed yet or not running"
```

```
systemctl daemon-reload >/dev/null 2>&1
```

```
/etc/init.d/jboss-im01 stop >/dev/null 2>&1
```

```
echo "Kill any remaining process open by jboss user ID"
```

```
kill -9 `ps -ef | grep jboss | grep -v grep | awk '{print $2}'` > /dev/null 2>&1
```

```
echo "# Uninstall Prior IM r12.6.6 release"
```

```
/opt/CA/IdentityManager/install_config_info/im-uninstall/uninstall -i silent
```

```
echo "# Remove folder structure - left from any prior installs"
```

```
rm -rf $JBOSS01_IM_HOME/standalone/deployments/castyler5*
```

```
rm -rf $JBOSS01_IM_HOME/standalone/deployments/iam_im.ear*
```

```
echo "# Remove prior installation notes"
```

```
rm -rf /var/.com.zerog.registry.xml
```

```
rm -rf /var/.CA_IAM*
```

SiteMinder

- # Install SiteMinder Policy Server (minimal configurations)
- \$MEDIAFOLDER/ca/casso/ps-12.52-linux/ca-ps-12.52-linux.bin
-i silent -f \$PROPERTIESFOLDER/smbs-silent-minimal-config.properties

standalone-full-ha.xml variables

```
<resource-adapter-ref resource-adapter-name="${ejb.resource-adapter-name:hornetq-ra}"/>
<property name="initial_hosts">${jgroups.tcpping.initial_hosts}</property>
<param key="host" value="${jgroups.bind_addr:127.0.0.1}"/>
<subsystem xmlns="urn:jboss:domain:web:1.5" default-virtual-server="default-host" instance-id="${jboss.node.name}" native="false">
<wsdl-host>${jboss.bind.address:127.0.0.1}</wsdl-host>
<inet-address value="${jboss.bind.address.management:127.0.0.1}"/>
<inet-address value="${jboss.bind.address:127.0.0.1}"/>
<inet-address value="${jboss.bind.address.unsecure:127.0.0.1}"/>
<socket-binding-group default-interface="public" name="standard-sockets" port-offset="${jboss.socket.binding.port-offset:0}"/>
<socket-binding interface="management" name="management-native" port="${jboss.management.native.port:9999}"/>
<socket-binding interface="management" name="management-http" port="${jboss.management.http.port:9990}"/>
<socket-binding interface="management" name="management-https" port="${jboss.management.https.port:9443}"/>
<socket-binding multicast-address="${jboss.default.multicast.address:230.0.0.4}" multicast-port="45700" name="jgroups-mping" port="0"/>
<socket-binding multicast-address="${jboss.default.multicast.address:230.0.0.4}" multicast-port="45688" name="jgroups-udp" port="55200"/>
<socket-binding multicast-address="${jboss.messaging.group.address:231.7.7.7}" multicast-port="${jboss.messaging.group.port:9876}" name="messaging-group" port="0"/>
```

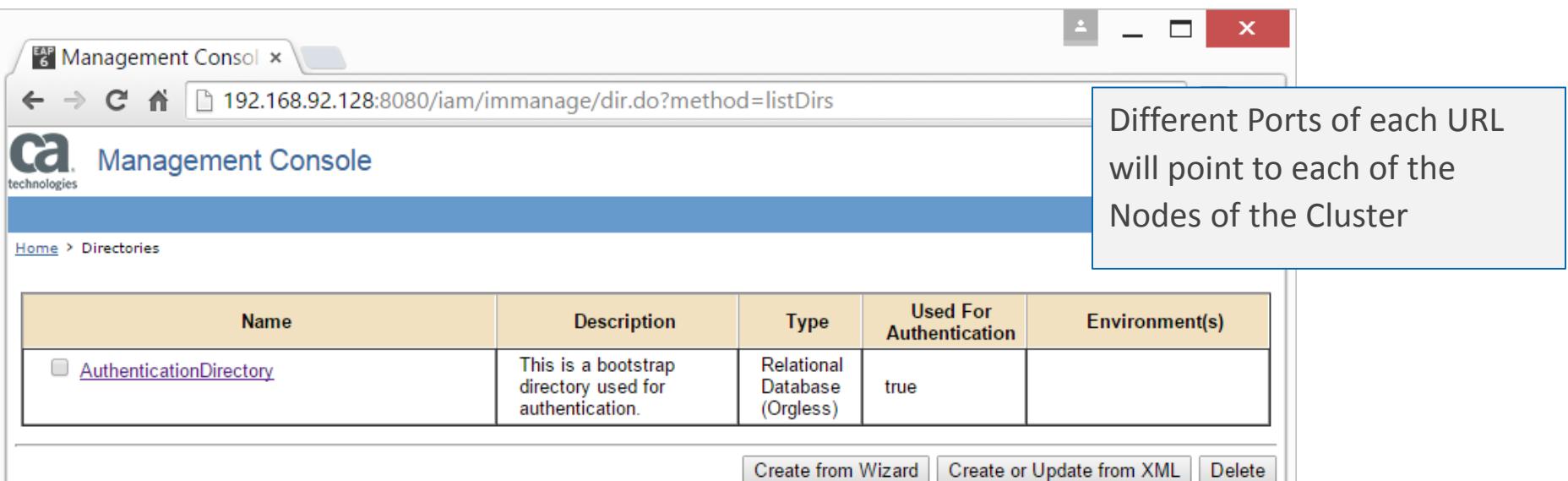
```
STANDALONE_CONFIGURATION="standalone-full-ha.xml"
BIND_ADDRESS="0.0.0.0"
NODE_NAME="iamnode1"
MULTI_CAST_ADDRESS="230.0.0.4"
JGROUPS_BIND_ADDRESS="192.168.92.128"
JGROUPS_INITIAL_HOSTS="casandbox01, casandbox02"
JAVA_HOME="/media/install/java/jdk1.7.0_71_x64"
IDM_OPTS="-Dnrete.j2ee.vendor=jboss"
```

```
SERVER_OPTS="$SERVER_OPTS -c $STANDALONE_CONFIGURATION -b $BIND_ADDRESS -Djgroups.tcpping.initial_hosts=$JGROUPS_INITIAL_HOSTS -Djboss.node.name=$NODE_NAME -Djgroups.bind_addr=$JGROUPS_BIND_ADDRESS $IDM_OPTS"
```

Validate IM JBOSS Cluster with Two Nodes: Test 01

1. Start up both JBOSS instances with their own standalone.sh scripts
2. Open 1st one of the JBOSS instances: <http://192.168.92.128:8080/iam/immanage>
3. Authenticate & export the AuthenticationDirectory to an XML file
4. Open the XML file and edit the following:
 - a. <ImsDirectory name="AuthenticationDirectory2"
 - b. <DirectorySearch maxrows="20000"
5. Save the file
6. Import the file "Create or Update from XML" with Common Object Name = AuthenticationDirectory2
7. Click Next and Finish
8. Open the other JBOSS instance <http://192.168.92.128:8180/iam/immanage> [use a different browser to avoid confusing the browser's session cookie]
9. Validate the "AuthenticationDirectory2" directory entry now exists.

Validate JBOSS Cluster: Firefox / Chrome Session Views



Different Ports of each URL will point to each of the Nodes of the Cluster

Management Console

192.168.92.128:8080/iam/immanage/dir.do?method=listDirs

Management Console

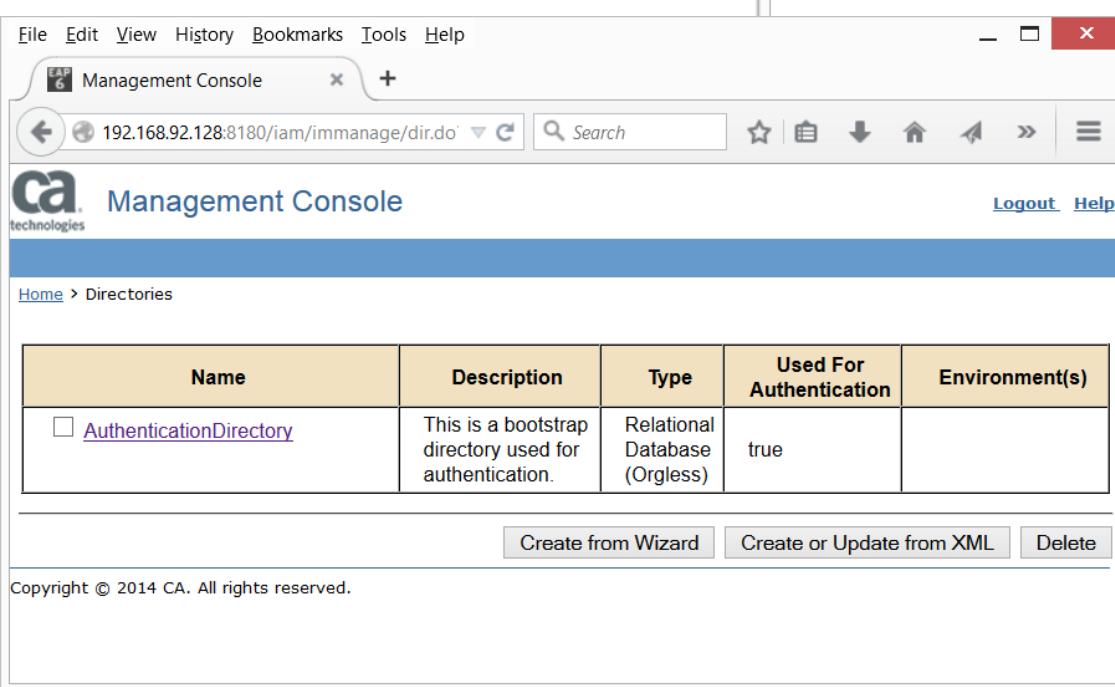
Home > Directories

Name	Description	Type	Used For Authentication	Environment(s)
<input type="checkbox"/> AuthenticationDirectory	This is a bootstrap directory used for authentication.	Relational Database (Orgless)	true	

Create from Wizard | Create or Update from XML | Delete

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```
File Edit Search View Tools Macros Configure Window Help
Document S 9 x AuthenticationDirectory.xml
AuthenticationDirectory.xml <?xml version="1.0" encoding="UTF-8"?>
<!-- Copyright 2002-2005 Computer Associates, Inc. All rights reserved. -->
<!-- Computer Associates, Inc. ("Computer Associates") claims copyright in this
<!-- which were first licensed on the date indicated in the foregoing -->
<!-- notice. Claim of copyright does not imply waiver of Computer Associates' or
<!-- its licensors' rights. -->
<!-- ***** Identity Manager Directory Information ***** -->
<!-- IMSDirectory contains a Provider element, ImsManagedObject elements, and op
<!-- IMSDirectory consists of the following attributes: -->
<!-- 1. name - required unique name for the directory -->
<!-- 2. well-known file - reference to a file that contains the list of required
<!-- 3. version - version of the directory xml file -->
<!-- 4. description - (optional) description for the Identity Manager logical di
<ImseDirectory name="AuthenticationDirectory2" description="This is a bootstrap di
<!-- ***** Attribute Validation ***** -->
<!-- OPTIONAL - ImsManagedObjectAttrValidation describes all the validation
<!-- ImsManagedObjectAttrValidation can contain ValidationRule and Valida
<!-- OPTIONAL - ValidationRule describes a validation rule. This element
<!-- ValidationRule consists of the following attributes: -->
<!-- 1. name - The unique name for the validation rule -->
<!-- 2. description - (optional) description for the validation rule -->
<!-- Java describes a class to use for the rule. -->
<!-- Java consists of the following attributes: -->
<!-- 1. class - The fully qualified classname that can be found in the cl
</ImseDirectory>
```



Different Ports of each URL will point to each of the Nodes of the Cluster

Management Console

192.168.92.128:8180/iam/immanage/dir.do'

Management Console

Logout Help

Home > Directories

Name	Description	Type	Used For Authentication	Environment(s)
<input type="checkbox"/> AuthenticationDirectory	This is a bootstrap directory used for authentication.	Relational Database (Orgless)	true	

Create from Wizard | Create or Update from XML | Delete

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Validate JBOSS Cluster: Create Copy of Directory via Chrome

The screenshot shows the CA Management Console interface for importing a directory. The URL is 192.168.92.128:8080/iam/immanage/dir.do?method=importDir&deleteobjs=. The page title is "Management Console". The main content area says "Choose a fully configured XML file to create or modify the user store or Provisioning Server. (For LDAP, you can instead use a wizard for step-by-step configuration. Click Directories above, then Create from Wizard.)" There is a "Choose File" button with the path "Authenticati...rectory.xml". Below it are "Back" and "Next >>" buttons.

The screenshot shows the CA Management Console interface for configuring a Relational Database (Orgless) directory. The URL is 192.168.92.128:8080/iam/immanage/importdirectory.do. The page title is "Management Console". The main content area says "Provide the following information for the Relational Database (Orgless) directory." A "Connection Object Name:" field contains "A". Below it are "Back" and "Next >>" buttons. At the bottom, there is a copyright notice: "Copyright © 2014 CA. All rights reserved."

The screenshot shows the CA Management Console interface after validating the connection. The URL is 192.168.92.128:8080/iam/immanage/importdirectory.do. The page title is "Management Console". The main content area says "The connection to the user directory was validated. A new directory will be created or existing one updated with the following settings:". Below is a table:

Property	Value
Type	Relational Database (Orgless)
Connection Object Name	A

At the bottom are "Back" and "Finish" buttons.

The screenshot shows the CA Management Console interface displaying the "Directory Configuration Output" log. The URL is 192.168.92.128:8080/iam/immanage/importdirectory.do. The page title is "Management Console". The log output shows the creation of the Identity Manager directory "AuthenticationDirectory2" and its configuration, followed by a validation message: "Loading Identity Manager directory "AuthenticationDirectory2" and validating provider configuration...". It concludes with "0 error(s), 0 warning(s)".

The screenshot shows the CA Management Console interface listing the available directories. The URL is 192.168.92.128:8080/iam/immanage/dir.do?method=listDirs. The page title is "Management Console". The table shows two entries:

Name	Description	Type	Used For Authentication	Environment(s)
AuthenticationDirectory2	This is a bootstrap directory used for authentication.	Relational Database (Orgless)	false	
AuthenticationDirectory	This is a bootstrap directory used for authentication.	Relational Database (Orgless)	true	

At the bottom are "Create from Wizard", "Create or Update from XML", and "Delete" buttons. A copyright notice "Copyright © 2014 CA. All rights reserved." is at the bottom.

Validate JBOSS Cluster: Confirm View in FireFox Session

File Edit View History Bookmarks Tools Help

EAP 6 Management Console × +

192.168.92.128:8180/iam/immanage/dir.do Search

Logout Help

Management Console

Home > Directories

Name	Description	Type	Used For Authentication	Environment(s)
<input type="checkbox"/> AuthenticationDirectory2	This is a bootstrap directory used for authentication.	Relational Database (Orgless)	false	
<input type="checkbox"/> AuthenticationDirectory	This is a bootstrap directory used for authentication.	Relational Database (Orgless)	true	

Create from Wizard Create or Update from XML Delete

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Port Check for JBOSS Cluster: netstat –an

Using Port Offset = 100 (for 2nd JBOSS Node on same server)



NIC/PORT	Description	Node	Bump/Value	WhereEdited
127.0.0.1:5456	<param key="port" value="5456"/>	NODE01		
127.0.0.1:15456	<param key="port" value="5456"/>	NODE02	10000	XML
127.0.0.1:3528	<socket-binding interface="unsecure" name="jacorb" port="3528"/>	NODE01		
127.0.0.1:3628	<socket-binding interface="unsecure" name="jacorb" port="3528"/>	NODE02	100	OFFSET
127.0.0.1:9990	<socket-binding interface="management" name="management-http" port="\${jboss.management.http.port:9990}"/>	NODE01		
127.0.0.1:10090	<socket-binding interface="management" name="management-http" port="\${jboss.management.http.port:9990}"/>	NODE02	100	OFFSET
127.0.0.1:9999	<socket-binding interface="management" name="management-native" port="\${jboss.management.native.port:9999}"/>	NODE01		
127.0.0.1:10099	<socket-binding interface="management" name="management-native" port="\${jboss.management.native.port:9999}"/>	NODE02	100	OFFSET
192.168.92.128:4447	<socket-binding name="remoting" port="4447"/>	NODE01		
192.168.92.128:4547	<socket-binding name="remoting" port="4447"/>	NODE02	100	OFFSET
192.168.92.128:5455	<socket-binding name="messaging-throughput" port="5455"/>	NODE01		
192.168.92.128:5555	<socket-binding name="messaging-throughput" port="5455"/>	NODE02	100	OFFSET
192.168.92.128:57600	<socket-binding name="jgroups-tcp-fd" port="57600"/>	NODE01		
192.168.92.128:57601	<socket-binding name="jgroups-tcp-fd" port="57600"/>	NODE01		
192.168.92.128:57602	<socket-binding name="jgroups-tcp-fd" port="57600"/>	NODE01		
192.168.92.128:57700	<socket-binding name="jgroups-tcp-fd" port="57600"/>	NODE02	100	OFFSET
192.168.92.128:57701	<socket-binding name="jgroups-tcp-fd" port="57600"/>	NODE02	100	OFFSET
192.168.92.128:57702	<socket-binding name="jgroups-tcp-fd" port="57600"/>	NODE02	100	OFFSET
192.168.92.128:7600	<socket-binding name="jgroups-tcp" port="7600"/>	NODE01		
192.168.92.128:7700	<socket-binding name="jgroups-tcp" port="7600"/>	NODE02	100	OFFSET
192.168.92.128:8009	<socket-binding name="ajp" port="8009"/>	NODE01		
192.168.92.128:8109	<socket-binding name="ajp" port="8009"/>	NODE02	100	OFFSET
192.168.92.128:8080	<socket-binding name="http" port="8080"/>	NODE01		
192.168.92.128:8180	<socket-binding name="http" port="8080"/>	NODE02	100	OFFSET

Validate JBOSS Cluster: IM Loggers

```
INFO [org.jboss.modcluster] (ServerService Thread Pool -- 61) MODCLUSTER000001: Initializing mod_cluster ${project.version}
```

```
INFO [org.hornetq.core.server] (HQ119000: Activation for server HornetQServerImpl::serverUUID=null) HQ221109: HornetQ Backup Server version 2.3.12.Final (2.3.12, 123) [null] started, waiting live to fail before it gets active
```

```
WARN [org.hornetq.core.client] (Thread-61 (HornetQ-client-global-threads-62281910)) HQ212037: Connection failure has been detected: HQ119015: The connection was disconnected because of server shutdown [code=DISCONNECTED]
```

```
WARN [org.jgroups.protocols.pbcast.GMS] (ServerService Thread Pool -- 61) JOIN(nodeA/live) sent to nodeB/live timed out (after 3000 ms), on try 1
```

```
WARN [org.jgroups.protocols.pbcast.NAKACK] (Incoming-15,shared=tcp) JGRP000011: nodeA/live: dropped message 2 from non-member nodeB/live (view=[nodeA/live|0] [nodeA/live])
```

Validate JBOSS Cluster: Logging.jsp

Set Logger

Category: ALL

Current Loggers

Logger Name	Level	Category
ca.identitymanager.FeederTaskNotificationListener	INFO	ERROR
com	WARN	INFO
com.ca.crypto.impl.EncryptionUtil	WARN	(inherit)
com.ca.integration.normalization.common	WARN	WARN
com.ca.integration.normalization.common.CustomPropertiesHandler	WARN	(inherit)
com.ca.integration.normalization.common.FieldMappingHandler	WARN	(inherit)
com.ca.integration.normalization.common.Helper	WARN	(inherit)
com.ca.integration.normalization.common.SwaggerConfig	WARN	(inherit)
com.ca.integration.normalization.common.error.GenericExceptionMapper	WARN	(inherit)
com.ca.integration.normalization.common.error.NormalizedExceptionMapper	WARN	(inherit)
com.ca.integration.normalization.configuration	WARN	WARN
com.ca.integration.normalization.configuration.MailboxConfiguration	WARN	(inherit)
com.ca.integration.normalization.configuration.MailboxRulesConfiguration	WARN	(inherit)
com.ca.integration.normalization.filters.AuthFilter	WARN	(inherit)
com.ca.integration.normalization.mdr.ca.nsd.NSDRequestHandler	WARN	(inherit)
com.ca.integration.normalization.resources	WARN	WARN
com.ca.integration.normalization.resources.NIMAApplication	WARN	(inherit)
com.ca.integration.normalization.resources.im	WARN	WARN
com.ca.integration.normalization.resources.im.IncidentManagementFactory	WARN	(inherit)
com.netegrity.crypto.PBESHA1RC2CBCPKCS12PBE5128Handler	WARN	(inherit)
com.netegrity.idmutils.Localizer	WARN	(inherit)
com.netegrity.ims.aok.AOKConnectorListener	WARN	(inherit)

Set Logger

Category: ALL Set

Current Loggers

Logger Name	Level	Category
ca.identitymanager.FeederTaskNotificationListener	INFO	ERROR
com	WARN	INFO
com.ca.crypto.impl.EncryptionUtil	WARN	(inherit)
com.ca.integration.normalization.common	WARN	WARN
com.ca.integration.normalization.common.CustomPropertiesHandler	WARN	(inherit)
com.ca.integration.normalization.common.FieldMappingHandler	WARN	(inherit)
com.ca.integration.normalization.common.Helper	WARN	(inherit)
com.ca.integration.normalization.common.SwaggerConfig	WARN	(inherit)
com.ca.integration.normalization.common.error.GenericExceptionMapper	WARN	(inherit)
com.ca.integration.normalization.common.error.NormalizedExceptionMapper	WARN	(inherit)
com.ca.integration.normalization.configuration	WARN	WARN
com.ca.integration.normalization.configuration.MailboxConfiguration	WARN	(inherit)
com.ca.integration.normalization.configuration.MailboxRulesConfiguration	WARN	(inherit)
com.ca.integration.normalization.filters.AuthFilter	WARN	(inherit)
com.ca.integration.normalization.mdr.ca.nsd.NSDRequestHandler	WARN	(inherit)

Validate JBOSS Cluster: Loggers = Debug

```
org.jboss.modcluster = DEBUG  
org.hornetq.core=DEBUG  
org.jgroups=DEBUG
```

Logger	WARN	WARN ▾
net	WARN	WARN ▾
org	WARN	WARN ▾
org.apache	WARN	WARN ▾
org.hornetq.core	DEBUG	DEBUG ▾
org.jboss.modcluster	DEBUG	DEBUG ▾
org.jgroups	DEBUG	DEBUG ▾
org.quartz	WARN	WARN ▾

Update

Logger	WARN	WARN ▾
org.apache	WARN	WARN ▾
org.hornetq.core	DEBUG	DEBUG ▾
org.jboss.modcluster	DEBUG	DEBUG ▾
org.jgroups	DEBUG	DEBUG ▾
org.quartz	WARN	WARN ▾

Update

Validate JBOSS Cluster: Monitoring Debug Logs

```
23:41:53,668 DEBUG [org.hornetq.core.client] (default-threads - 1) Calling close on session ClientSessionImpl [name=fa831e02-0746-11e5-9f34-9110fa049e6e, username=null, closed=false, factory = ClientSessionFactoryImpl [serverLocator=ServerLocatorImpl [initialConnectors=[TransportConfiguration(name=fa7e89f8-0746-11e5-9f34-9110fa049e6e, factory=org.hornetq-core-remoting-impl-invm-InVMConnectorFactory) ?server-id=0], discoveryGroupConfiguration=null], connectorConfig=TransportConfiguration(name=fa82cfe0-0746-11e5-9f34-9110fa049e6e, factory=org.hornetq-core-remoting-impl-invm-InVMConnectorFactory) ?server-id=0, backupConfig=null], metaData=(resource-adapter=inbound,jms-session=,)])@58c16f4e
23:41:53,668 DEBUG [org.hornetq.core.client] (default-threads - 1) calling cleanup on ClientSessionImpl [name=fa831e02-0746-11e5-9f34-9110fa049e6e, username=null, closed=false, factory = ClientSessionFactoryImpl [serverLocator=ServerLocatorImpl [initialConnectors=[TransportConfiguration(name=fa7e89f8-0746-11e5-9f34-9110fa049e6e, factory=org.hornetq-core-remoting-impl-invm-InVMConnectorFactory) ?server-id=0, discoveryGroupConfiguration=null], connectorConfig=TransportConfiguration(name=fa82cfe0-0746-11e5-9f34-9110fa049e6e, factory=org.hornetq-core-remoting-impl-invm-InVMConnectorFactory) ?server-id=0, backupConfig=null], metaData=(resource-adapter=inbound,jms-session=,)])@58c16f4e
23:41:53,669 DEBUG [org.hornetq.core.client] (default-threads - 1) Trying to connect with connector = org.hornetq.core.remoting.impl.invm.InVMConnectorFactory@58322e9c, parameters = {server-id=0} connector = org.hornetq.core.remoting.impl.invm.InVMConnector@46923100
23:41:53,669 DEBUG [org.hornetq.core.client] (default-threads - 1) Reconnection successful
23:41:53,669 DEBUG [org.hornetq.core.server] (Thread-44 (HornetQ-remoting-threads-HornetQServerImpl::serverUUID=271a9bd6-0719-11e5-8cf4-816ec4db8ccc-401846059-2138127445)) Sending exception to client: HornetQException[errorType=QUEUE_DOES_NOT_EXIST message=HQ119017: Queue jms.queue.wpEventQueue does not exist]
at org.hornetq.core.server.impl.ServerSessionImpl.createConsumer(ServerSessionImpl.java:357) [hornetq-server-2.3.12.Final-redhat-1.jar:2.3.12.Final-redhat-1]
at org.hornetq.core.server.impl.ServerSessionImpl.createConsumer(ServerSessionImpl.java:344) [hornetq-server-2.3.12.Final-redhat-1.jar:2.3.12.Final-redhat-1]
at org.hornetq.core.protocol.core.ServerSessionPacketHandler.handlePacket(ServerSessionPacketHandler.java:220) [hornetq-server-2.3.12.Final-redhat-1.jar:2.3.12.Final-redhat-1]
at org.hornetq.core.protocol.core.impl.ChannelImpl.handlePacket(ChannelImpl.java:631) [hornetq-core-client-2.3.12.Final-redhat-1.jar:2.3.12.Final-redhat-1]
at org.hornetq.core.protocol.core.impl.RemotingConnectionImpl.doBufferReceived(RemotingConnectionImpl.java:547) [hornetq-core-client-2.3.12.Final-redhat-1.jar:2.3.12.Final-redhat-1]
at org.hornetq.core.protocol.core.impl.RemotingConnectionImpl.bufferReceived(RemotingConnectionImpl.java:523) [hornetq-core-client-2.3.12.Final-redhat-1.jar:2.3.12.Final-redhat-1]
at org.hornetq.core.remoting.server.impl.RemotingServiceImpl$DelegatingBufferHandler.bufferReceived(RemotingServiceImpl.java:564) [hornetq-server-2.3.12.Final-redhat-1.jar:2.3.12.Final-redhat-1]
at org.hornetq.core.remoting.impl.invm.InVMSession$1.run(InVMSession.java:160) [hornetq-server-2.3.12.Final-redhat-1.jar:2.3.12.Final-redhat-1]
at org.hornetq.utils.OrderedExecutorFactory$OrderedExecutor$1.run(OrderedExecutorFactory.java:107) [hornetq-core-client-2.3.12.Final-redhat-1.jar:2.3.12.Final-redhat-1]
at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1145) [rt.jar:1.7.0_71]
at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:615) [rt.jar:1.7.0_71]
at java.lang.Thread.run(Thread.java:745) [rt.jar:1.7.0_71]

23:41:53,670 DEBUG [org.hornetq.core.client] (default-threads - 1) Calling close on session ClientSessionImpl [name=fa836c25-0746-11e5-9f34-9110fa049e6e, username=null, closed=false, factory = ClientSessionFactoryImpl [serverLocator=ServerLocatorImpl [initialConnectors=[TransportConfiguration(name=fa7e89f8-0746-11e5-9f34-9110fa049e6e, factory=org.hornetq-core-remoting-impl-invm-InVMConnectorFactory) ?server-id=0, discoveryGroupConfiguration=null], connectorConfig=TransportConfiguration(name=fa831e03-0746-11e5-9f34-9110fa049e6e, factory=org.hornetq-core-remoting-impl-invm-InVMConnectorFactory) ?server-id=0, backupConfig=null], metaData=(resource-adapter=inbound,jms-session=,)])@27cf1b32
23:41:53,671 DEBUG [org.hornetq.core.client] (default-threads - 1) calling cleanup on ClientSessionImpl [name=fa836c25-0746-11e5-9f34-9110fa049e6e, username=null, closed=false, factory = ClientSessionFactoryImpl [serverLocator=ServerLocatorImpl [initialConnectors=[TransportConfiguration(name=fa7e89f8-0746-11e5-9f34-9110fa049e6e, factory=org.hornetq-core-remoting-impl-invm-InVMConnectorFactory) ?server-id=0, discoveryGroupConfiguration=null], connectorConfig=TransportConfiguration(name=fa831e03-0746-11e5-9f34-9110fa049e6e, factory=org.hornetq-core-remoting-impl-invm-InVMConnectorFactory) ?server-id=0, backupConfig=null], metaData=(resource-adapter=inbound,jms-session=,)])@27cf1b32
```

jms.queue.wpEventQueue will only exist when an IME is created.

Clustering Loggers to Look For in JBOSS Server log

```
21:15:51,037 INFO [org.jboss.as.clustering.jgroups] (ServerService Thread Pool -- 41) JBAS010260: Activating JGroups subsystem.
21:15:52,216 INFO [org.jboss.modcluster] (ServerService Thread Pool -- 60) MODCLUSTER000001: Initializing mod_cluster ${project.version}
21:15:52,323 INFO [org.jboss.modcluster] (ServerService Thread Pool -- 60) MODCLUSTER000032: Listening to proxy advertisements on /224.0.1.105:23364
21:15:52,849 INFO [org.jboss.as.jacorb] (MSC service thread 1-1) JBAS016330: CORBA ORB Service started
21:15:53,581 INFO [org.jboss.as.jacorb] (MSC service thread 1-1) JBAS016328: CORBA Naming Service started
21:15:53,589 INFO [org.hornetq.core.server] (ServerService Thread Pool -- 60) HQ221000: backup server is starting with configuration HornetQ Configuration
(clustered=true,backup=true,sharedStore=false,journalDirectory=/opt/CA/jboss/jboss-eap-6.2/standalone/data/backup-hornetq/journal,bindingsDirectory=/opt/CA/jboss/jboss-eap-
6.2/standalone/data/backup-hornetq/bindings,largeMessagesDirectory=/opt/CA/jboss/jboss-eap-6.2/standalone/data/backup-hornetq/large-messages,pagingDirectory=/opt/CA/jboss/jboss-
eap-6.2/standalone/data/backup-hornetq/paging)
21:15:53,741 INFO [org.hornetq.core.server] (ServerService Thread Pool -- 60) HQ221000: live server is starting with configuration HornetQ Configuration
(clustered=true,backup=false,sharedStore=false,journalDirectory=/opt/CA/jboss/jboss-eap-6.2/standalone/data/live-hornetq/journal,bindingsDirectory=/opt/CA/jboss/jboss-eap-
6.2/standalone/data/live-hornetq/bindings,largeMessagesDirectory=/opt/CA/jboss/jboss-eap-6.2/standalone/data/live-hornetq/large-messages,pagingDirectory=/opt/CA/jboss/jboss-eap-
6.2/standalone/data/live-hornetq/paging)
21:15:53,786 INFO [stdout] (ServerService Thread Pool -- 60) -----
21:15:53,787 INFO [stdout] (ServerService Thread Pool -- 60) GMS: address=nodeA/live, cluster=live, physical address=192.168.92.128:7600
21:15:53,787 INFO [stdout] (ServerService Thread Pool -- 60) -----
21:15:53,849 INFO [stdout] (HQ119000: Activation for server HornetQServerImpl::serverUUID=null)
21:15:53,850 INFO [stdout] (HQ119000: Activation for server HornetQServerImpl::serverUUID=null) -----
21:15:53,850 INFO [stdout] (HQ119000: Activation for server HornetQServerImpl::serverUUID=null) GMS: address=nodeA/node2_live_to_node1_backup, cluster=node2_live_to_node1_backup,
physical address=192.168.92.128:7600
21:15:53,850 INFO [stdout] (HQ119000: Activation for server HornetQServerImpl::serverUUID=null) -----
21:15:53,876 INFO [org.jboss.as.remoting] (MSC service thread 1-1) JBAS017100: Listening on 127.0.0.1:9999
21:15:53,886 INFO [org.jboss.as.remoting] (MSC service thread 1-1) JBAS017100: Listening on 192.168.92.128:4447
```

Troubleshoot: IM EAR does not Start in JBOSS

If JBOSS is unable to start or deploy the IM EAR, then force a "new auto deployment"

1. cd \$JBOSS_HOME/standalone/deployment
2. Remove any *.deployed files.
3. touch these two (2) files
 - a. touch castylesr5.1.1.ear.dodeploy
 - b. touch iam_im.ear.dodeploy
4. Restart JBOSS, e.g. standalone.sh

*** This scenario may occur if JBOSS was not cleanly shutdown, e.g. JBOSS experienced a memory lock and an admin used a “kill -9 processID”

Guidelines Note: IDM_OPTS versus JAVA_OPTS

- Update any IM configuration options in standalone.sh under the label, IDM_OPTS
- Update any Java configuration options in standalone.conf under the label, JAVA_OPTS
- This methodology will help to avoid precedence and overwrite issues.
 - JAVA_OPTS created in standalone.sh will void any entries in standalone.conf.
- If adding any JAVA_OPTS, ensure that JAVA_OPTS="\$JAVA_OPTS -DWHATEVER" has the prior JAVA_OPTS variable declared.

Guideline Notes: IDM_OPTS

- # 2015-06-01 AB - Below setting used to avoid jboss 404 error for web requests while server is in process of starting
 - IDM_OPTS="\$IDM_OPTS -Dorg.apache.catalina.connector.WAIT_FOR_BEFORE_START=/castylesr5.1.1,/idmmanage,/iam/immanage,/idm,/iam/im"

Guideline Notes: JAVA_OPTS

```
# Specify options to pass to the Java VM.
```

```
#
```

```
if [ "x$JAVA_OPTS" = "x" ]; then
```

```
    JAVA_OPTS="-Xms1303m -Xmx2048m -XX:MaxPermSize=512m -Djava.net.preferIPv4Stack=true"
```

```
    JAVA_OPTS="$JAVA_OPTS -Djboss.modules.system.pkgs=$JBOSS_MODULES_SYSTEM_PKGS -Djava.awt.headless=true"
```

```
    JAVA_OPTS="$JAVA_OPTS -Djava.security.egd=file:/dev/.urandom"
```

```
# Debugging for performance:
```

```
    JAVA_OPTS="$JAVA_OPTS -d64"
```

```
    JAVA_OPTS="$JAVA_OPTS -Dsun.rmi.dgc.client.gcInterval=3600000 -Dsun.rmi.dgc.server.gcInterval=3600000 -XX:+AggressiveOpts -XX:+AggressiveHeap -XX:+UseParallelGC"
```

```
    JAVA_OPTS="$JAVA_OPTS -XX:+HeapDumpOnOutOfMemoryError"
```

```
#JAVA_OPTS="$JAVA_OPTS -verbose:gc -Xloggc:gc.log -XX:+PrintGCDetails -XX:+PrintGCTimeStamps"
```

Bump Memory to 8192

Use EGD Setting

Optional: GC Configurations

```
JAVA_OPTS: -Xms64m -Xmx512m -XX:MaxPermSize=256m -Djava.net.preferIPv4Stack=true -Dorg.jboss.resolver.warning=true -Dsun.rmi.dgc.client.gcInterval=3600000 -Dsun.rmi.dgc.server.gcInterval=3600000 -Djboss.modules.system.pkgs=org.jboss.byteman -Djava.awt.headless=true
```

CPU Cycle – No –d64 or GC debugging



root@casandbox01:/opt/CA/jboss/jboss-eap-6.2-node02/bi

```
top - 21:42:24 up 1 day, 6:59, 3 users, load average: 0.08, 0.05, 0.19
Tasks: 416 total, 1 running, 415 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.0 us, 0.9 sy, 0.0 ni, 99.0 id, 0.0 wa, 0.0 hi, 0.1 si, 0.0 st
KiB Mem : 7997532 total, 1177664 free, 3079688 used, 3740180 buff/cache
KiB Swap: 4145148 total, 4135188 free, 9960 used. 4162672 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
116954	root	20	0	5239276	1.158g	26104	S	3.6	15.2	1:44.55	java
115593	root	20	0	5239932	1.175g	26132	S	3.0	15.4	1:54.87	java
3119	oracle	20	0	967548	27748	25740	S	0.3	0.3	0:14.49	oracle
3222	oracle	20	0	967548	15252	13264	S	0.3	0.2	2:51.14	oracle
116083	root	20	0	130288	2084	1260	R	0.3	0.0	0:04.62	top
1	root	20	0	54232	3848	2136	S	0.0	0.0	0:02.42	systemd
2	root	20	0	0	0	0	S	0.0	0.0	0:00.04	kthreadd
3	root	20	0	0	0	0	S	0.0	0.0	0:12.56	ksoftirqd/0
5	root	0	-20	0	0	0	S	0.0	0.0	0:00.00	kworker/0:0H
7	root	rt	0	0	0	0	S	0.0	0.0	0:00.95	migration/0
8	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rcu_bh
9	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rcuob/0
10	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rcuob/1
11	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rcuob/2
12	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rcuob/3
13	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rcuob/4

CPU Cycle with -d64 and GC debugging



```
root@casandbox01:/opt/CA/jboss/jboss-eap-6.2/bin
top - 22:45:19 up 1 day, 8:02, 3 users, load average: 0.10, 0.34, 0.29
Tasks: 427 total, 1 running, 426 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.1 us, 0.9 sy, 0.0 ni, 98.9 id, 0.1 wa, 0.0 hi, 0.0 si, 0.0 st
KiB Mem : 7997532 total, 579080 free, 3670812 used, 3747640 buff/cache
KiB Swap: 4145148 total, 4135224 free, 9924 used. 3570760 avail Mem
```

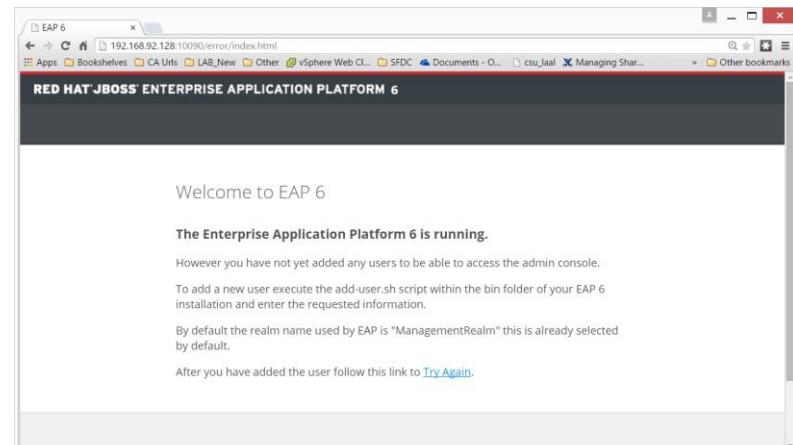
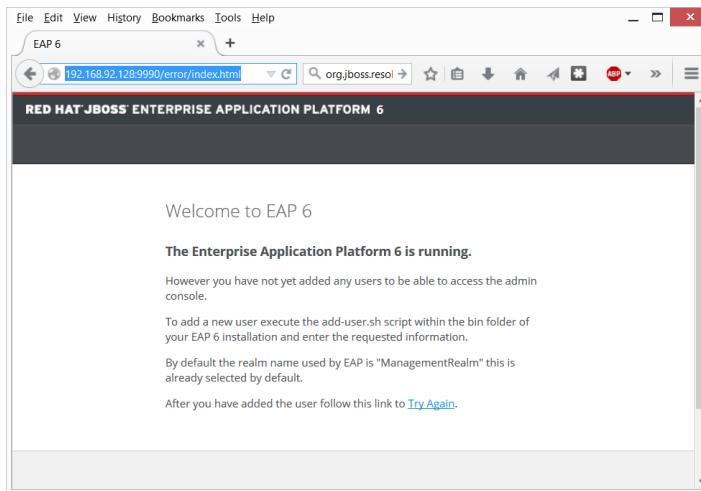
PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
1507	root	20	0	5235900	1.427g	26068	S	4.0	18.7	1:09.97	java
1191	root	20	0	5244084	1.431g	26084	S	3.0	18.8	1:10.84	java
1977	root	20	0	130288	2084	1260	R	0.3	0.0	0:01.15	top
1	root	20	0	54232	3848	2136	S	0.0	0.0	0:02.46	systemd
2	root	20	0	0	0	0	S	0.0	0.0	0:00.04	kthreadd
3	root	20	0	0	0	0	S	0.0	0.0	0:12.60	ksoftirqd/0
5	root	0	-20	0	0	0	S	0.0	0.0	0:00.00	kworker/0:0H
7	root	rt	0	0	0	0	S	0.0	0.0	0:00.95	migration/0
8	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rcu_bh
9	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rcuob/0
10	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rcuob/1
11	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rcuob/2
12	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rcuob/3
13	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rcuob/4
14	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rcuob/5
15	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rcuob/6

JBOSS Scanner – Standalone Mode

- IM r12.6sp5 default configuration already has this function disabled for auto-scanning every 5000 milliseconds
 - Will ONLY scan once upon STARTUP
 - `<deployment-scanner deployment-timeout="600" path="deployments" relative-to="jboss.server.base.dir" scan-interval="0"/>`

JBOSS AS Management Console

- Note: Admin Console is defaulted to localhost NIC (127.0.0.1)
- Update standalone.sh Script
 - IDM_OPTS="\$IDM_OPTS -Djboss.bind.address.management=\$BIND_ADDRESS"
- Add ports to OS firewall
 - [root@casandbox01 bin]# firewall-cmd --zone=public --permanent --add-port=9990/tcp
 - [root@casandbox01 bin]# firewall-cmd --zone=public --permanent --add-port=10090/tcp
 - [root@casandbox01 bin]# firewall-cmd --reload
- <http://192.168.92.128:9090/console>
- <http://192.168.92.128:9190/console>
- /opt/CA/jboss/jboss-eap-6.2/add-user.sh admin Password01! (on both nodes)





RED HAT JBOSS ENTERPRISE APPLICATION PLATFORM 6.2.0.GA

Messages: 0 admin

Profile

Runtime

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Server

Overview

Manage Deployments

Status

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JMS Destinations

JNDI View

Transaction Logs

Transactions

SERVER

EXTENSIONS

Server: casandbox01

Server configuration status. In some cases the configuration needs to be reloaded in order to become effective.

Configuration

Code Name: Janus

Version: 6.2.0.GA

Server State: running

Status

The server configuration is up to date!



RED HAT JBOSS ENTERPRISE APPLICATION PLATFORM 6.2.0.GA

Messages: 0 admin

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SERVER

EXTENSIONS

Server: casandbox01

Server configuration status. In some cases the configuration needs to be reloaded in order to become effective.

Configuration

Code Name: Janus

Version: 6.2.0.GA

Server State: running

[Status](#)

Messages: 0

RED HAT JBOSS ENTERPRISE APPLICATION PLATFORM 6.2.0.GA

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Webservices

ENVIRONMENT

jboss.bind.address.management	casandbox02
jboss.home.dir	/opt/CA/jboss/jboss-eap-6.2-node02
jboss.host.name	casandbox01
jboss.modules.dir	/opt/CA/jboss/jboss-eap-6.2-node02/modules
jboss.modules.system.pkgs	org.jboss.byteman
jboss.node.name	nodeB
jboss.qualified.host.name	casandbox01
jboss.server.base.dir	/opt/CA/jboss/jboss-eap-6.2-node02/sta...

<<

<

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>

>>

Attributes

JBoss Management x +

192.168.92.128:9990/console/App.html#enviro ABP

org.jboss.resolv

Messages: 0 admin

RED HAT JBOSS ENTERPRISE APPLICATION PLATFORM 6.2.0.GA

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ENVIRONMENT

Environment Properties

A map of names and values of all system properties.

Key	Value
jboss.bind.address.management	casandbox01
jboss.home.dir	/opt/CA/jboss/jboss-eap-6.2
jboss.host.name	casandbox01
jboss.modules.dir	/opt/CA/jboss/jboss-eap-6.2/modules
jboss.modules.system.pkgs	org.jboss.byteman
jboss.node.name	nodeA
jboss.qualified.host.name	casandbox01
jboss.server.base.dir	/opt/CA/jboss/jboss-eap-6.2/standalone

<< < 49-56 of 103 > >>

one-full-ha.xml * standalone.sh *

Structure Minor Rules Copy Expand Collapse Select Files Refresh Swap Stop Filters: **

I:\temp\jboss-eap-6.2-before\bin

	Size	Modified
	10,468,350	7/10/2015 10:00:57 AM
	10,794	7/10/2015 1:14:38 PM
	126,419	7/10/2015 10:00:58 AM
	117,549	7/10/2015 10:00:58 AM
	34,899	7/10/2015 1:16:33 PM

Name

- bin
 - standalone.sh
- standalone
 - configuration
 - standalone-full-ha.xml

1W7\me

<->

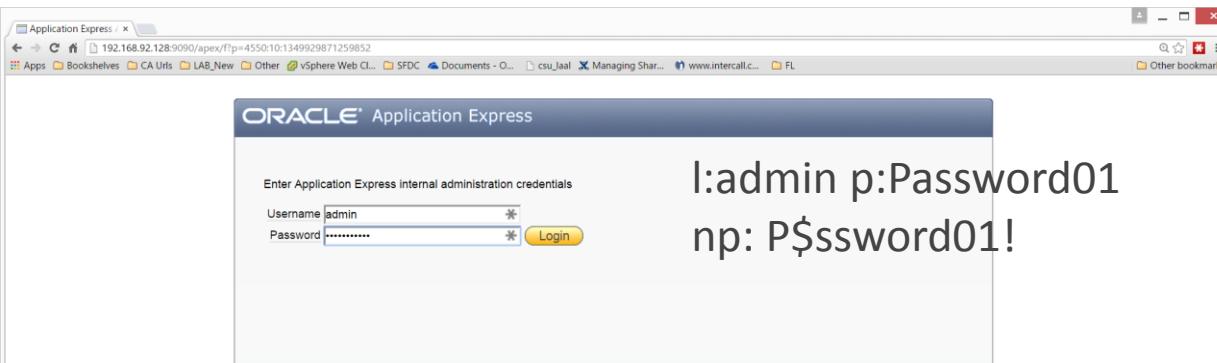
\temp\jboss-eap-6.2 <-> I:\temp\jboss-eap-6.2-before

Comparison completed in 6.05 seconds

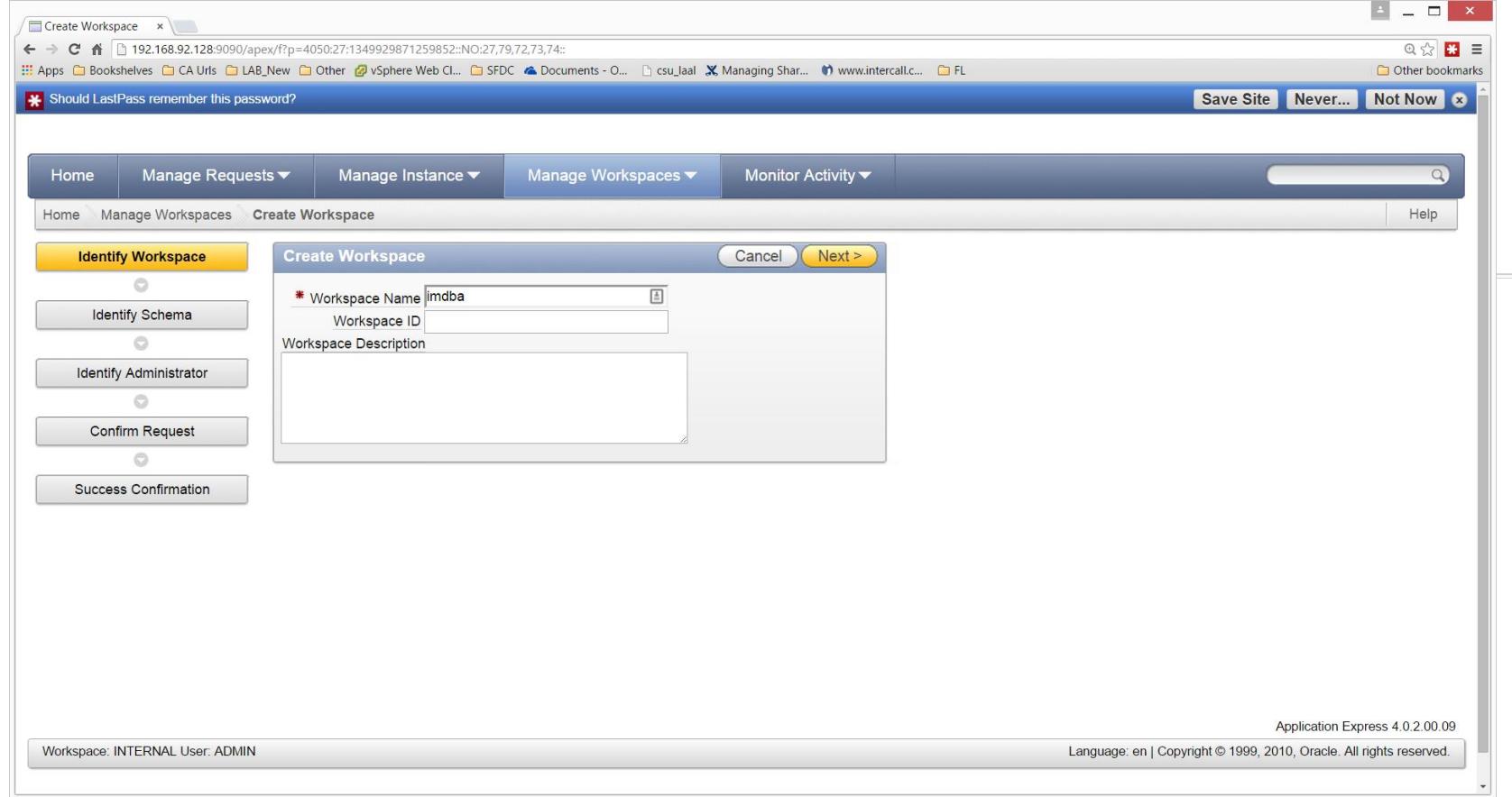
Guideline: Use rsync process to move files between Unix/Linux servers to maintain permissions.

```
jboss@y0319t1600:/opt/CA/media$ cd ..  
jboss@y0319t1600:/opt/CA$ rsync -chavz media jboss@y0319t1601:/opt/CA/  
sending incremental file list  
media/  
media/im-installer.properties  
media/standalone-full-ha.xml-Cluster_JBOSS  
media/standalone.conf  
media/step01_install_jboss_and_jdk.sh  
media/step02_install_ca_idm.sh  
media/uninstall_iam.sh  
media/ca/  
media/ca/CAv01140740E.taz
```

Guideline: Oracle Apex



l:admin p:Password01
np: P\$ssword01!



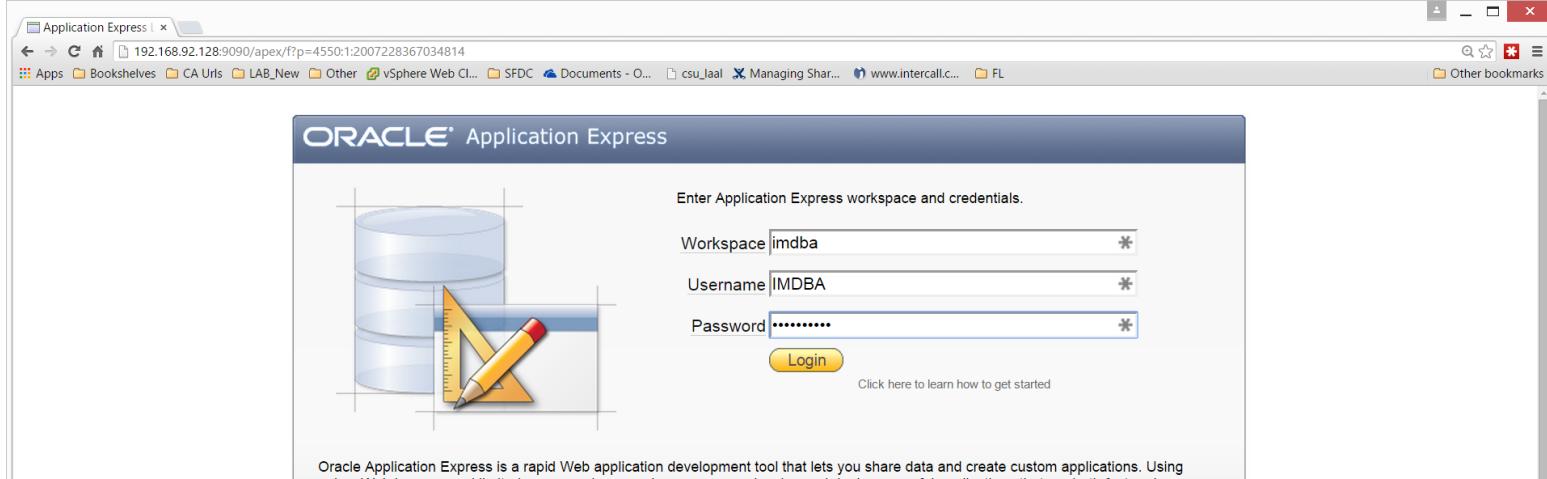
The screenshot shows the Oracle Application Express interface for creating a new workspace. The URL in the address bar is `192.168.92.128:9090/apex/f?p=4050:27:1349929871259852::NO:27,79,72,73,74::`. The main window displays the "Create Workspace" page with the following details:

- Create Workspace** dialog box:
 - Workspace Name:** jmdba
 - Workspace ID:** (empty)
 - Workspace Description:** (empty)
- Identify Workspace** tab is selected.
- Identify Schema**, **Identify Administrator**, **Confirm Request**, and **Success Confirmation** tabs are visible but not selected.
- Cancel** and **Next >** buttons are at the top right of the dialog.

At the bottom of the interface, there is a footer with the text: "Application Express 4.0.2.00.09", "Language: en | Copyright © 1999, 2010, Oracle. All rights reserved.", "Workspace: INTERNAL User: ADMIN", and "© 2014 CA. All rights reserved.".

Apex

imdba



The screenshot shows the Oracle Application Express Object Browser. The top navigation bar includes links for Home, Application Builder, SQL Workshop (which is selected), Team Development, Administration, and a schema dropdown set to "IMDBA". The main area displays a table named "IM_AUTH_USER". The table has columns: EDIT, USER_NAME, PASSWORD, DISABLED, and ID. One row is visible, showing "idmembedded" in the USER_NAME column, a complex password hash in the PASSWORD column, and values 0 and 0 in the DISABLED and ID columns respectively. A message at the bottom of the table area says "row(s) 1 - 1 of 1".

Dba accounts created with Oracle sql command line via shell script

Only Table & Data created after IM install ; but before running IM via standalone.sh

Apex imdba: After IM is started for 1st time via standalone.sh

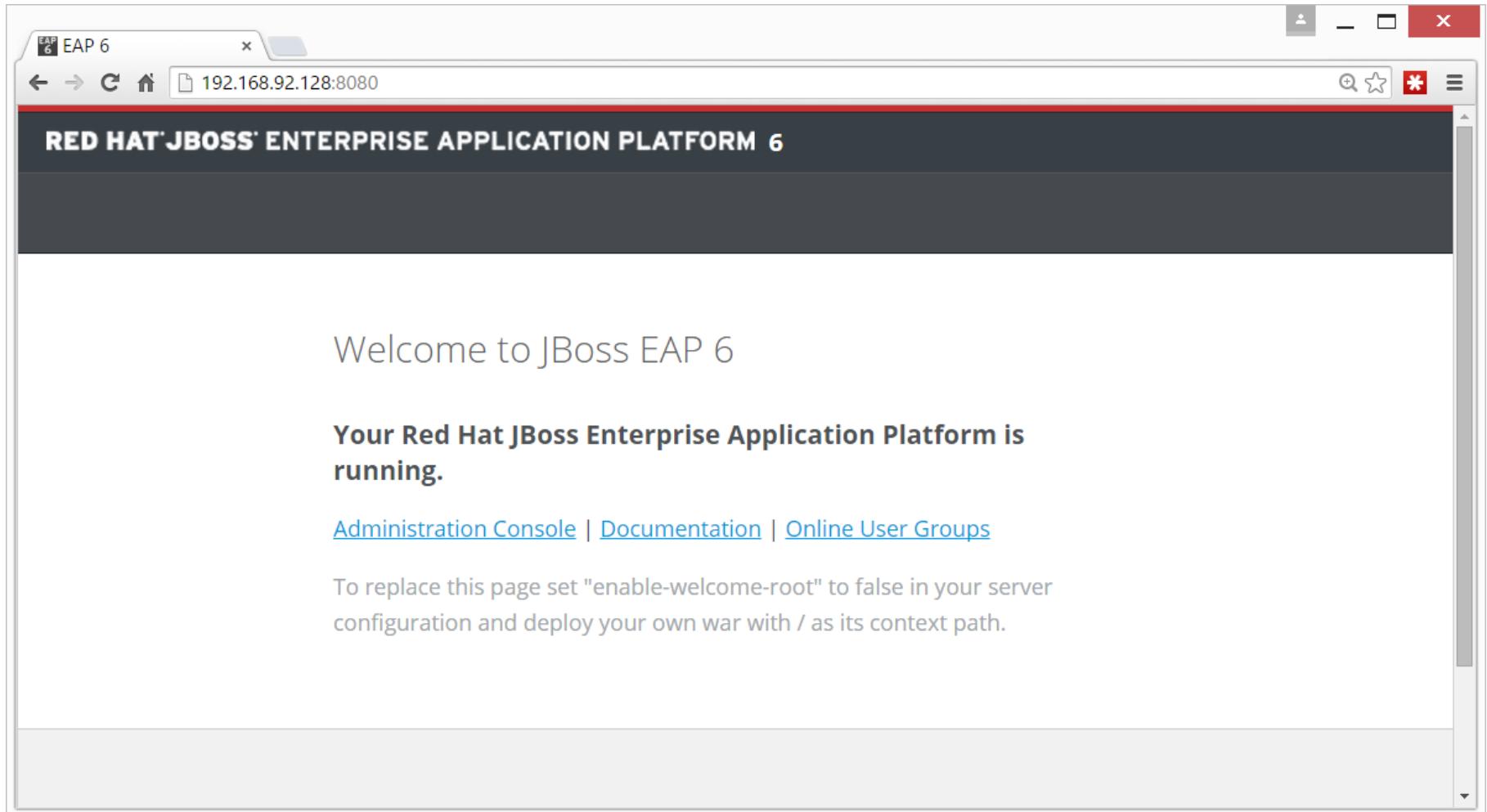
The screenshot shows the Oracle SQL Workshop interface. The top navigation bar includes tabs for Home, Application Builder, SQL Workshop (selected), Team Development, and Administration. Below the navigation bar, the breadcrumb path is Home > SQL Workshop > Object Browser. The Schema dropdown is set to IMDBA. On the left, the Object Browser displays a list of tables, including ARCHIVE_EVENT12_5, ARCHIVE_EVENT_OBJECT12_5, ARCHIVE_OBJECT12_5, ARCHIVE_RSDATTRIBUTE12, ARCHIVE_RUNTIMESTATUSDETAII, ARCHIVE_TASKSESSION12_5, AUXDATA12, AUDATAPROVIDERS12, EVENT12_5, EVENT_OBJECT12_5, IDMSTALEEVENTOBJECTRECORD, IDMSTALEEVENTRECORDS6, IMRACCOUNTTEMPLATEREL, IMRATTRIBUTE, IMRATTRIBUTEINFO, IMRBULKTASKS125, IMRCAPABILITYATTRREL, IMREMAILMANAGEMENT125, IMREPORT6, IMREPORT_VERSION, IMRGROUP6, IMRGROUPADMIN6, and IMRGROUPATTR6. A modal dialog box titled "Should LastPass remember this password?" is overlaid on the interface. The main content area shows the IM_AUTH_USER table with one row:

EDIT	USER_NAME	PASSWORD	DISABLED	ID
	idmembedded	{PBES}:B8+4u/F3aiZ9sXus6HyDNA==	0	0

Below the table, it says "row(s) 1 - 1 of 1".

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JBOSS URL 8080 – After Install



IM IMANAGE CONSOLE URL 8080 – After Install

The image shows two screenshots of the CA Management Console interface. The top screenshot displays the login screen with fields for 'User Name' (idmembedded) and 'Password'. The bottom screenshot shows the 'Directories' page with a table listing a single directory named 'AuthenticationDirectory'.

CA Management Console

User Name: idmembedded *

Password: [REDACTED] *

Management Console

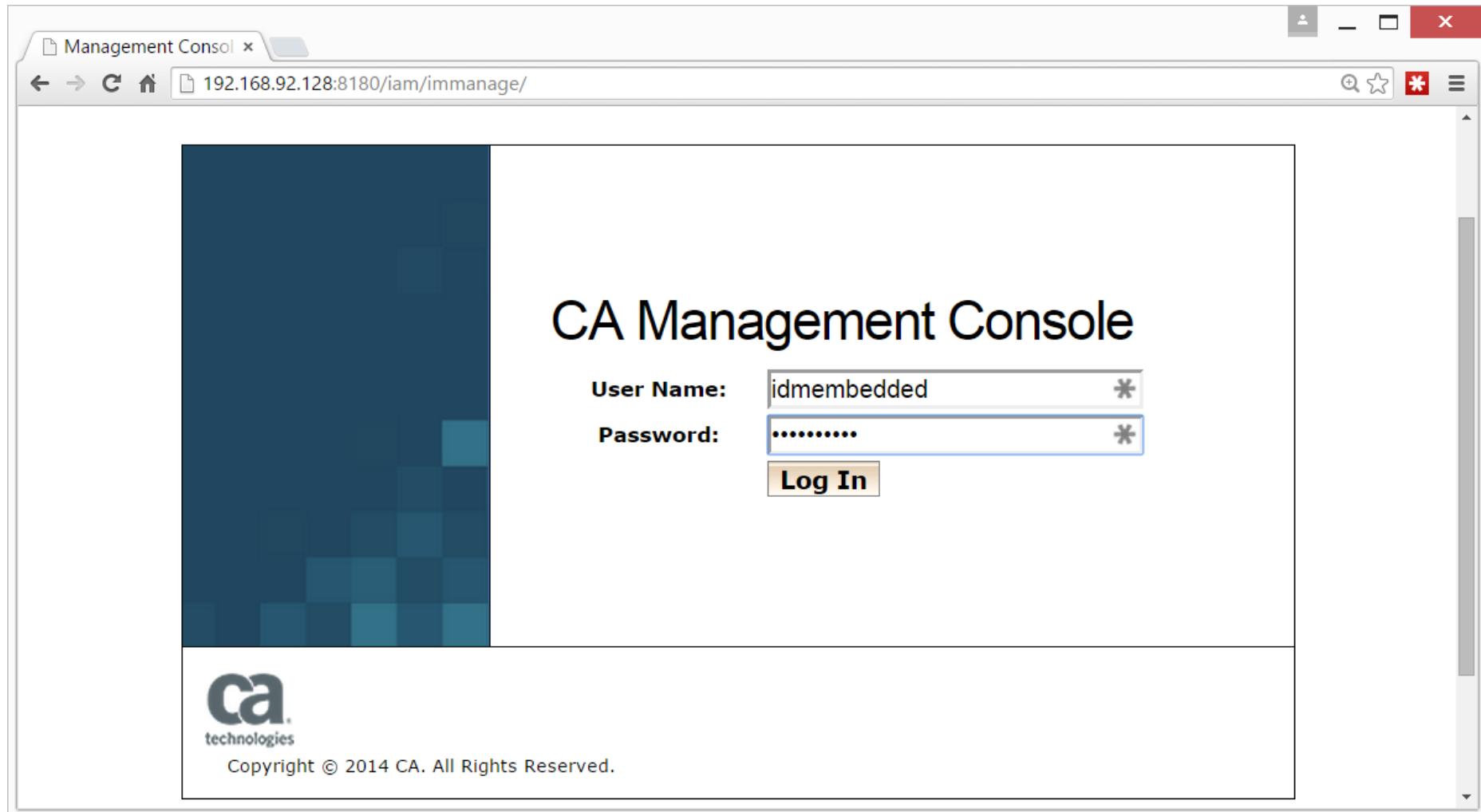
Home > Directories

Name	Description	Type	Used For Authentication	Environment(s)
AuthenticationDirectory	This is a bootstrap directory used for authentication.	Relational Database (Orgless)	true	

Create from Wizard | Create or Update from XML | Delete

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IM MANAGE CONSOLE URL 8180 – 2nd Copy



COMPARE OPERATION – JBOSS FOLDERS

When ONLY NODE ID is different

jboss-eap-6.2 <--> jboss-eap-6.2-node02 - Folder Compare - Beyond Compare

Session Actions Edit Search View Tools Help

jboss-eap-6.2 <--> jbo... * logging.properties * server.lock * hornetq-bindings-1.bin... * server.lock * server.log *

Home Sessions All Diffs Same Structure Minor Rules Copy Expand Collapse Select Files Refresh Swap Stop

Filters: *.* Filters Peek

I:\temp\jboss-eap-6.2\bin I:\temp\jboss-eap-6.2-node02\bin

Name	Size	Modified
bin	10,491,670	7/11/2015 12:38:01 AM
└─ standalone.sh	11,033	7/11/2015 12:38:00 AM
standalone	177,022,934	7/11/2015 12:39:48 AM
└─ configuration	460,817	7/11/2015 12:39:48 AM
└─ standalone_xml_history	132,261	7/11/2015 12:39:48 AM
└─ standalone-full-ha.boot.xml	44,087	7/11/2015 12:39:48 AM
└─ standalone-full-ha.initial.xml	44,087	7/11/2015 12:39:48 AM
└─ standalone-full-ha.last.xml	44,087	7/11/2015 12:39:48 AM
└─ logging.properties	1,910	7/11/2015 12:39:48 AM
data	4,399,142	7/11/2015 12:36:10 AM
log	122,248	7/11/2015 12:39:48 AM
tmp	0	7/11/2015 12:36:10 AM

Name	Size	Modified
bin	10,491,734	7/11/2015 12:35:56 AM
└─ standalone.sh	11,097	7/11/2015 12:35:56 AM
standalone	177,048,897	7/11/2015 12:37:46 AM
└─ configuration	460,830	7/11/2015 12:37:45 AM
└─ standalone_xml_history	132,267	7/11/2015 12:37:46 AM
└─ standalone-full-ha.xml.iamnode02.boot....	44,089	7/11/2015 12:37:46 AM
└─ standalone-full-ha.xml.iamnode02.initial...	44,089	7/11/2015 12:37:46 AM
└─ standalone-full-ha.xml.iamnode02.last.x...	44,089	7/11/2015 12:37:46 AM
└─ logging.properties	1,917	7/11/2015 12:37:45 AM
data	4,399,142	7/11/2015 12:35:50 AM
log	121,661	7/11/2015 12:37:46 AM
tmp	26,537	7/11/2015 12:35:50 AM

7/11/2015 12:40:40 AM Background content comparison completed in 18.5 seconds
7/11/2015 12:42:44 AM Fast refresh

1 file(s) selected, 10.8 KB 11.1 GB free on I:\ 11.1 GB free on I:\

COMPARE OPERATION – standalone.sh

When ONLY NODE ID is different

standalone.sh - Text Compare - Beyond Compare

Session File Edit Search View Tools Help

JBoss EAP 6.2 <-> jboss-eap... logging.properties server.lock hornetq-bindings-1.bindings server.lock server.log standalone.sh

Home Sessions All Diffs Same Context Minor Rules Format Copy Edit Next Section Prev Section Swap Reload

I:\temp\jboss-eap-6.2\bin\standalone.sh I:\temp\jboss-eap-6.2-node02\bin\standalone.sh

7/11/2015 12:38:00 AM 11,033 bytes Everything Else ANSI UNIX

7/11/2015 12:35:56 AM 11,097 bytes Everything Else ANSI UNIX

```
SERVER_OPTS=""  
  
# ----- start CA IAM FW changes -----  
  
#STANDALONE_CONFIGURATION="standalone-full-ha.xml"  
BIND_ADDRESS="0.0.0.0"  
NODE_NAME="iamnode01"  
MULTI_CAST_ADDRESS="230.0.0.4"  
JGROUPS_BIND_ADDRESS="192.168.92.128"  
JGROUPS_INITIAL_HOSTS="casandbox01[7600],casandbox02[7700]"  
JAVA_HOME="/opt/CA/java/jdk1.7.0_71_x64"  
IDM_OPTS="-Dnrete.j2ee.vendor=jboss"  
  
#Uncomment the line below if IPv6 Only stack is used  
#IDM_OPTS="$IDM_OPTS -Djava.net.preferIPv6Addresses=true"  
  
#Uncomment the line below if IPv6 Dual stack is used  
IDM_OPTS="$IDM_OPTS -Djava.net.preferIPv4Stack=true"  
IDM_OPTS="$IDM_OPTS -Dorg.apache.catalina.connector.WAIT_FOR_BEFORE_START=/castylesr5.1.1,  
  
#IDM_OPTS="$IDM_OPTS -Djboss.socket.binding.port-offset=100 -Djboss.node.name=iamnode02"  
  
SERVER_OPTS="$SERVER_OPTS -c $STANDALONE_CONFIGURATION -b $BIND_ADDRESS -Djgroups.tcpping.  
  
# ----- end CA IAM FW changes -----  
  
while [ "$#" -gt 0 ]  
do  
    case "$1" in  
        --debug)  
            ;;  
    esac  
done
```

1:1 Default text < >

3 difference section(s) Same Insert Load time: 0.03 seconds

```
SERVER_OPTS=""  
  
# ----- start CA IAM FW changes -----  
  
#STANDALONE_CONFIGURATION="standalone-full-ha.xml"  
STANDALONE_CONFIGURATION="standalone-full-ha.xml.iamnode02.xml"  
BIND_ADDRESS="0.0.0.0"  
NODE_NAME="iamnode02"  
MULTI_CAST_ADDRESS="230.0.0.4"  
JGROUPS_BIND_ADDRESS="192.168.92.128"  
JGROUPS_INITIAL_HOSTS="casandbox01[7600],casandbox02[7700]"  
JAVA_HOME="/opt/CA/java/jdk1.7.0_71_x64"  
IDM_OPTS="-Dnrete.j2ee.vendor=jboss"  
  
#Uncomment the line below if IPv6 Only stack is used  
#IDM_OPTS="$IDM_OPTS -Djava.net.preferIPv6Addresses=true"  
  
#Uncomment the line below if IPv6 Dual stack is used  
IDM_OPTS="$IDM_OPTS -Djava.net.preferIPv4Stack=true"  
IDM_OPTS="$IDM_OPTS -Dorg.apache.catalina.connector.WAIT_FOR_BEFORE_START=/castylesr5.1.1,  
  
IDM_OPTS="$IDM_OPTS -Djboss.socket.binding.port-offset=100 -Djboss.node.name=iamnode02"  
  
SERVER_OPTS="$SERVER_OPTS -c $STANDALONE_CONFIGURATION -b $BIND_ADDRESS -Djgroups.tcpping.  
  
# ----- end CA IAM FW changes -----  
  
while [ "$#" -gt 0 ]  
do  
    case "$1" in  
        --debug)  
            ;;  
    esac  
done
```

1:1 Default text < >