

630 SMAPI/XCAT setup - (update 1/27/2015) - by Marci Beach

If you have installed saying "N" to the using smapi install panel and will use the Dirmaint product, but still want to use smapi and XCAT, follow the info below.
If you installed saying "Y" to the using smapi install panel, skip to the Heading "SKIP TO HERE" below.

The info below is for getting Dirmaint, SMAPI and XCAT setup for use.

Here is a list of some of the things I check:

- Q NAMES to see that all the expected users are logged on. These should not include the SMAPI worker & server ids etc.
- Q DASD to make sure system has all the dasd attached.
- Q OSA to make sure OSAs are attached as desired.
- NETSTAT HOME to make sure ip address looks good.

First I will use the Program Directory to enable Dirmaint and setup the product for use with my system.

Start Dirmaint and make sure it comes up and is operational for native CMS users.

I will then follow the Appendix B. DirMaint Support for Systems Management APIs to add configuration for SMAPI use to Dirmaint.

Logon to DIRMAINT userid, create or edit the supplemental CONFIGSM DATADVH file.

First configure use of ASUSER Prefix by adding entries for the SMAPI worker servers.

```
ALLOW_ASUSER_NOPASS_FROM= VSMGUARD * | ZVM63SS1
ALLOW_ASUSER_NOPASS_FROM= VSMGUARD *
ALLOW_ASUSER_NOPASS_FROM= VSMWORK1 * | ZVM63SS1
ALLOW_ASUSER_NOPASS_FROM= VSMWORK1 *
ALLOW_ASUSER_NOPASS_FROM= VSMWORK2 * | ZVM63SS1
ALLOW_ASUSER_NOPASS_FROM= VSMWORK2 *
ALLOW_ASUSER_NOPASS_FROM= VSMWORK3 * | ZVM63SS1
ALLOW_ASUSER_NOPASS_FROM= VSMWORK3 *
```

Then add entries to enable the Asynchronous Update Notification Exit

```
ASYNCHRONOUS_UPDATE_NOTIFICATION_EXIT.TCP= DVHXNE EXEC
ASYNCHRONOUS_UPDATE_NOTIFICATION_EXIT.UDP= DVHXNE EXEC
```

Issue the RLDDATA command.

Now I need to add the SMAPI Worker servers to the AUTHFOR CONTROL file in order to give them the DirMaint Command Set Authorizations.

```

ALL VSMGUARD *      140A ADGHMOPS
ALL VSMGUARD *      150A ADGHMOPS
ALL VSMWORK1 *      140A ADGHMOPS
ALL VSMWORK1 *      150A ADGHMOPS
ALL VSMWORK2 *      140A ADGHMOPS
ALL VSMWORK2 *      150A ADGHMOPS
ALL VSMWORK3 *      140A ADGHMOPS
ALL VSMWORK3 *      150A ADGHMOPS

```

Issue the RLDDATA command.

Now on to the SMAPI configuration needed to allow its usage.

Use the LOCALMOD procedure to edit the DMSSISVR NAMES file.
and change the following entry:

```

* Optional Directory Manager. This tag is set by VM INSTALLATION
* code so that SMAPI can determine if the "limited access" copy of
* DIRMAINT is desired. If the limited access copy of DIRMAINT is
* desired, this tag should never be changed by the customer. If the
* limited access copy of DIRMAINT is not desired, this tag can be
* used to indicate that SMAPI, upon its instantiation, should autolog
* the designated server. If the customer wants the VM system to be
* part of an ensemble, this tag must be specified (uncommented),
* either at installation time by the installation process or manually
* by the customer.
:server.DIRMAINT
:type.DMGR

```

Edit the PROFILE EXEC on the AUTOLOG1 id and add startup of VSMGUARD.

```

/*****/
/* Customer processing can be added here */
/*****/
"PIPE CP XAUTOLOG VSMGUARD"

/*****/
/* Call Exit_Routine */
/*****/
Call Exit_Routine rrc

```

Now I will SHUTDOWN REIPL to make sure DIRMAINT and SMAPI comes up ok

SKIP TO HERE

I will now try simple SMAPI Queries to make sure all is ok. I will use the Q API LEVEL and Q DIRECTORY MANAGER LEVEL APIs

There is a package in the VM Download Library that will execute these APIs. (Q_SMAPI).

If all is well it is time to get XCAT configured.

To allow the XCAT and ZHCP servers to function properly on z/VM, you need to supply the following information:

- IP addresses assigned to the XCAT server, XCAT management node and ZHCP servers
- Host names for the XCAT and ZHCP servers
- The real device number or a real device number and OSA-Express port number to be used as an UPLINK port to connect the virtual switch to the OSA-Express device.
- The z/VM system node ID.
- DASD space to contain the Linux ISO repository

I will use the LOCALMOD process to update the DMSSICNF COPY file to include this info for my system:

```
DMSSICNF COPY      Z2  V 80  Trunc=71 Size=208 Line=77 Col=1 Alt=0

/*****/
XCAT_User      = "XCAT"                /* xCAT z/VM user ID      */
XCAT_Addr      = "10.10.10.10"          /* XCAT IP Address        */
XCAT_Host      = "xcat"                 /* xCAT hostname          */
XCAT_Domain    = ".endicott.ibm.com"    /* xCAT domain name       */
XCAT_vswitch   = "XCATVSW1"            /* xCAT Vswitch name      */
XCAT_OSAdev    = "2940"                 /* OSA address for xCAT   */
XCAT_zvmssid   = "ZVM63SS1"            /* xCAT z/VM system id    */
XCAT_notify    = "OPERATOR"            /* Notify when xCAT started */
XCAT_gateway   = "10.10.10.1"          /* Network gateway IP addr. */
XCAT_netmask   = "255.255.255.0"       /* Default network mask   */
XCAT_vlan      = "NONE"
XCAT_iso       = "LX6851 LXBC4B LXBC4C LXBC00 LXBC01"

XCAT_MN_Addr   = "9.60.27.47"          /* xCAT mgmt node IP address */
XCAT_MN_vswitch = "XCATVSW2"          /* xCAT MN Vswitch name     */
XCAT_MN_OSAdev = "6623"                /* OSA address for xCAT MN  */
XCAT_MN_gateway = "9.60.27.1"          /* Network gateway IP addr.  */
XCAT_MN_Mask   = "255.255.255.0"       /* Netmask for xCAT MN      */
XCAT_MN_vlan   = "NONE"
```



```

XCAT_MN_admin = "marci"          /* MN administrator userid */
XCAT_MN_pw     = "pw4mb"         /* MN admin password      */
                                   /* (if NOLOG, userid cannot */
                                   /* ssh into XCAT MN)       */

/*****
/* ZHCP server defaults
*****/
ZHCP_User      = "ZHCP"          /* zhcp z/VM user ID      */
ZHCP_Addr      = "10.10.10.20"   /* zhcp IP ADDRESS        */
ZHCP_Host      = "zhcp"          /* zhcp hostname          */
ZHCP_Domain    = ".endicott.ibm.com" /* zhcp domain name      */
ZHCP_gateway   = "10.10.10.1"    /* Network gateway IP addr.*/
ZHCP_netmask   = "255.255.255.0" /* Default network mask   */
ZHCP_vswitch   = "XCATVSW1"      /* zhcp Vswitch name      */
ZHCP_OSAdev    = "2940"          /* OSA address for zhcp   */
ZHCP_vlan      = "NONE"

```

For the volumes added to the XCAT_iso variable you need to use CPFMTXA to do a CP format of the volumes being used (Note that xCAT will be able to use the DASD volumes only if they are formatted by CPFMTXA) and ATTACH the volumes to the SYSTEM.

We will delete the XCATVSW1 and XCATVSW2 vswitches that were created when SMAPI was originally started.

```

Ready; T=0.01/0.01 06:51:23
det vswitch xcatvsw1
VSWITCH SYSTEM XCATVSW1 is destroyed
Ready; T=0.01/0.01 06:51:57
q vswitch xcatvsw1 details
HCPSWQ2783E VSWITCH SYSTEM XCATVSW1 does not exist
Ready(02783); T=0.01/0.01 06:55:20
det vswitch xcatvsw2
VSWITCH SYSTEM XCATVSW2 is destroyed
Ready; T=0.01/0.01 09:52:08
q vswitch xcatvsw2 details
HCPSWQ2783E VSWITCH SYSTEM XCATVSW2 does not exist
Ready(02783); T=0.01/0.01 09:55:17

```

Then Shutdown REIPL in order to get SMAPI restarted. This is the easiest way to make sure everything is stopped and started up cleanly.

After about 5 min or so (this wait time depends on how many and how big the iso disks you have defined are), if you issue the Q VSWITCH XCATVSW1 DETAILS and the Q VSWITCH XCATVSW2 DETAILS commands, you should see the info you added to the configuration for XCAT has taken affect.

q vswitch xcatvsw1 details

```
VSWITCH SYSTEM XCATVSW1 Type: QDIO    Connected: 2    Maxconn: INFINITE
  PERSISTENT RESTRICTED ETHERNET      Accounting: OFF
  USERBASED
  VLAN Unaware
  MAC address: 02-00-01-00-00-D2    MAC Protection: Unspecified
  IPTimeout: 5      QueueStorage: 8
  Isolation Status: OFF      VEPA Status: OFF
Uplink Port:
  State: Ready
  PMTUD setting: EXTERNAL    PMTUD value: 8992
  RDEV: 2940.P00 VDEV: 0633 Controller: DTCVSW1 ACTIVE
    Uplink Port Connection:
      RX Packets: 826      Discarded: 0      Errors: 0
      TX Packets: 844      Discarded: 0      Errors: 0
      RX Bytes: 69628      TX Bytes: 67392
      Device: 0633 Unit: 000 Role: DATA      Port: 2049
      Partner Switch Capabilities: Unavailable
Adapter Connections:      Connected: 2
  Adapter Owner: XCAT      NIC: 0600.P00 Name: UNASSIGNED Type: QDIO
    RX Packets: 924827      Discarded: 0      Errors: 0
    TX Packets: 7      Discarded: 0      Errors: 0
```

RX Bytes: 100131232 TX Bytes: 630
Device: 0602 Unit: 002 Role: DATA Port: 0004
Options: Ethernet Broadcast

Unicast MAC Addresses:

02-00-01-00-00-D8

Multicast MAC Addresses:

01-00-5E-00-00-01

33-33-00-00-00-01

33-33-00-00-00-02

33-33-00-00-02-02

33-33-FF-00-00-00

33-33-FF-00-00-D8

Adapter Owner: ZHCP NIC: 0600.P00 Name: UNASSIGNED Type: QDIO

RX Packets: 925343 Discarded: 0 Errors: 0

TX Packets: 831 Discarded: 0 Errors: 0

RX Bytes: 100167042 TX Bytes: 66186

Device: 0602 Unit: 002 Role: DATA Port: 0005

Options: Ethernet Broadcast

Unicast MAC Addresses:

02-00-01-00-00-DA

Multicast MAC Addresses:

01-00-5E-00-00-01

33-33-00-00-00-01

33-33-00-00-02-02

33-33-FF-00-00-DA

Ready; T=0.01/0.01 09:17:32

q vswitch xcatvsw2 details

```
VSWITCH SYSTEM XCATVSW2 Type: QDIO    Connected: 3    Maxconn: INFINITE
PERSISTENT RESTRICTED ETHERNET        Accounting: OFF
USERBASED
VLAN Unaware
MAC address: 02-00-01-00-00-D6    MAC Protection: Unspecified
IPTimeout: 5    QueueStorage: 8
Isolation Status: OFF    VEPA Status: OFF
Uplink Port:
State: Ready
PMTUD setting: EXTERNAL    PMTUD value: 8992
RDEV: 6623.P00 VDEV: 061E Controller: DTCVSW2 ACTIVE
  Uplink Port Connection:
    RX Packets: 5263    Discarded: 0    Errors: 0
    TX Packets: 12180    Discarded: 0    Errors: 0
    RX Bytes: 1448001    TX Bytes: 1788599
    Device: 061E Unit: 000 Role: DATA    Port: 2049
    Partner Switch Capabilities: Unavailable
Adapter Connections:    Connected: 3
  Adapter Owner: XCAT    NIC: 0700.P00 Name: UNASSIGNED Type: QDIO
    RX Packets: 930348    Discarded: 0    Errors: 0
    TX Packets: 12174    Discarded: 0    Errors: 0
```



```
RX Bytes: 101610037      TX Bytes: 1788023
Device: 0702  Unit: 002   Role: DATA      Port: 0003
Options: Ethernet Broadcast
  Unicast MAC Addresses:
    02-00-01-00-00-D9 IP: 9.60.27.47
  Multicast MAC Addresses:
    01-00-5E-00-00-01
    33-33-00-00-00-01
    33-33-00-00-00-02
    33-33-00-00-02-02
    33-33-FF-00-00-00
    33-33-FF-00-00-D9
Adapter Owner: XCAT      NIC: 0800.P00 Name: UNASSIGNED  Type: QDIO
RX Packets: 63          Discarded: 167255      Errors: 0
TX Packets: 0           Discarded: 0            Errors: 0
RX Bytes: 4662          TX Bytes: 0
Device: 0802  Unit: 002   Role: DATA      Port: 0004
Options: Ethernet Broadcast
  Unicast MAC Addresses:
    02-00-01-00-00-DD
Adapter Owner: ZHCP      NIC: 0700.P00 Name: UNASSIGNED  Type: QDIO
Port: 0002
```

Ready; T=0.01/0.01 09:18:45

After a few minutes, you should be able to ping the XCAT Management Node ip address.

```
ping 9.60.27.47
Ping Level 630: Pinging host 9.60.27.47.
                Enter #CP EXT to interrupt.
PING: Ping #1 response took 0.001 seconds. Successes so far 1.
Ready; T=0.01/0.01 09:30:33
```

With successful pings, I should now be able to go to the web interface for XCAT at <https://myipadress/xcat/>

Since this is a secure site, you will first have to Add the Exception.



This Connection is Untrusted

You have asked Firefox to connect securely to **9.60.27.47**, but we can't confirm that your connection is secure.

Normally, when you try to connect securely, sites will present trusted identification to prove that you are going to the right place. However, this site's identity can't be verified.

What Should I Do?

If you usually connect to this site without problems, this error could mean that someone is trying to impersonate the site, and you shouldn't continue.

Get me out of here!

▼ Technical Details

9.60.27.47 uses an invalid security certificate.

The certificate is not trusted because it is self-signed.
The certificate is only valid for smaplibm.com

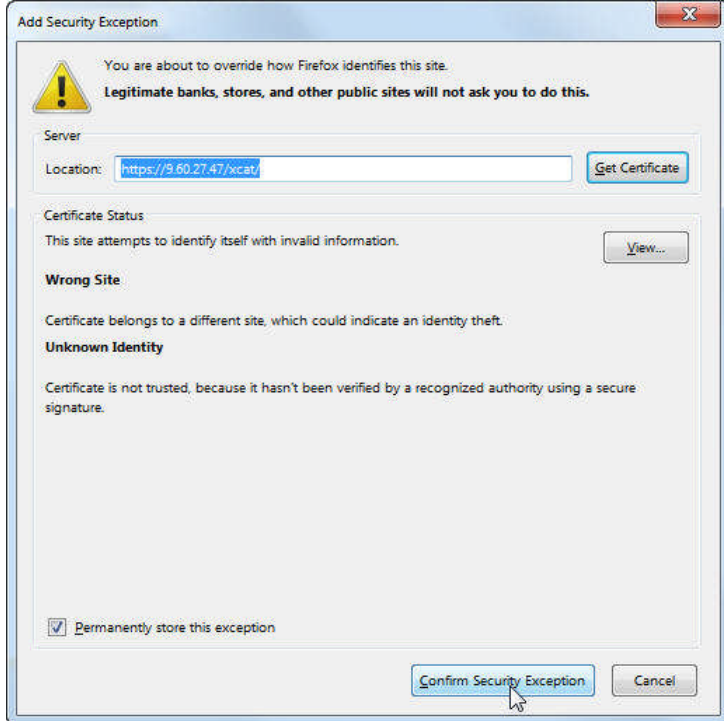
(Error code: sec_error_untrusted_issuer)

▼ I Understand the Risks

If you understand what's going on, you can tell Firefox to start trusting this site's identification. **Even if you trust the site, this error could mean that someone is tampering with your connection.**

Don't add an exception unless you know there's a good reason why this site doesn't use trusted identification.

Add Exception...



You will then get to the Login screen, enter login info and hit login button.



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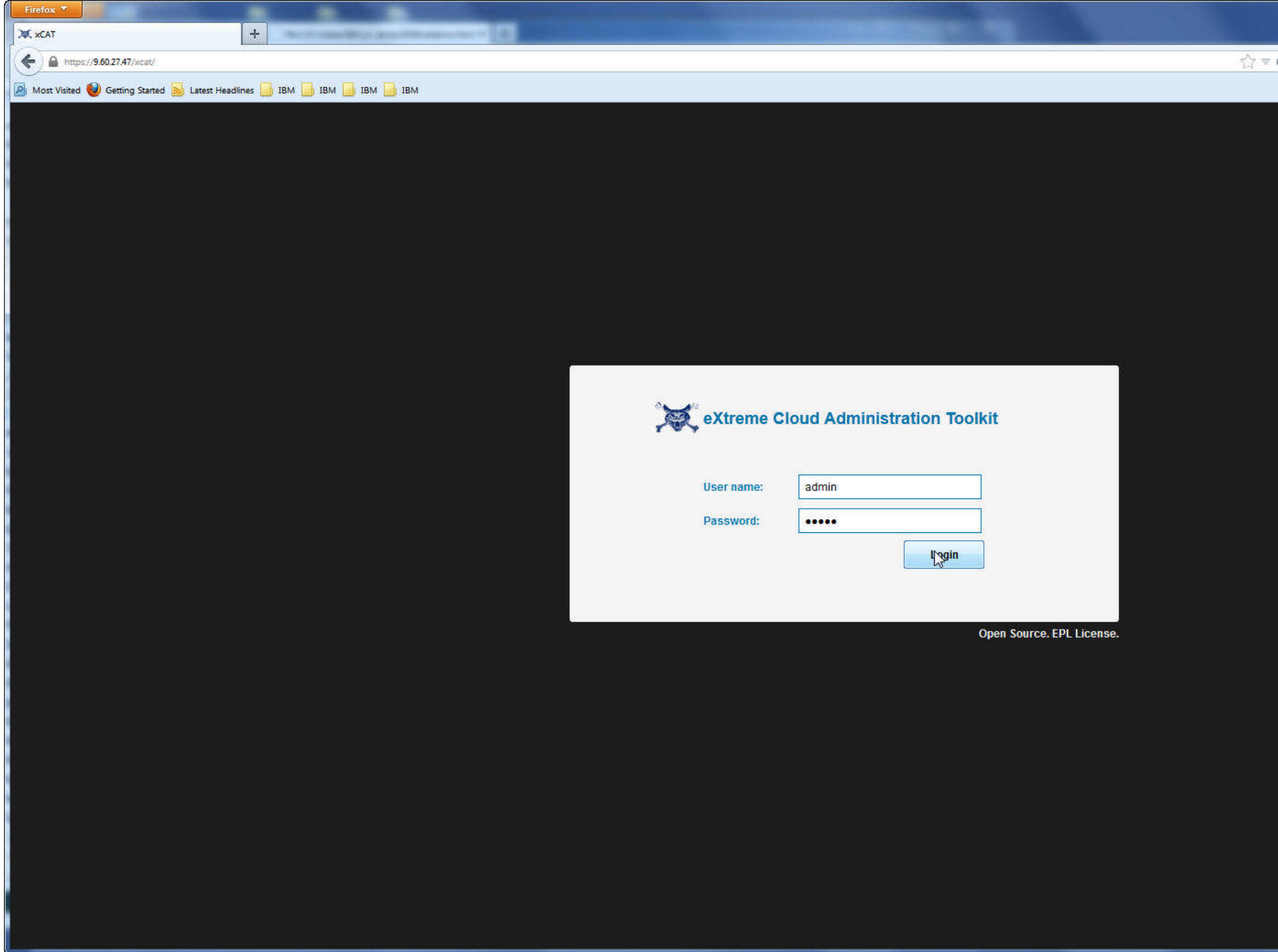
User name:

Password:

Login



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This will take you to the main window.



Help

- Quick Start

- ### 1. View defined nodes

View node definitions by groups in a table.



- ## 2. Manage operating system images

View operating system images defined in xCAT. Copy operating system ISOs into xCAT.

- ### 3. Provision nodes

Create virtual machines. Install an operating system onto virtual machines.

- #### 4. Manage and provision storage and networks

Create network devices. Define storage for systems.

- Settings



- a. Manage and control user access

- b. Edit the xCAT database tables

From here on out, I followed the XCAT tutorial for setting up and provisioning a guest etc.