# CA Nimsoft® Unified Management Portal

## DMZ Guide

7.6

# Document Revision History

| Document Version | Date | Changes |
|---|---|---|
| 1.0 | June, 2014 | Initial version for UMP 7.6. Updated to include an overview graphic and a procedure to set up the Tomcat Connector. |

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# Chapter 1: How to Set up Access to UMP through a DMZ

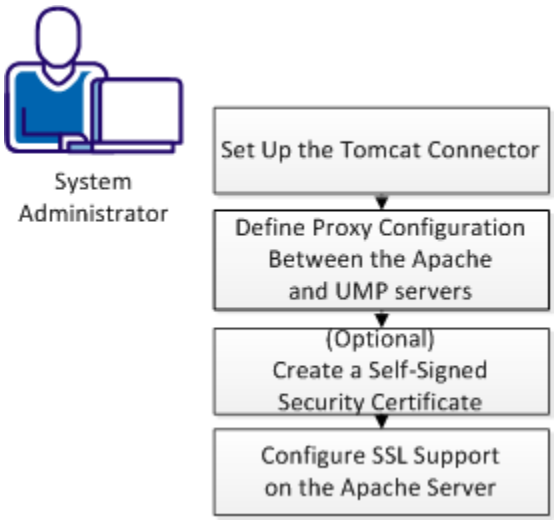
As a system administrator, you enable secure communication through a proxy web server to set up access to UMP through a DMZ.

A DMZ limits your network vulnerability to unauthorized use or attack. External users have direct access only to the proxy web server in the DMZ and not your internal network.

**Prerequisites:**

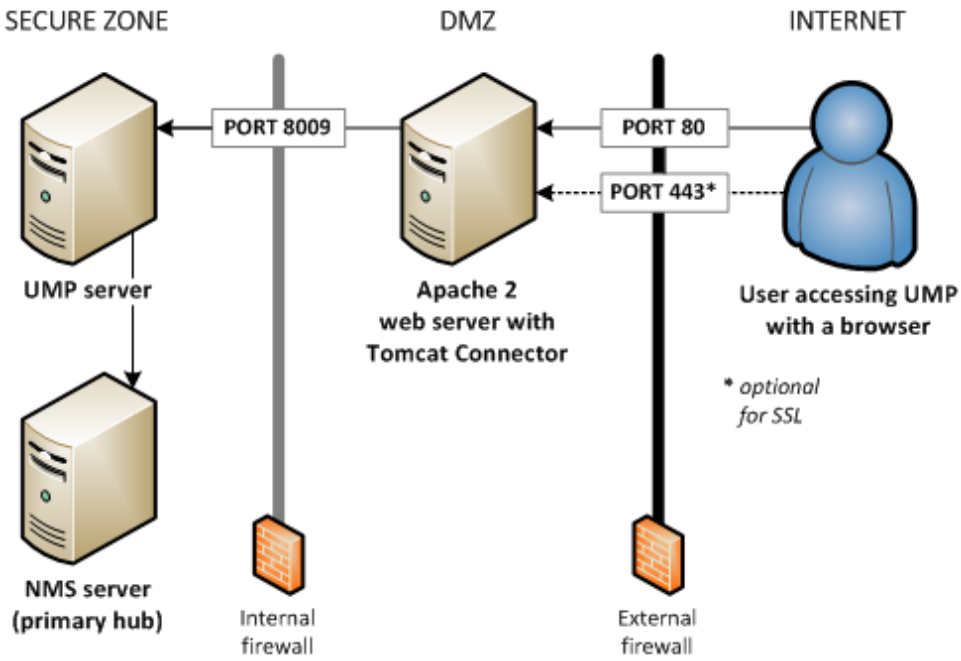
- Install NMS.
- Install UMP and ensure that it is communicating with NMS.
- Download and install Apache and the Tomcat Connector on the server in the DMZ.
- Ensure that you have a JkMount directive appropriate for your configuration.
- Designate a public IP address for the Apache web server (if you want to access UMP from the Internet).

**The following flowchart shows how to set up access to UMP through a DMZ.**



1. Set up the Tomcat Connector (see page 7).
2. Define Proxy Configuration between the Apache and UMP Servers (see page 9).
3. (Optional) Create a Self-Signed Security Certificate (see page 10).
4. Configure SSL Support on the Apache Server (see page 11).

# Graphic Overview of UMP Configured with a DMZ



# Set up the Tomcat Connector

Set up the Tomcat Connector to allow communication between the Apache web proxy server and the web application service probe (wasp) in UMP.

**Follow these steps:**

1. Create the workers.properties file and save it in:

   C:\Program Files (x86)\Apache Software Foundation\Apache\conf

2. Specify the UMP server.

   For example:

```
# Define 1 real worker using ajp13
  worker.list=worker1
  # Set properties for worker1 (ajp13)
  worker.worker1.type=ajp13
  worker.worker1.host=10.10.10.10
  worker.worker1.port=8009
```

3. On the Apache server, download the version of mod_jk.so that it matches your version of Apache and save it to:

   C:\Program Files (x86)\Apache Software Foundation\Apache\modules

   **Important!** Ensure that you have a JkMount directive appropriate for your configuration.

4. Add the Tomcat Connector configuration to the Apache configuration file, httpd.conf:

   For example:

```
# Load mod_jk module
# Update this path to match your modules location
LoadModule    jk_module  modules/mod_jk.so
# Where to find workers.properties
# Update this path to match your conf directory location (put
workers.properties next to httpd.conf)
JkWorkersFile conf/workers.properties
# Where to put jk shared memory
# Update this path to match your local state directory or logs directory
JkShmFile     logs/mod_jk.shm
# Where to put jk logs
# Update this path to match your logs directory location (put mod_jk.log next
to access_log)
JkLogFile     logs/mod_jk.log
# Set the jk log level [debug/error/info]
JkLogLevel    debug
# Select the timestamp log format
JkLogStampFormat "[%a %b %d %H:%M:%S %Y] "
# Send everything for context / to worker named worker1 (ajp13)
JkMount / worker1
```

The Tomcat Connector is set up for communication.

# Define Proxy Configuration between the Apache and UMP Servers

Configure proxy communication between the Apache proxy web server and UMP server so that external browsers can access UMP through the DMZ.

**Follow these steps:**

1. Edit the Apache configuration file, httpd.conf, as follows:
   - Uncomment the following lines:
     ```
     LoadModule proxy_module modules/mod_proxy.so
     LoadModule proxy_ajp_module modules/mod_proxy_ajp.so
     ```
   - Locate: #ServerName www.example.com; uncomment and change it to:
     ```
     ServerName <Apache_server_name>.<domain>.com:80
     ```
   - Add the following lines to the end of the httpd.conf file:
     ```
     ProxyRequests On
     <Proxy *>
     Order deny,allow
     Allow from all
     </Proxy>
     ProxyPass / ajp://<ump_server_name_orIP>:8009/
     ProxyPass /c/portal ajp://<ump_server_name_orIP>:8009/c/portal
     ProxyPass /web/guest ajp://<ump_server_name_orIP>:8009/web/guest
     ProxyRequests Off
     ```

     For example:
     ```
     ProxyRequests On
     <Proxy *>
     Order deny,allow
     Allow from all
     </Proxy>
     ProxyPass / ajp://10.10.10.10:8009/
     ProxyPass /c/portal ajp://10.10.10.10:8009/c/portal
     ProxyPass /web/guest ajp://10.10.10.10:8009/web/guest
     ProxyRequests Off
     ```
2. On the *inside* firewall, open Port 8009.
3. On the *outside* firewall, open:
   - Port 80
   - OR Port 443 if you are using SSL

   **Note**: (Optional) To allow internet access to a hub in the DMZ, you must assign a public IP address.
4. Restart the Apache server.
5. To test whether the Apache web server proxies you to the UMP login page, access the URL of the proxy server in your web browser.

You defined proxy configuration between the Apache and UMP servers.

# (Optional) Create a Self-Signed Certificate

You must have a security certificate to configure a secure connection between the proxy web server and web browsers. A certificate from a certificate authority ensures site visitors that any transferred data is more secure. If you do not transfer sensitive data and you are less concerned about security, create a self-signed certificate.

**Note**: Visitors see a warning that a trusted certificate authority did not issue the certificate but they can proceed to the website.

**Follow these steps:**

1. Open a command prompt on the web server.
2. Change directories:

   C:\Program Files\Apache\conf
3. Generate a private key:

   ```
   ..\bin\openssl genrsa -des3 -out server.key 1024
   ```
4. Generate a CSR (Certificate Signing Request):

   ```
   ..\bin\openssl req -config ..\conf\openssl.cnf
   -new -key server.key -out server.csr
   ```
5. Remove the passphrase from the key:

   ```
   copy server.key server.key.org
   ..\bin\openssl rsa -in server.key.org -out server.key
   ```
6. Generate a self-signed certificate:

   ```
   ..\bin\openssl x509 -req -days 365 -in server.csr -signkey server.key -out
   server.crt
   ```
7. Edit httpd-ssl.conf to update paths to:

   ```
   SSLCertificateFile and SSLCertificateKeyFile
   ```

   You created a self-signed certificate.

# Configure SSL Support on the Apache Server

Configure SSL support on the Apache server to establish an encrypted link between the web proxy server and external browsers.

**Follow these steps:**

1. In the Apache configuration file, httpd.conf, uncomment the following lines:

   ```
   LoadModule ssl_module modules/mod_ssl.so
   Include conf/extra/httpd-ssl.conf
   ```

2. In the Apache configuration file conf/extra/httpd-ssl.conf, edit the following parameters:

   Listen port

   Identifies the port number that is opened on the inside firewall for SSL as required.

   **Note**: You can use the netstat command to make sure that no other applications are using the port that you specify. If you use port 443 on an Internet Information Services (IIS) web server, this may be an issue.

   VirtualHost

   Identifies the port number that is opened on the inside firewall for SSL. (Default value is 443.)

   ServerName

   Defines the name for the Apache server, including port number (for example: 10.10.10.10:443).

   ServerAdmin

   Defines the email address for the administrator.

   SSLCertificateFile

   Identifies the path to the PEM encoded certificate.

   SSLCertificateKeyFile

   Identifies the path to the private key if it is not already combined with the certificate.

3. In the Apache configuration file conf/extra/httpd-ssl.conf, accept the default or specify the desired path for the following parameters:

   - **DocumentRoot**
   - **SSLSessionCache**
   - **ErrorLog**
   - **TransferLog**
   - **CustomLog**

4. Restart the Apache web server.

   You configured SSL support on the Apache server.

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