ASA and Cisco Mobility Advantage

This chapter describes how to configure the ASA for Cisco Unified Communications Mobility Advantage Proxy features.

- Information about the Cisco Mobility Advantage Proxy Feature, on page 1
- Configuring Cisco Mobility Advantage (CLI), on page 6
- Configuring Cisco Mobility Advantage (ASDM), on page 9
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Information about the Cisco Mobility Advantage Proxy Feature

This section contains the following topics:

- Cisco Mobility Advantage Proxy Functionality
- Mobility Advantage Proxy Deployment Scenarios
- Trust Relationships for Cisco UMA Deployments

Cisco Mobility Advantage Proxy Functionality

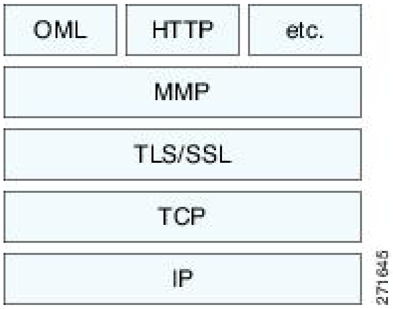
To support Cisco UMA for the Cisco Mobility Advantage solution, the mobility advantage proxy (implemented as a TLS proxy) includes the following functionality:

- The ability to allow no client authentication during the handshake with clients.
- Allowing an imported PKCS-12 certificate to server as a proxy certificate.

The ASA includes an inspection engine to validate the Cisco UMA Mobile Multiplexing Protocol (MMP).

MMP is a data transport protocol for transmitting data entities between Cisco UMA clients and servers. As shown in the following figure, MMP must be run on top of a connection-oriented protocol (the underlying transport) and is intended to be run on top of a secure transport protocol such as TLS. The Orative Markup Language (OML) protocol is intended to be run on top of MMP for the purposes of data synchronization, as well as the HTTP protocol for uploading and downloading large files.

Figure 1: MMP Stack



The TCP/TLS default port is 5443. There are no embedded NAT or secondary connections.

Cisco UMA client and server communications can be proxied via TLS, which decrypts the data, passes it to the inspect MMP module, and re-encrypt the data before forwarding it to the endpoint. The inspect MMP module verifies the integrity of the MMP headers and passes the OML/HTTP to an appropriate handler. The ASA takes the following actions on the MMP headers and data:

- Verifies that client MMP headers are well-formed. Upon detection of a malformed header, the TCP session is terminated.
- Verifies that client to server MMP header lengths are not exceeded. If an MMP header length is exceeded (4096), then the TCP session is terminated.
- Verifies that client to server MMP content lengths are not exceeded. If an entity content length is exceeded (4096), the TCP session is terminated.

Mobility Advantage Proxy Deployment Scenarios

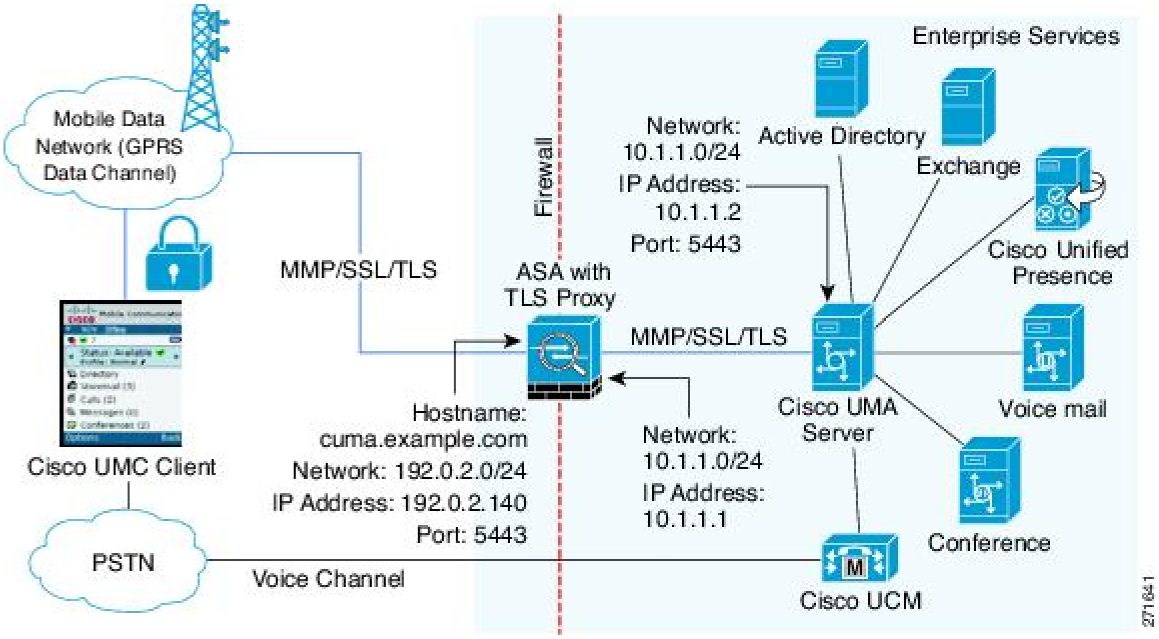
The following figures show the two deployment scenarios for the TLS proxy used by the Cisco Mobility Advantage solution. In scenario 1 (the recommended deployment architecture), the ASA functions as both the firewall and TLS proxy. In scenario 2, the ASA functions as the TLS proxy only and works with an existing firewall. In both scenarios, the clients connect from the Internet.

In the scenario 1 deployment, the ASA is between a Cisco UMA client and a Cisco UMA server. The Cisco UMA client is an executable that is downloaded to each smartphone. The Cisco UMA client applications establishes a data connection, which is a TLS connection, to the corporate Cisco UMA server. The ASA intercepts the connections and inspects the data that the client sends to the Cisco UMA server.

Note The TLS proxy for the Cisco Mobility Advantage solution does not support client authentication because the Cisco UMA client cannot present a certificate. The following commands can be used to disable authentication during the TLS handshake.

```
hostname(config)# tls-proxy my_proxy
hostname(config-tlsp)# no server authenticate-client
```

Figure 2: Security Appliance as Firewall with Mobility Advantage Proxy and MMP Inspection



In the above figure, the ASA performs static NAT by translating the Cisco UMA server 10.1.1.2 IP address to 192.0.2.140.

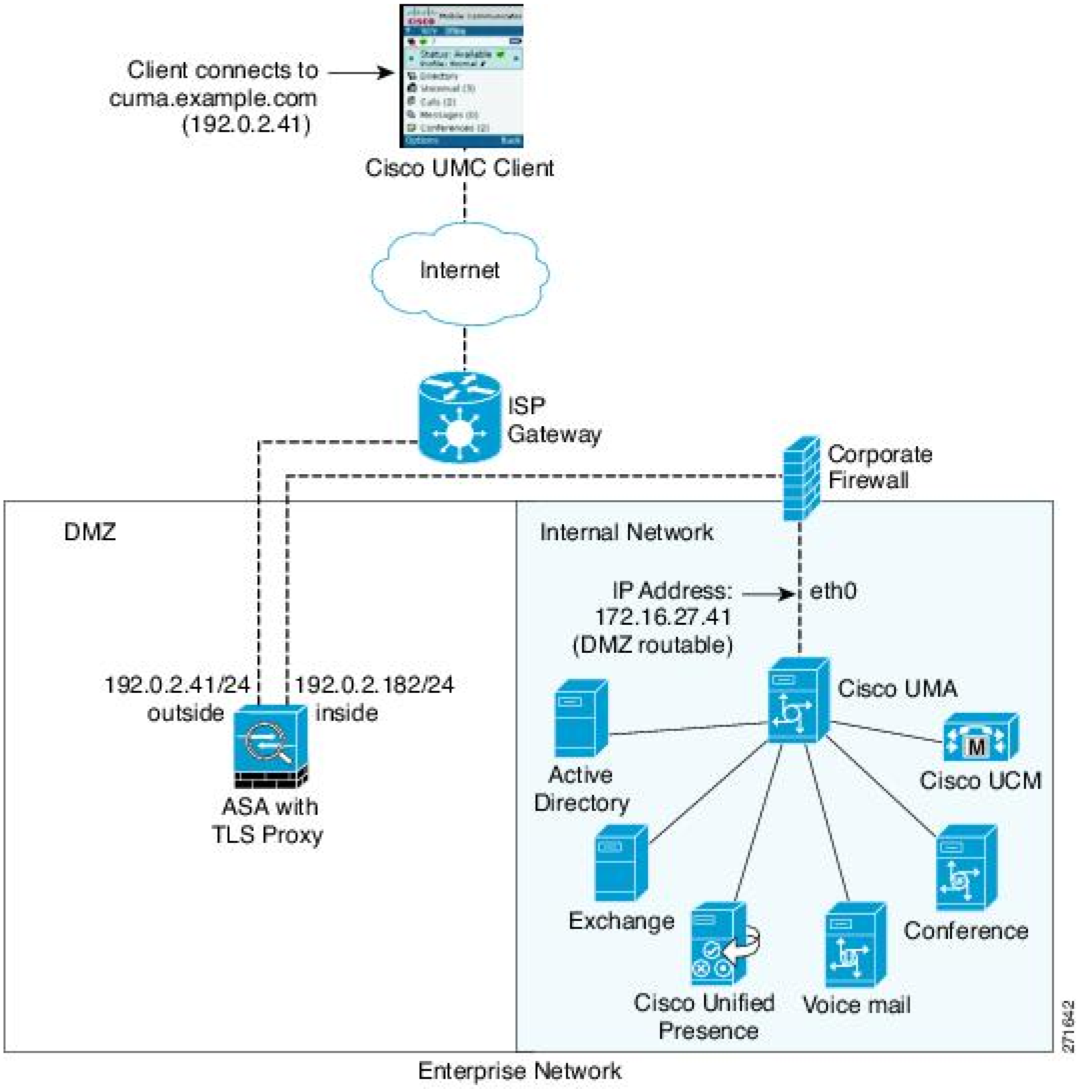
The following figure shows deployment scenario 2, where the ASA functions as the TLS proxy only and does not function as the corporate firewall. In this scenario, the ASA and the corporate firewall are performing NAT. The corporate firewall will not be able to predict which client from the Internet needs to connect to the corporate Cisco UMA server. Therefore, to support this deployment, you can take the following actions:

- Set up a NAT rule for inbound traffic that translates the destination IP address 192.0.2.41 to 172.16.27.41.
- Set up an interface PAT rule for inbound traffic translating the source IP address of every packet so that the corporate firewall does not need to open up a wildcard pinhole. The Cisco UMA server receives packets with the source IP address 192.0.12.183.

```
hostname(config)# object network obj-0.0.0.0-01
hostname(config-network-object)# subnet 0.0.0.0 0.0.0.0
hostname(config-network-object)# nat (outside,inside) dynamic 192.0.2.183
```

Note This interface PAT rule converges the Cisco UMA client IP addresses on the outside interface of the ASA into a single IP address on the inside interface by using different source ports. Performing this action is often referred as “outside PAT”. “Outside PAT” is not recommended when TLS proxy for Cisco Mobility Advantage is enabled on the same interface of the ASA with phone proxy, Cisco Unified Presence, or any other features involving application inspection. “Outside PAT” is not supported completely by application inspection when embedded address translation is needed.

Figure 3: Cisco UMC/Cisco UMA Architecture – Scenario 2: Security Appliance as Mobility Advantage Proxy Only



Mobility Advantage Proxy Using NAT/PAT

In both scenarios, NAT can be used to hide the private address of the Cisco UMA servers.

In scenario 2, PAT can be used to converge all client traffic into one source IP, so that the firewall does not have to open up a wildcard pinhole for inbound traffic.

```
hostname(config)# access-list cumc extended permit tcp any host 172.16.27.41 eq 5443
```

versus

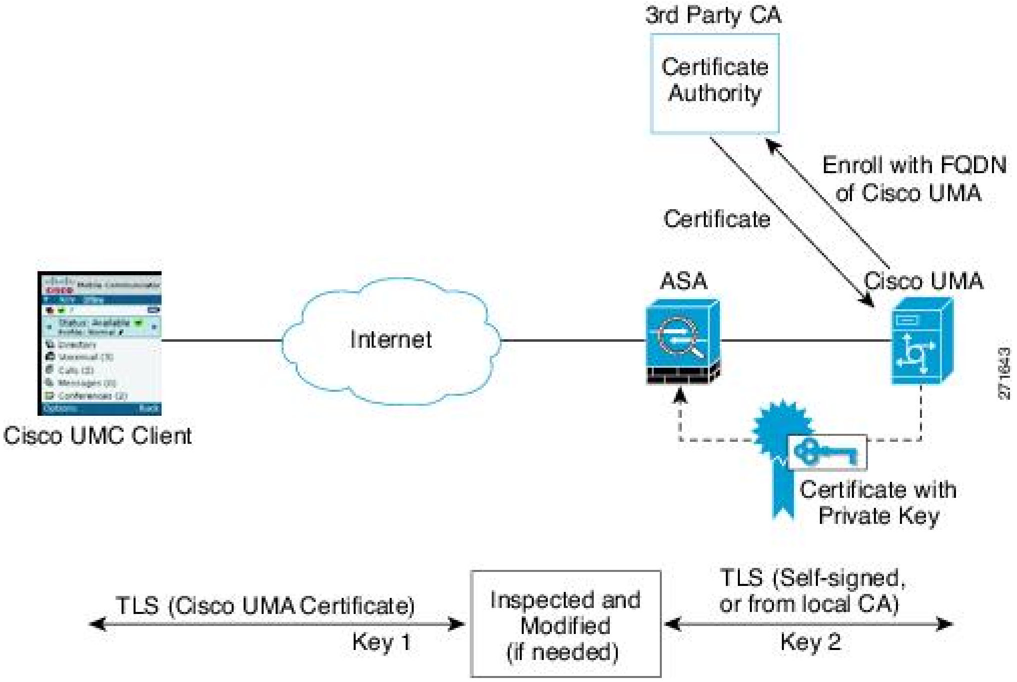
```
hostname(config)# access-list cumc extended permit tcp host 192.0.2.183 host 172.16.27.41
eq 5443
```

Trust Relationships for Cisco UMA Deployments

To establish a trust relationship between the Cisco UMC client and the ASA, the ASA uses the Cisco UMA server certificate and keypair or the ASA obtains a certificate with the Cisco UMA server FQDN (certificate impersonation). Between the ASA and the Cisco UMA server, the ASA and Cisco UMA server use self-signed certificates or certificates issued by a local certificate authority.

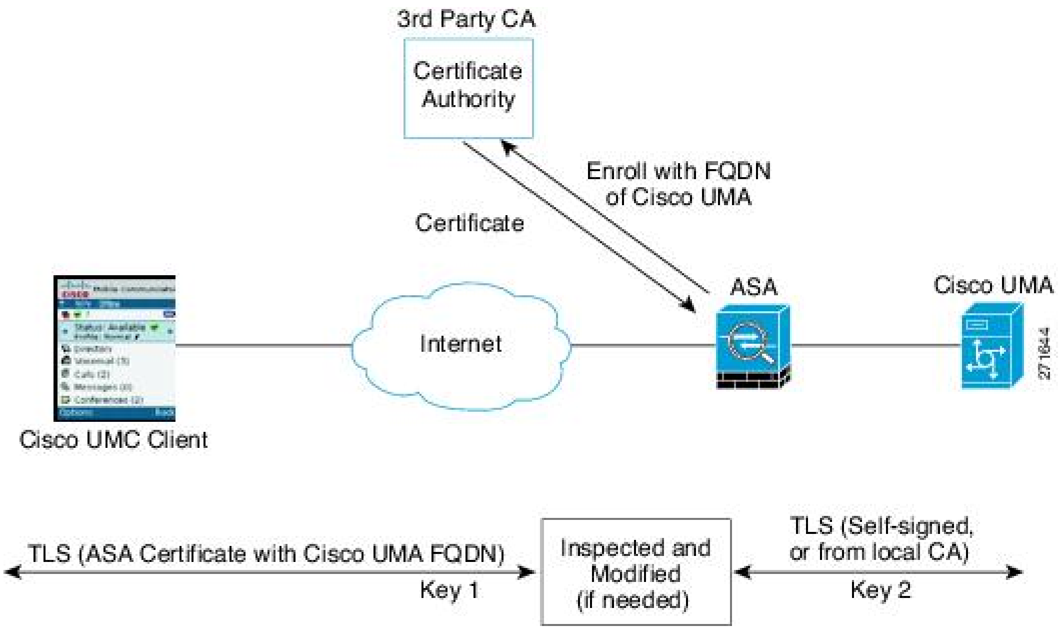
The following figure shows how you can import the Cisco UMA server certificate onto the ASA. When the Cisco UMA server has already enrolled with a third-party CA, you can import the certificate with the private key onto the ASA. Then, the ASA has the full credentials of the Cisco UMA server. When a Cisco UMA client connects to the Cisco UMA server, the ASA intercepts the handshake and uses the Cisco UMA server certificate to perform the handshake with the client. The ASA also performs a handshake with the server.

Figure 4: How the Security Appliance Represents Cisco UMA – Private Key Sharing


3rd Party CA
Certificate Authority
Enroll with FQDN of Cisco UMA
Certificate
ASA
Cisco UMA
Internet
Cisco UMC Client
271643
Certificate with Private Key
TLS (Cisco UMA Certificate)
Key 1
Inspected and Modified (if needed)
TLS (Self-signed, or from local CA)
Key 2

The following figure shows another way to establish the trust relationship. The following figure shows a green field deployment, because each component of the deployment has been newly installed. The ASA enrolls with the third-party CA by using the Cisco UMA server FQDN as if the ASA is the Cisco UMA server. When the Cisco UMA client connects to the ASA, the ASA presents the certificate that has the Cisco UMA server FQDN. The Cisco UMA client believes it is communicating to with the Cisco UMA server.

Figure 5: How the Security Appliance Represents Cisco UMA – Certificate Impersonation


3rd Party CA
Certificate Authority
Enroll with FQDN of Cisco UMA
Certificate
ASA
Cisco UMA
Internet
Cisco UMC Client
271644
TLS (ASA Certificate with Cisco UMA FQDN)
Key 1
Inspected and Modified (if needed)
TLS (Self-signed, or from local CA)
Key 2

A trusted relationship between the ASA and the Cisco UMA server can be established with self-signed certificates. The ASA's identity certificate is exported, and then uploaded on the Cisco UMA server truststore. The Cisco UMA server certificate is downloaded, and then uploaded on the ASA truststore by creating a trustpoint and using the **crypto ca authenticate** command.

Configuring Cisco Mobility Advantage (CLI)

This section includes the following topics:

Task Flow for Configuring Cisco Mobility Advantage

To configure for the ASA to perform TLS proxy and MMP inspection, perform the following tasks.

It is assumed that self-signed certificates are used between the ASA and the Cisco UMA server.

Before you begin

Export the Cisco UMA server certificate and keypair in PKCS-12 format so that you can import it onto the ASA. The certificate will be used during the handshake with the Cisco UMA clients.

Step 1 Create the static NAT for the Cisco UMA server by entering the following commands:

```
hostname(config)# object network name
hostname(config-network-object)# host real_ip
hostname(config-network-object)# nat (real_ifc,mapped_ifc) static mapped_ip
```

Step 2 Import the Cisco UMA server certificate onto the ASA by entering the following commands:

```
hostname(config)# crypto ca import trustpoint pkcs12 passphrase [paste base 64 encoded pkcs12]
hostname(config)# quit
hostname(config)# crypto ca import trustpoint pkcs12 passphrase [paste base 64 encoded pkcs12]
hostname(config)# quit
```

Step 3 Install the Cisco UMA server certificate on the ASA. See Installing the Cisco UMA Server Certificate.

Step 4 Create the TLS proxy instance for the Cisco UMA clients connecting to the Cisco UMA server. See Creating the TLS Proxy Instance.

Step 5 Enable the TLS proxy for MMP inspection. See Enabling the TLS Proxy for MMP Inspection.

Installing the Cisco UMA Server Certificate

Install the Cisco UMA server self-signed certificate in the ASA truststore. This task is necessary for the ASA to authenticate the Cisco UMA server during the handshake between the ASA proxy and Cisco UMA server.

Before you begin

Export the Cisco UMA server certificate and keypair in PKCS-12 format so that you can import it onto the ASA.

Procedure

	Command or Action	Purpose

Step 1	`hostname(config)# crypto ca trustpoint trustpoint_name`
	Example:
	`hostname(config)# crypto ca trustpoint cuma_server`
		Enters the trustpoint configuration mode for the specified trustpoint so that you can create the trustpoint for the Cisco UMA server.
		A trustpoint represents a CA identity and possibly a device identity, based on a certificate issued by the CA.

Step 2	`hostname(config-ca-trustpoint)# enrollment terminal`	Specifies cut and paste enrollment with this trustpoint (also known as manual enrollment).
Step 3	`hostname(config-ca-trustpoint)# exit`	Exits from the CA Trustpoint configuration mode.

Step 4	`hostname(config)# crypto ca authenticate trustpoint`
	Example:
	`hostname(config)# crypto ca authenticate cuma_server`
	`Enter the base 64 encoded CA certificate.`
	`End with a blank line or the word "quit" on a line by itself`
	`[ certificate data omitted ]`
	`Certificate has the following attributes:`
	`Fingerprint: 21B598D5 4A81F3E5 0B24D12E 3F89C2E4`
	`% Do you accept this certificate? [yes/no]: yes`
	`Trustpoint CA certificate accepted.`
	`% Certificate successfully imported`
	`hostname(config)#`
		Installs and authenticates the CA certificates associated with a trustpoint created for the Cisco UMA server.
		Where *trustpoint* specifies the trustpoint from which to obtain the CA certificate. Maximum name length is 128 characters.
		The ASA prompts you to paste the base-64 formatted CA certificate onto the terminal.

What to do next

Once you have created the trustpoints and installed the Cisco UMA certificate on the ASA, create the TLS proxy instance. SeeCreating the TLS Proxy Instance.

Creating the TLS Proxy Instance

Create a TLS proxy instance for the Cisco UMA clients connecting to the Cisco UMA server.

Before you begin

Before you can create the TLS proxy instance, you must have installed the Cisco UMA server self-signed certificate in the ASA truststore.

Procedure

	Command or Action	Purpose

Step 1	`hostname(config)# tls-proxy proxy_name`
	Example:
	`tls-proxy cuma_tlsproxy`
		Creates the TLS proxy instance.

Step 2	`hostname(config-tlsp)# server trust-point proxy_name`
	Example:
	`hostname(config-tlsp)# server trust-point cuma_proxy`
		Specifies the proxy trustpoint certificate presented during TLS handshake.
		The certificate must be owned by the ASA (identity certificate).

Step 3	`hostname(config-tlsp)# client trust-point proxy_name`
	Example:
	`hostname(config-tlsp)# client trust-point cuma_proxy`
		Specifies the trustpoint and associated certificate that the ASA uses in the TLS handshake when the ASA assumes the role of the TLS client.
		The certificate must be owned by the ASA (identity certificate).

Step 4	`hostname(config-tlsp)# no server authenticate-client`	Disables client authentication. Disabling TLS client authentication is required when the ASA must interoperate with a Cisco UMA client or clients such as a Web browser that are incapable of sending a client certificate.

Step 5	`hostname(config-tlsp)# client cipher-suite cipher_suite`
	Example:
	`hostname(config-tlsp)# client cipher-suite aes128-sha1 aes256-sha1`
		Specifies cipher suite configuration.
		For client proxy (the proxy acts as a TLS client to the server), the user-defined cipher suite replaces the default cipher suite.

What to do next

Once you have created the TLS proxy instance, enable it for MMP inspection. See Enabling the TLS Proxy for MMP Inspection.

Enabling the TLS Proxy for MMP Inspection

Cisco UMA client and server communications can be proxied via TLS, which decrypts the data, passes it to the inspect MMP module, and re-encrypt the data before forwarding it to the endpoint. The inspect MMP module verifies the integrity of the MMP headers and passes the OML/HTTP to an appropriate handler.

Procedure

	Command or Action	Purpose

Step 1	`hostname(config)# class-map class_map_name`
	Example:
	`hostname(config)# class-map cuma_tlsproxy`
		Configures the class of traffic to inspect. Traffic between the Cisco UMA server and client uses MMP and is handled by MMP inspection.
		Where *class_map_name* is the name of the MMP class map.

Step 2	`hostname(config-cmap)# match port tcp eq port`
	Example:
	`hostname(config-cmap)# match port tcp eq 5443`
		Matches the TCP port to which you want to apply actions for MMP inspection.
		The TCP/TLS default port for MMP inspection is 5443.

Step 3	`hostname(config-cmap)# exit`	Exits from the Class Map configuration mode.

Step 4	`hostname(config)# policy-map name`
	Example:
	`hostname(config)# policy-map global_policy`
		Configures the policy map and attaches the action to the class of traffic.

Step 5	`hostname(config-pmap)# class classmap-name`
	Example:
	`hostname(config-pmap)# class cuma_proxy`
		Assigns a class map to the policy map so that you can assign actions to the class map traffic.
		Where *classmap_name* is the name of the MMP class map.

Step 6	`hostname(config-pmap)# inspect mmp tls-proxy proxy_name`
	Example:
	`hostname(config-pmap)# inspect mmp tls-proxy cuma_proxy`
		Enables MMP application inspection using the TLS proxy.

Step 7	`hostname(config-pmap)# exit`	Exits from the Policy Map configuration mode.

Step 8	`hostname(config)# service-policy policy_map_name global`
	Example:
	`service-policy global_policy global`
		Enables the service policy on all interfaces.

Configuring Cisco Mobility Advantage (ASDM)

To configure the Cisco Mobility Advantage Proxy by using ASDM, choose **Wizards** > **Unified Communications Wizard** from the menu. From the first page, select the Cisco Mobility Advantage Proxy option under the Remote Access section.

The wizard automatically creates the necessary TLS proxy, then guides you through creating the Unified Presence Proxy instance, importing and installing the required certificates, and finally enables the MMP inspection for the Mobility Advantage traffic automatically.

When using the wizard to create the Mobility Advantage proxy, ASDM automatically generates address translation (NAT) statements, and creates the access rules that are necessary to allow traffic between the Cisco Mobility Advantage server and the mobility clients.

The following steps provide the high-level overview for configuring the Mobility Advantage proxy:

Step 1 Specify settings to define the private and public network topology, such the public and private network interfaces, and the IP addresses of the Cisco Mobility Advantage server. See Configuring the Topology for the Cisco Mobility Advantage Proxy.

Step 2 Configure the certificates that are exchanged between the Cisco Mobility Advantage server and the ASA. SeeConfiguring the Server-Side Certificates for the Cisco Mobility Advantage Proxy.

Step 3 Configure the client-side certificate management, namely the certificates that are exchanged between the Unified Mobile Communicator clients and the ASA. See Configuring the Client-Side Certificates for the Cisco Mobility Advantage Proxy.

The wizard completes by displaying a summary of the configuration created for Mobility Advantage Proxy.

Configuring the Topology for the Cisco Mobility Advantage Proxy

When configuring the Mobility Advantage Proxy, you specify settings to define the private and public network topology, such the private and public network interfaces, and the private and public IP addresses of the Cisco Mobility Advantage server.

The values that you specify in this page generate the following configuration settings for the Mobility Advantage Proxy:

- Static PAT for the Cisco Mobility Advantage server
- Static NAT for Cisco Unified Mobile Communicator clients if the Enable address translation for Mobility clients check box is checked.
- ACLs to allow Cisco Unified Mobile Communicator clients to access the Cisco Mobility Advantage server

Step 1 In the Private Network area, choose the interface from the drop-down list.

Step 2 In the Unified MA Server area, enter the private and public IP address for the Cisco Mobility Advantage server. Entering ports for these IP addresses is optional. By default port number 5443 is entered, which is the default TCP port for MMP inspection.

Step 3 In the FQDN field, enter the domain name for the Cisco Mobility Advantage server. This domain name is included in the certificate signing request that you generate later in this wizard.

Step 4 In the Public Network area, choose an interface from the drop-down list. The proxy uses this interface for configuring static PAT for the Cisco Mobility Advantage server and the ACLs to allow Cisco Unified Mobile Communicator clients to access the Cisco Mobility Advantage server.

Step 5 **To configure whether address translation (NAT) is used by** Cisco Unified Mobile Communicator clients, check the **Enable address translation for Mobility clients** check box and choose whether to use the IP address of the public interface or whether to enter an IP address.

Step 6 Click **Next**.

Configuring the Server-Side Certificates for the Cisco Mobility Advantage Proxy

A trusted relationship between the ASA and the Cisco UMA server can be established with self-signed certificates. The ASA's identity certificate is exported, and then uploaded on the Cisco UMA server truststore. The Cisco UMA server certificate is downloaded, and then uploaded on the ASA truststore.

The supports using self-signed certificates only at this step.

Step 1 In the ASA's Identity Certificate area, click **Generate and Export ASA's Identity Certificate**.

An information dialog boxes appear indicating that the enrollment seceded. In the Enrollment Status dialog box, click **OK**. The Export certificate dialog box appears.

Note

- If an identity certificate for the ASA has already been created, the button in this area appears as **Export ASA's Identity Certificate** and the Export certificate dialog box immediately appears.
- When using the wizard to configure the Cisco Mobility Advantage proxy, the wizard only supports installing self-signed certificates.

Step 2 Export the identity certificate generated by the wizard for the ASA.

You must install this certificate into the Cisco Mobility Advantage server.

Step 3 In the Unified MA Server's Certificate area, click **Install Unified MA Server's Certificate**. The Install Certificate dialog appears. Either select the certificate file, or paste the certificate contents into the dialog box.

See the Cisco Mobility Advantage server documentation for information on how to export the certificate for this server.

Step 4 Click **Next**.

Configuring the Client-Side Certificates for the Cisco Mobility Advantage Proxy

To establish a trust relationship between the Cisco Unified Mobile Communicator (UMC) clients and the ASA, the ASA uses a CA-signed certificate that is configured with the Cisco Mobility Advantage server's FQDN (also referred to as certificate impersonation).

In the Client-Side Certificate Management page, you enter both the intermediate CA certificate (if applicable, as in the cases of Verisign) and the signed ASA identity certificate.

Step 1 In the ASA's Identity Certificate area, click **Generate CSR**. The CSR parameters dialog box appears. If the ASA already has a signed identity certificate, you can skip this step.

This certificate is presented to Unified Mobile Communicator clients. When configuring the certificate:

- Choose a key size that provides sufficient security. Your CA might have a minimum key size requirement.
- The wizard provides the common name (CN), which is the FQDN of the Cisco Mobility Advantage server.
- Add additional DNs as appropriate.

Information dialog boxes appear indicating that the wizard is delivering the settings to the ASA and retrieving the certificate key pair information. The Identity Certificate Request dialog box appears. Save the certificate to a file and submit it to the CA for signing.

Step 2 Click **Install ASA's Identity Certificate**. Install the certificate. See Installing the ASA Identity Certificate on the Mobility Advantage Server.

Step 3 Click **Install Root CA's Certificate**. The Install Certificate dialog box appears. Select the certificate file and install it.

Step 4 Click **Next**.

The wizard completes by displaying a summary of the configuration created for Mobility Advantage Proxy.

Installing the ASA Identity Certificate on the Mobility Advantage Server

When configuring certificates for the Cisco Mobility Advantage Proxy, you must install the ASA identity certificate on the Cisco Mobility Advantage server.

Typically, a certificate authority returns two certificates: your signed identity certificate and the certificate authority's certificate (referred to as the root certificate). However, some certificate authorities (for example, VeriSign) might also send you an intermediate certificate.

The root certificate from the certificate authority is used to sign other certificates. The root certificate is used by the ASA to authenticate your signed identity certificate received from the certificate authority.

If the certificate authority provided an intermediate certificate, you must enter the certificate text in the Intermediate Certificate (If Applicable) area of the Install ASA's Identity Certificate dialog box.

For the Cisco Mobility Advantage Proxy, you install the root certificate in another dialog box.

Step 1 In the Intermediate Certificate (If Applicable) area, perform on of the following actions:

- To add a certificate configuration from an existing file, click the **Install from a file** radio button (this is the default setting). Enter the path and file name, or click **Browse** to search for the file. Then click **Install Certificate**.
- To enroll manually, click the **Paste the certificate data in base-64 format** radio button. Copy and paste the PEM format (base64 or hexadecimal) certificate into the area provided.

Step 2 In the ASA's Identity Certificate area, perform on of the following actions:

- To add a certificate configuration from an existing file, click the **Install from a file** radio button (this is the default setting). Enter the path and file name, or click **Browse** to search for the file. Then click Install Certificate.

  To enroll manually, click the **Paste the certificate data in base-64 format** radio button. Copy and paste the PEM format (base64 or hexadecimal) certificate into the area provided.

Step 3 Click **Install Certificate**.

Monitoring for Cisco Mobility Advantage

Mobility advantage proxy can be debugged the same way as IP Telephony. You can enable TLS proxy debug flags along with SSL syslogs to debug TLS proxy connection problems.

For example, using the following commands to enable TLS proxy-related debugging and syslog output only:

```
hostname# debug inspect tls-proxy events
hostname# debug inspect tls-proxy errors
hostname# config terminal
hostname(config)# logging enable
hostname(config)# logging timestamp
hostname(config)# logging list loglist message 711001
hostname(config)# logging list loglist message 725001-725014
hostname(config)# logging list loglist message 717001-717038
hostname(config)# logging buffer-size 1000000
hostname(config)# logging buffered loglist
hostname(config)# logging debug-trace
```

For information about TLS proxy debugging techniques and sample output, see the Monitoring the TLS Proxy.

Enable the **debug mmp** command for MMP inspection engine debugging:

```
MMP:: received 60 bytes from outside:1.1.1.1/2000 to inside:2.2.2.2/5443
MMP:: version OLWP-2.0
MMP:: forward 60/60 bytes from outside:1.1.1.1/2000 to inside:2.2.2.2/5443
MMP:: received 100 bytes from inside:2.2.2.2/5443 to outside:1.1.1.1/2000
MMP:: session-id: ABCD_1234
MMP:: status: 201
MMP:: forward 100/100 bytes from inside:2.2.2.2/5443 to outside 1.1.1.1/2000
MMP:: received 80 bytes from outside:1.1.1.1/2000 to inside:2.2.2.2/5443
MMP:: content-type: http/1.1
MMP:: content-length: 40
```

You can also capture the raw and decrypted data by the TLS proxy by entering the following commands:

```
hostname# capture mycap interface outside (capturing raw packets)
hostname# capture mycap-dec type tls-proxy interface outside (capturing decrypted data)
hostname# show capture capture_name
hostname# copy /pcap capture:capture_name tftp://tftp_location
```

Configuration Examples for Cisco Mobility Advantage

- Example 1: Cisco UMC/Cisco UMA Architecture – Security Appliance as Firewall with TLS Proxy and MMP Inspection

  Example 2: Cisco UMC/Cisco UMA Architecture – Security Appliance as TLS Proxy Only

This section describes sample configurations that apply to two deployment scenarios for the TLS proxy used by the Cisco Mobility Advantage solution—scenario 1 where the ASA functions as both the firewall and TLS proxy and scenario 2 where the ASA functions as the TLS proxy only. In both scenarios, the clients connect from the Internet.

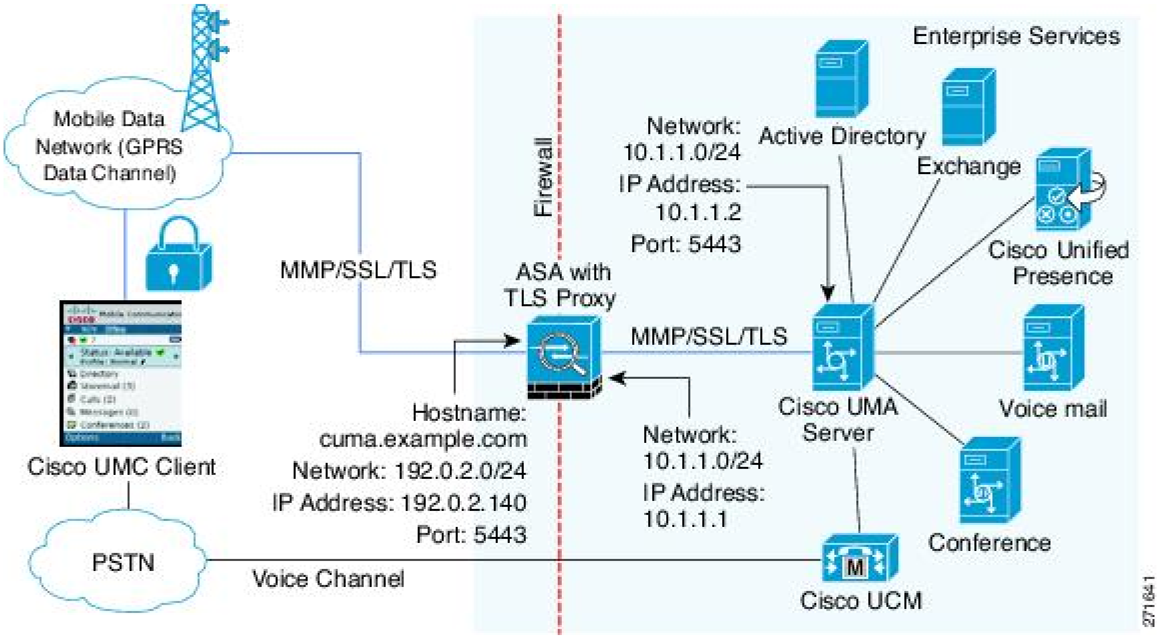
In the samples, you export the Cisco UMA server certificate and key-pair in PKCS-12 format and import it to the ASA. The certificate will be used during handshake with the Cisco UMA clients.

Installing the Cisco UMA server self-signed certificate in the ASA truststore is necessary for the ASA to authenticate the Cisco UMA server during handshake between the ASA proxy and Cisco UMA server. You create a TLS proxy instance for the Cisco UMA clients connecting to the Cisco UMA server. Lastly, you must enable TLS proxy for MMP inspection.

Example 1: Cisco UMC/Cisco UMA Architecture – Security Appliance as Firewall with TLS Proxy and MMP Inspection

As shown in the following figure, the ASA functions as both the firewall and TLS proxy. In the scenario 1 deployment, the ASA is between a Cisco UMA client and a Cisco UMA server. In this scenario, the ASA performs static NAT by translating the Cisco UMA server 10.1.1.2 IP address to 192.0.2.140.

Figure 6: Cisco UMC/Cisco UMA Architecture – Scenario 1: Security Appliance as Firewall with TLS Proxy and MMP Inspection



```
object network obj-10.1.1.2-01
host 10.1.1.2
nat (inside,outside) static 192.0.2.140
crypto ca import cuma_proxy pkcs12 sample_passphrase
<cut-paste base 64 encoded pkcs12 here>
quit
! for CUMA server’s self-signed certificate
crypto ca trustpoint cuma_server
enrollment terminal
crypto ca authenticate cuma_server
Enter the base 64 encoded CA certificate.
End with a blank line or the word "quit" on a line by itself
MIIDRTCCAu+gAwIBAgIQKVcqP/KW74VP0NZzL+JbRTANBgkqhkiG9w0BAQUFADCB
[ certificate data omitted ]
/7QEM8izy0EOTSErKu7Nd76jwf5e4qttkQ==
quit
tls-proxy cuma_proxy
server trust-point cuma_proxy
no server authenticate-client
client cipher-suite aes128-sha1 aes256-sha1
```

```
class-map cuma_proxy
match port tcp eq 5443
policy-map global_policy
class cuma_proxy
inspect mmp tls-proxy cuma_proxy
service-policy global_policy global
```

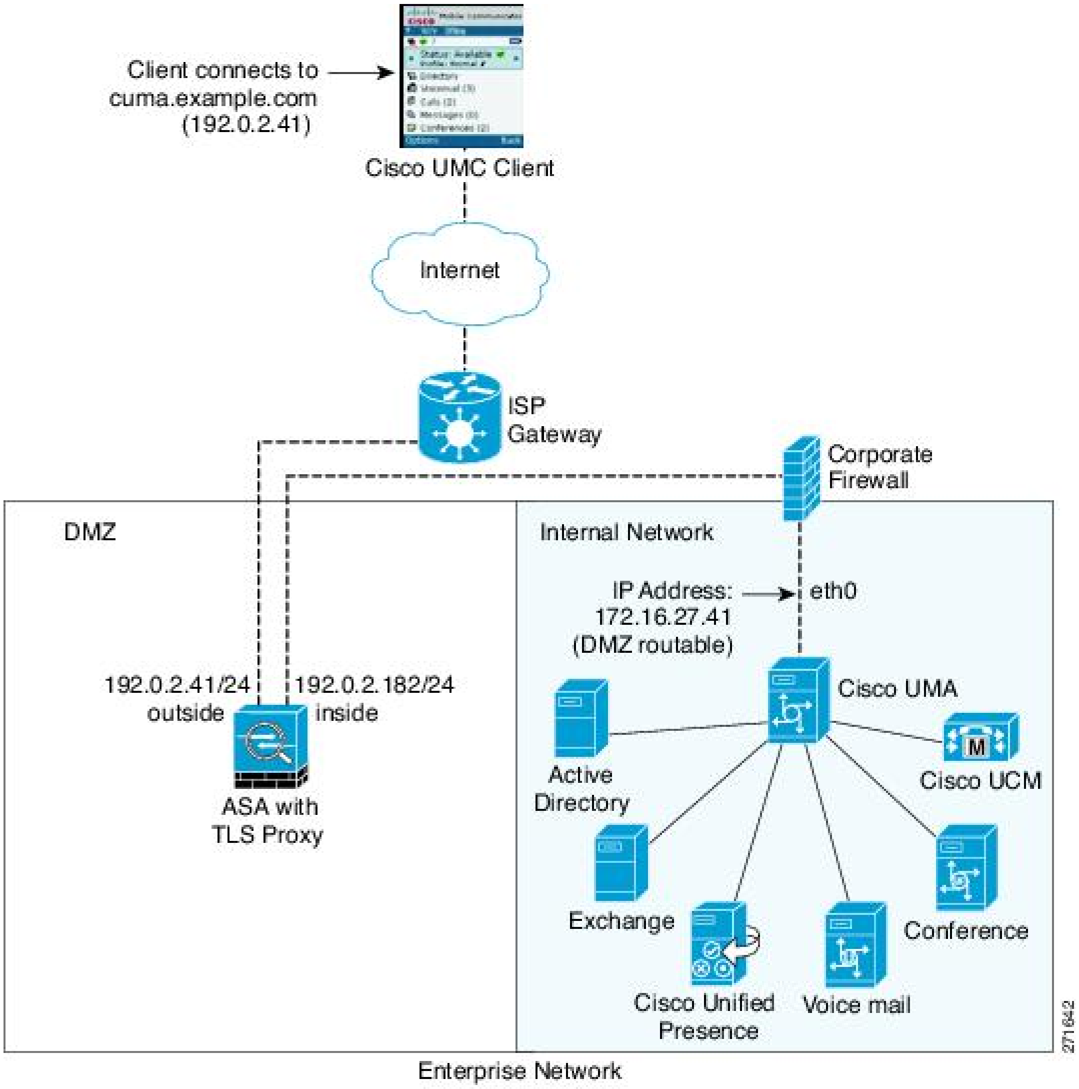
Example 2: Cisco UMC/Cisco UMA Architecture – Security Appliance as TLS Proxy Only

As shown in the following figure (scenario 2), the ASA functions as the TLS proxy only and works with an existing firewall. The ASA and the corporate firewall are performing NAT. The corporate firewall will not be able to predict which client from the Internet needs to connect to the corporate Cisco UMA server. Therefore, to support this deployment, you can take the following actions:

- Set up a NAT rule for inbound traffic that translates the destination IP address 192.0.2.41 to 172.16.27.41.
- Set up an interface PAT rule for inbound traffic translating the source IP address of every packet so that the corporate firewall does not need to open up a wildcard pinhole. The Cisco UMA server receives packets with the source IP address 192.0.2.183.

```
hostname(config)# object network obj-0.0.0.0-01
hostname(config-network-object)# subnet 0.0.0.0 0.0.0.0
hostname(config-network-object)# nat (outside,inside) dynamic 192.0.2.183
```

Figure 7: Cisco UMC/Cisco UMA Architecture – Scenario 2: Security Appliance as TLS Proxy Only



```
object network obj-172.16.27.41-01
host 172.16.27.41
nat (inside,outside) static 192.0.2.140
object network obj-0.0.0.0-01
subnet 0.0.0.0 0.0.0.0
nat (outside,inside) dynamic 192.0.2.183
crypto ca import cuma_proxy pkcs12 sample_passphrase
<cut-paste base 64 encoded pkcs12 here>
quit
! for CUMA server’s self-signed certificate
crypto ca trustpoint cuma_server
enrollment terminal
crypto ca authenticate cuma_server
Enter the base 64 encoded CA certificate.
End with a blank line or the word "quit" on a line by itself
MIIDRTCCAu+gAwIBAgIQKVcqP/KW74VP0NZzL+JbRTANBgkqhkiG9w0BAQUFADCB
[ certificate data omitted ]
/7QEM8izy0EOTSErKu7Nd76jwf5e4qttkQ==
quit
```

```
tls-proxy cuma_proxy
server trust-point cuma_proxy
no server authenticate-client
client cipher-suite aes128-sha1 aes256-sha1
class-map cuma_proxy
match port tcp eq 5443
policy-map global_policy
class cuma_proxy
inspect mmp tls-proxy cuma_proxy
service-policy global_policy global
```

Feature History for Cisco Mobility Advantage

The following table lists the release history for this feature.

Table 1: Feature History for Cisco Phone Proxy

Feature Name	Releases	Feature Information
Cisco Mobility Advantage Proxy	8.0(4)	The Cisco Mobility Advantage Proxy feature was introduced.
Cisco Mobility Advantage Proxy	8.3(1)	The Unified Communications Wizard was added to ASDM. By using the wizard, you can configure the Cisco Mobility Advantage Proxy.
SIP, SCCP, and TLS Proxy support for IPv6	9.3(1)	You can now inspect IPv6 traffic when using SIP, SCCP, and TLS Proxy (using SIP or SCCP). We did not modify any commands. We did not modify any ASDM screens.
Support for Cisco Unified Communications Manager 8.6	9.3(1)	The ASA now interoperates with Cisco Unified Communications Manager Version 8.6 (including SCCPv21 support). We did not modify any commands. We did not modify any ASDM screens.