Prerequisites

Make sure you have the following prerequisites completed:

- Determine what the FQDN will be and what virtual IP Address will be used.
- Add the FQDN and virtual IP into your company's DNS.
- Create and/or import the certificate chain (Root/Intermediate CA and SSL server certificate with private key) that will be used for securing App Volumes network traffic.

  Note: These instructions ***do not*** cover creating, importing, and/or chaining certificates for App Volumes Manager servers.

Certificates – things to consider:

- The certificate should contain the FQDN that will be used for load balancing App Volumes agents and manager access.
- You can leave the default certificates on the App Volumes Manager servers - BIG-IP handles all the server-side SSL translations, even with the self-signed certificates created on the App Volumes servers.
- A standard, 2048-bit Web Server SSL Certificate (with private key) will work well with the BIG-IP.
- Make sure you import the entire certificate chain to the BIG-IP - including the Root CA and Intermediate CA Certificates and the web server certificate with the private key.

Creating Profiles

Before creating the Virtual Server, we will create specific profiles to control any specific settings needed for load balancing App Volumes Agent and Manager traffic.

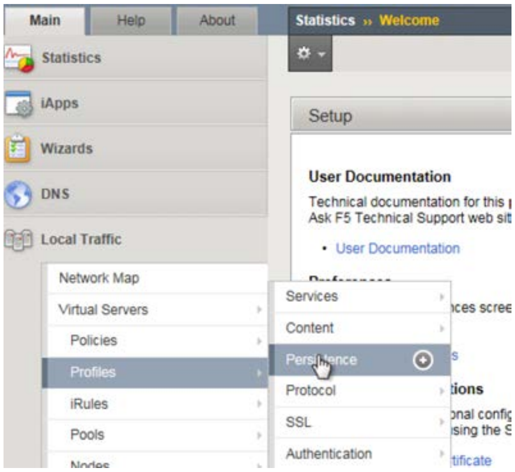
These instructions will focus on creating the following:

- SSL Client profile
- SSL Server profile
- Cookie Persistence profile
- HTTP Profile

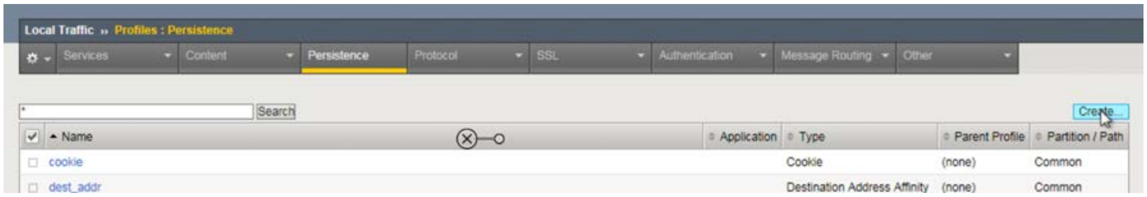
Note: F5's OneConnect (connection pooling) will not be covered in this document. In most cases, the App Volume agent and manager connections are short-lived and infrequent (service startup/shutdown and logon/logoff events) and may not benefit from OneConnect.

Creating the App Volumes Cookie Persistence Profile

1. On the BIG-IP - click Local Traffic. Under Virtual Servers, click Profiles, Persistence.



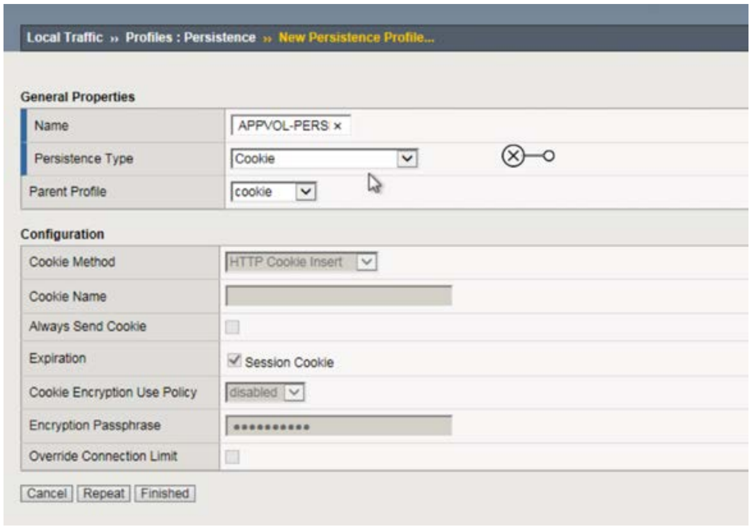
2. Click Create.



☑	▲ Name	Application	Type	Parent Profile	Partition / Path
□	cookie		Cookie	(none)	Common
□	dest_addr		Destination Address Affinity	(none)	Common

3. Complete the following:

- Type the name of the persistence profile (this example – name is APPVOL-PERSIST).
- Select Cookie as the Persistence Type.
- Select Cooke (lower case) as the parent persistence profile that will be used.
- Leave all remaining values as default.
- Click Finish when completed.


Local Traffic » Profiles : Persistence » New Persistence Profile...
Cancel
Repeat
Finished

General Properties

Name	APPVOL-PERS
Persistence Type	Cookie
Parent Profile	cookie

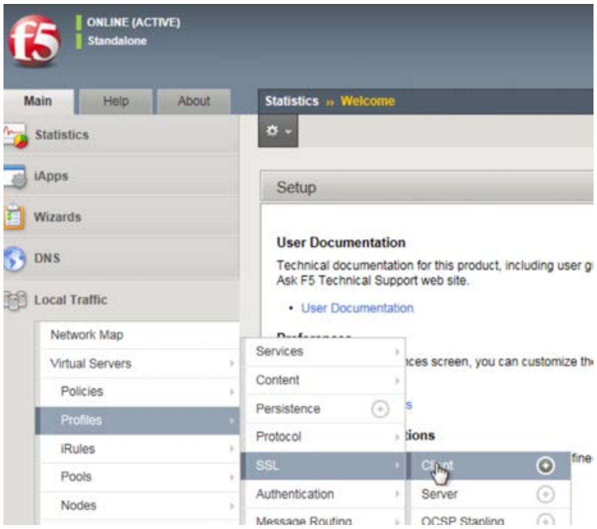
Configuration

Cookie Method	HTTP Cookie Insert
Cookie Name	
Always Send Cookie	□
Expiration	☑ Session Cookie
Cookie Encryption Use Policy	disabled
Encryption Passphrase	••••••••••
Override Connection Limit	□

Creating the App Volumes SSL Client Profile

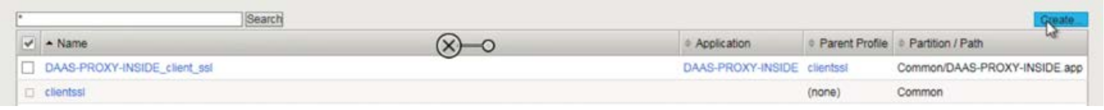
Note: Prior to completing this step – the SSL Certificate (and Intermediate/Root CA's) must be imported.

1. On the BIG-IP - click Local Traffic. Under Virtual Servers, click Profiles, SSL, Client.



Technical documentation for this product, including user g
Ask F5 Technical Support web site.

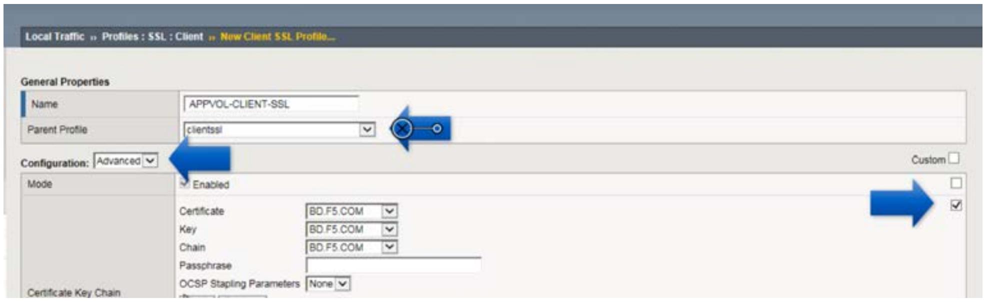
2. Click Create.



☑	▲ Name	Application	Parent Profile	Partition / Path
□	DAAS-PROXY-INSIDE_client_ssl	DAAS-PROXY-INSIDE	clientssl	Common/DAAS-PROXY-INSIDE.app
□	clientssl		(none)	Common

3. Complete the following:

- Type the name of the SSL Client profile (this example – name is APPVOL-CLIENT-SSL).
- Select "clientssl" as the parent profile.
- Change the configuration to "Advanced".
- On the right side of the screen, check the "Custom" box in the Certificate Key Chain section.



Local Traffic » Profiles : SSL : Client » New Client SSL Profile...

General Properties

Name: APPVOL-CLIENT-SSL

Parent Profile: clientssl

Configuration: Advanced

Custom □

Mode: ☑ Enabled □

Certificate Key Chain ☑

Certificate: BD.F5.COM

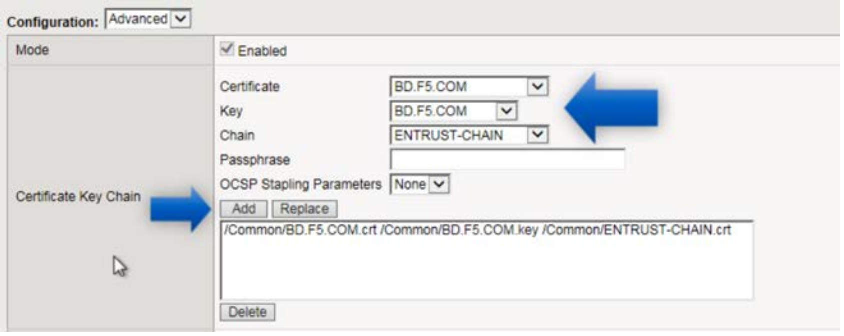
Key: BD.F5.COM

Chain: BD.F5.COM

Passphrase:

OCSP Stapling Parameters: None

- Select the Certificate, Key and Certificate Authority/Intermediate Certificate Chain that was previously imported to the BIG-IP and will be used for App Volumes.


Configuration: Advanced

Mode: ☑ Enabled

Certificate Key Chain

Certificate: BD.F5.COM
Key: BD.F5.COM
Chain: ENTRUST-CHAIN
Passphrase:
OCSP Stapling Parameters: None

/Common/BD.F5.COM.crt /Common/BD.F5.COM.key /Common/ENTRUST-CHAIN.crt

- Once the Certificate, Key and Chain are selected, click the Add button. You will see the certificate information appear in the box below the Add button. (Note in our example we are using a wildcard SSL certificate and an Entrust intermediate certificate as the chain certificate.

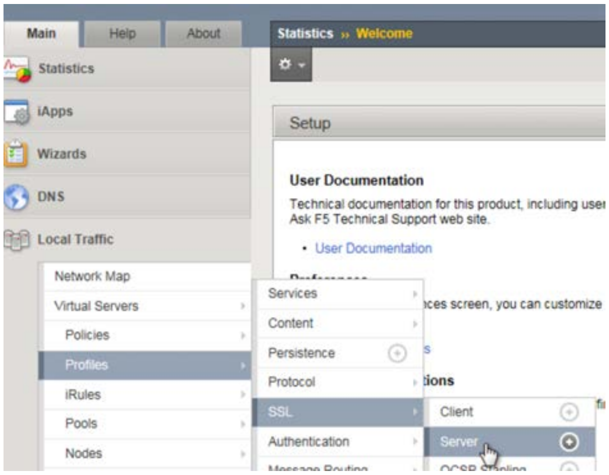
- Leave the remaining options using the default/existing settings.

4. Click Finish.

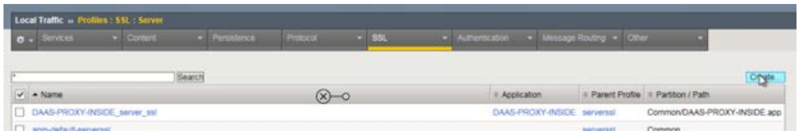
Creating the App Volumes SSL Server Profile

Note: Prior to completing this step – the SSL Certificate (and Intermediate/Root CA's) must be imported.

1. On the BIG-IP - click Local Traffic, Virtual Servers, Profiles, SSL, Server.



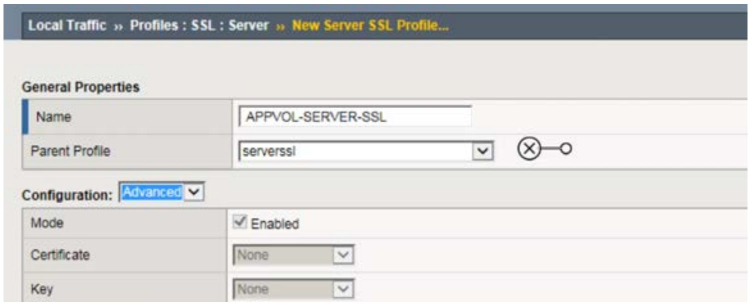
2. Click Create.



☑	Name	Application	Parent Profile	Partition / Path
□	DAAS-PROXY-INSIDE_server_ssl	DAAS-PROXY-INSIDE	serverssl	Common/DAAS-PROXY-INSIDE.app
□	apm-default-serverssl		serverssl	Common

3. Complete the following:

    - Type the name of the SSL Server profile (this example – name is APPVOL-SERVER-SSL).
    - Select “serverssl” as the parent profile.



Local Traffic » Profiles : SSL : Server » New Server SSL Profile...

General Properties

Name	APPVOL-SERVER-SSL
Parent Profile	serverssl

Configuration: Advanced

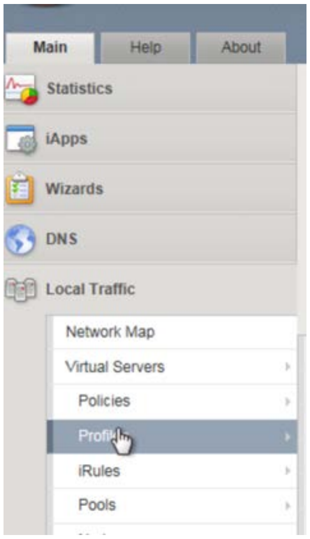
Mode	☑ Enabled
Certificate	None
Key	None

    - Leave the remaining options using the default/existing settings.

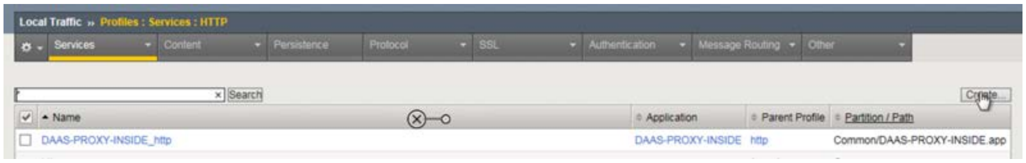
4. Scroll down to the bottom, and then click Finish.

Creating the App Volumes HTTP Profile

1. On the BIG-IP - click Local Traffic. Under Virtual Servers, click Profiles.



2. Ensure you are on the Local Traffic: Profiles: Services: HTTP Screen. Click Create.



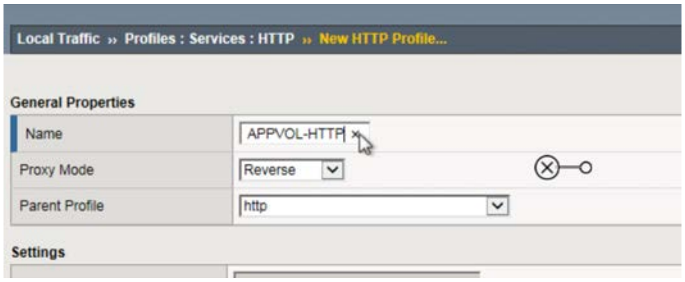
Local Traffic » Profiles : Services : HTTP

☑	Name	Application	Parent Profile	Partition / Path
□	DAAS-PROXY-INSIDE_http	DAAS-PROXY-INSIDE	http	Common/DAAS-PROXY-INSIDE.app

3. Complete the following:

    - Type the name of the HTTP profile (this example – name is APPVOL-HTTP-PROFILE).

- Select “http” as the parent profile.
- Select “Reverse” as the proxy mode.



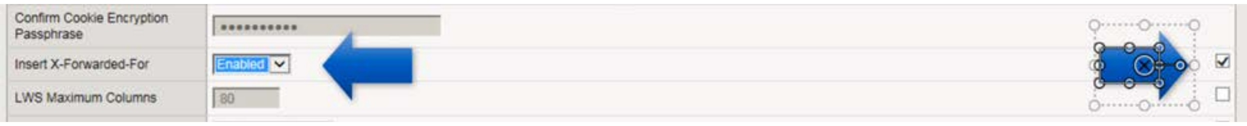
Local Traffic » Profiles : Services : HTTP » New HTTP Profile...

General Properties

Name	APPVOL-HTTP
Proxy Mode	Reverse
Parent Profile	http

Settings

- On the right side of the screen, check the “Custom” box in the X-Forwarded-For section.
- On the left side of the screen, change the setting to Enabled.



Confirm Cookie Encryption Passphrase	••••••••••	
Insert X-Forwarded-For	Enabled	☑
LWS Maximum Columns	80	☐

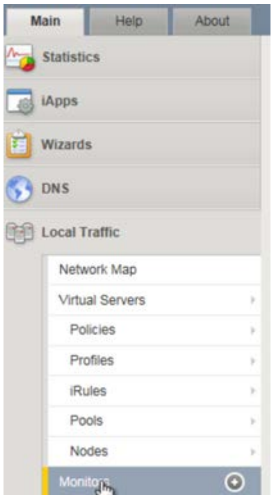
4. Scroll down to the bottom, then click Finish

Creating the Health Monitor

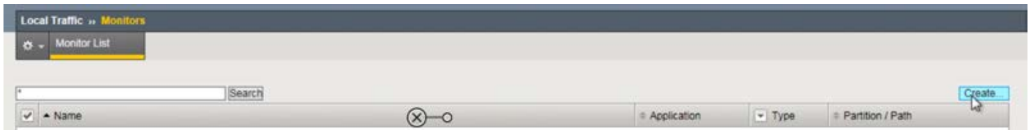
Creating the health monitor provides intelligent health checks of the server, beyond simply whether the service is listening or the server is pingable. This monitor will initially cover checking the web page for specific content.

NOTE: An enhanced monitor will be developed to simulate a user login to the App Volumes manager in the future.

1. On the BIG-IP - click Local Traffic, Monitors.

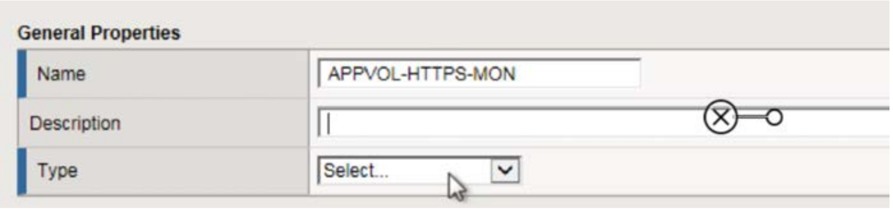


2. Click Create



3. Complete the following:

   - Type the name of the Monitor profile (this example – name is APPVOL-HTTPS-MON).
   - Select “https” as the type of monitor.



General Properties

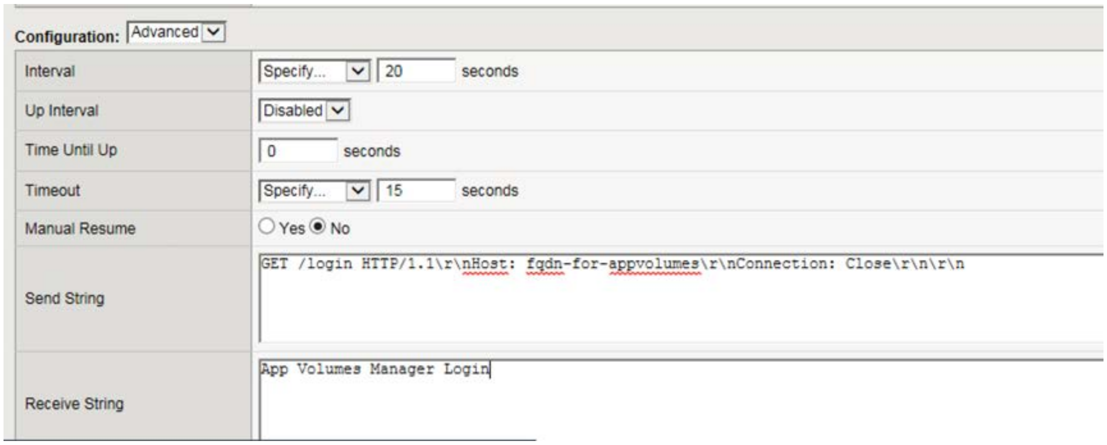
Name	APPVOL-HTTPS-MON
Description	
Type	Select...

   - Select 30 seconds for the Interval.
   - Select 15 seconds for the Timeout.
   - For the Send String, type in the following (replacing fqdn-for-appvolumes with the actual FQDN that will be used):

     GET /login HTTP/1.1\r\nHost: fqdn-for-appvolumes\r\nConnection: Close\r\n\r\n

   - For the Receive String, type in the following:

     App Volumes Manager Login



Configuration: Advanced

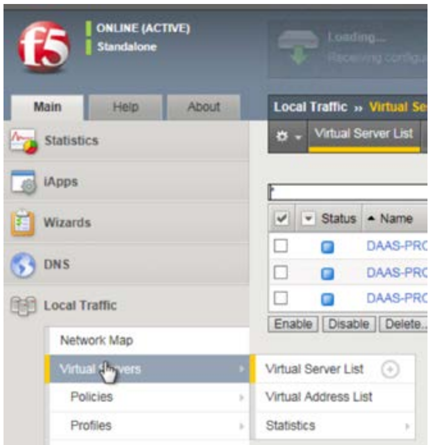
Interval	Specify... 20 seconds
Up Interval	Disabled
Time Until Up	0 seconds
Timeout	Specify... 15 seconds
Manual Resume	○ Yes ● No
Send String	`GET /login HTTP/1.1\r\nHost: fqdn-for-appvolumes\r\nConnection: Close\r\n\r\n`
Receive String	`App Volumes Manager Login`

   - Accept the remaining default settings.

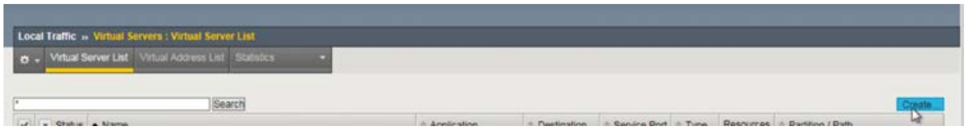
4. Scroll down to the bottom, then click Finish

Creating Virtual Server and Pool

1. Click on Local Traffic. Under Virtual Servers, click Virtual Server List.

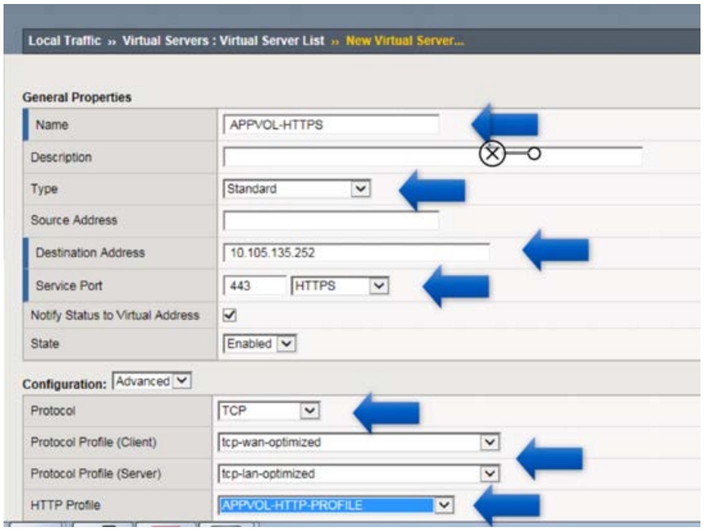


2. Click Create.



3. Complete the following (setting up a VIP with SSL Termination (Bridging):

- Provide a name for the Virtual Server – this example uses APPVOL-HTTPS.
- Set the Type to Standard.
- Provide an IP Address for the Virtual Server under Destination Address.
- Set the Service Port to 443
- Set the Protocol to TCP
- Set the Protocol Profile (Client) to tcp-wan-optimized and the Protocol Profile (Server) to tcp-lan-optimized.


Local Traffic » Virtual Servers : Virtual Server List » New Virtual Server...

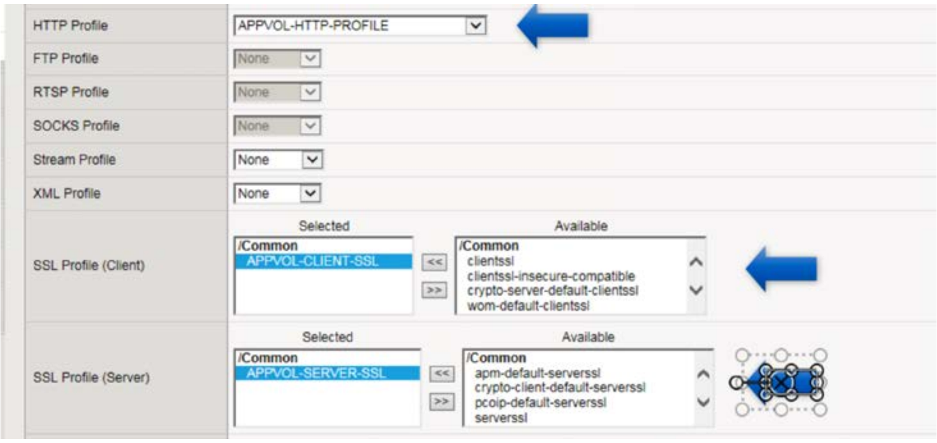
General Properties

Name	APPVOL-HTTPS
Description	
Type	Standard
Source Address	
Destination Address	10.105.135.252
Service Port	443 HTTPS
Notify Status to Virtual Address	☑
State	Enabled

Configuration: Advanced

Protocol	TCP
Protocol Profile (Client)	tcp-wan-optimized
Protocol Profile (Server)	tcp-lan-optimized
HTTP Profile	APPVOL-HTTP-PROFILE

- Set the HTTP Profile to the HTTP Profile that was created earlier.
- Choose the SSL Profiles (both Client and Server) that were created earlier.



HTTP Profile: APPVOL-HTTP-PROFILE

FTP Profile: None

RTSP Profile: None

SOCKS Profile: None

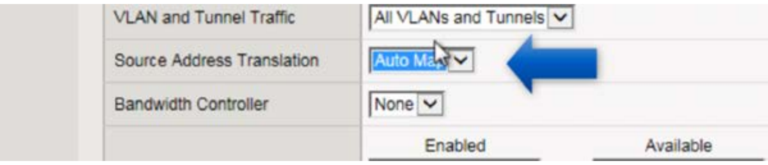
Stream Profile: None

XML Profile: None

SSL Profile (Client): Selected: /Common APPVOL-CLIENT-SSL; Available: /Common clientssl, clientssl-insecure-compatible, crypto-server-default-clientssl, wom-default-clientssl

SSL Profile (Server): Selected: /Common APPVOL-SERVER-SSL; Available: /Common apm-default-serverssl, crypto-client-default-serverssl, pcoip-default-serverssl, serverssl

- Set the Source Address Translation accordingly (refer to the product documentation for more information on SNAT). For this example, the default gateways for the App Volume servers are not the F5 – the Source Address Translation will be set to Auto Map.



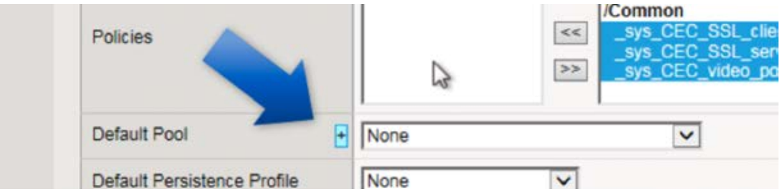
VLAN and Tunnel Traffic: All VLANs and Tunnels

Source Address Translation: Auto Ma

Bandwidth Controller: None

Enabled Available

- Next to Default Pool, click the "+" sign (in this example, we will assume the pool for the App Volume servers has NOT been created).

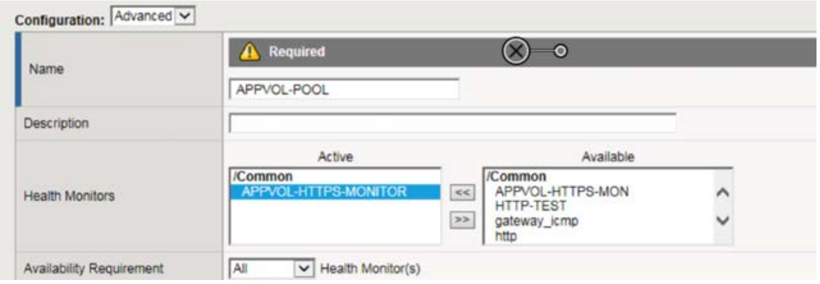


Policies: /Common _sys_CEC_SSL_clie, _sys_CEC_SSL_ser, _sys_CEC_video_po

Default Pool: + None

Default Persistence Profile: None

- Set the configuration to Advanced.
- Type in a name for the App Volumes Pool (this example uses APPVOL-POOL).
- Select the App Volumes health monitor that was created earlier.



Configuration: Advanced

Name: Required APPVOL-POOL

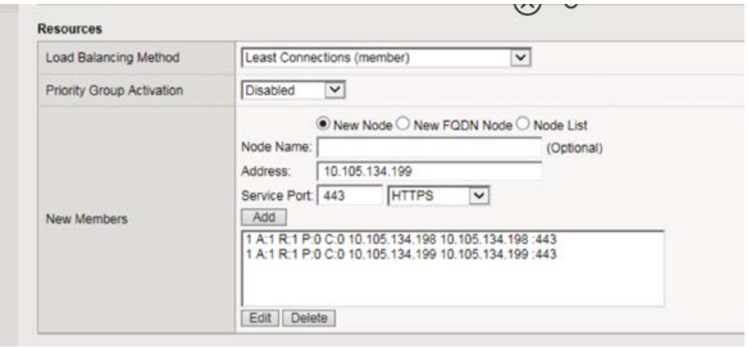
Description

Health Monitors: Active: /Common APPVOL-HTTPS-MONITOR; Available: /Common APPVOL-HTTPS-MON, HTTP-TEST, gateway_icmp, http

Availability Requirement: All Health Monitor(s)

- Change the Load Balancing Method to Least Connections (member).
- Type in the Node Name (optional) and IP address for each server (required); set the Service Port to HTTPS (443)

- Click Add
- Repeat the previous two (2) steps for each App Volumes Manager server.



Resources

Load Balancing Method: Least Connections (member)

Priority Group Activation: Disabled

New Members: ● New Node ○ New FQDN Node ○ Node List

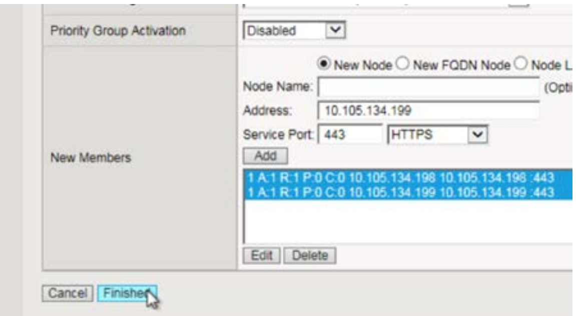
Node Name: (Optional)

Address: 10.105.134.199

Service Port: 443 HTTPS

```
1 A:1 R:1 P:0 C:0 10.105.134.198 10.105.134.198 :443
1 A:1 R:1 P:0 C:0 10.105.134.199 10.105.134.199 :443
```

- Click Finish - this will create the App Volumes pool.



Priority Group Activation: Disabled

New Members: ● New Node ○ New FQDN Node ○ Node L

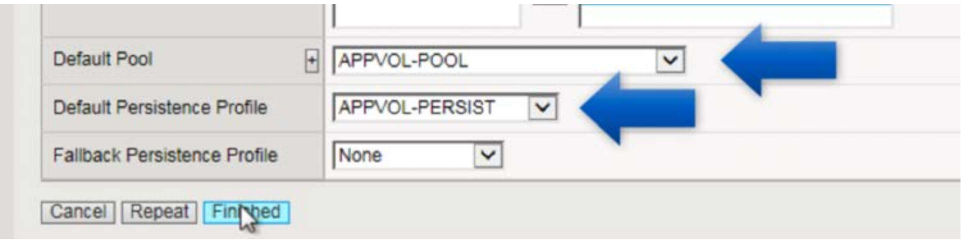
Node Name: (Opti

Address: 10.105.134.199

Service Port: 443 HTTPS

```
1 A:1 R:1 P:0 C:0 10.105.134.198 10.105.134.198 :443
1 A:1 R:1 P:0 C:0 10.105.134.199 10.105.134.199 :443
```

- Validate the new pool that was just created appears under Default Pool.
- Set the Default Persistence Profile to the App Volumes Persistent Profile created earlier.



Default Pool: APPVOL-POOL

Default Persistence Profile: APPVOL-PERSIST

Fallback Persistence Profile: None

4. Click Finish.

Testing and Validation

Conduct testing by accessing the App Volumes Manager through its web interface as well as testing App Volumes Agent connectivity.

- App Volumes-enabled desktops will have applications provisioned and de-provisioned on login/logoff, as well as computer startup and shut down.
- App Volumes Manager access through the web interface should be accessible.
- Check the BIG-IP pool member statistics to ensure the App Volume Manager and Agent sessions are being equally distributed between the App Volume pool members.