



## Deploying the BIG-IP System for Microsoft Application Virtualization

Welcome to the F5 and Microsoft Application Virtualization deployment guide. Use this document for guidance on configuring the BIG-IP system version 11 and later to provide performance and availability for App-V 5.0 SP2 Publishing and Management servers. When configured according to the instructions in this guide, the BIG-IP system performs as a reverse proxy for App-V.

F5 provides high availability and intelligent health monitoring for App-V services such as Management, Publishing, SMB, and HTTP Streaming servers.

### Products and applicable versions

Product	Version
BIG-IP LTM	11.0 - 11.6
Microsoft Application Virtualization (App-V)	5.0 SP2
Deployment guide version	1.0

**Important:** Make sure you are using the most recent version of this deployment guide, available at <http://www.f5.com/pdf/deployment-guides/microsoft-application-virtualization-dg.pdf>.

To provide feedback on this deployment guide or other F5 solution documents, contact us at [solutionsfeedback@f5.com](mailto:solutionsfeedback@f5.com)

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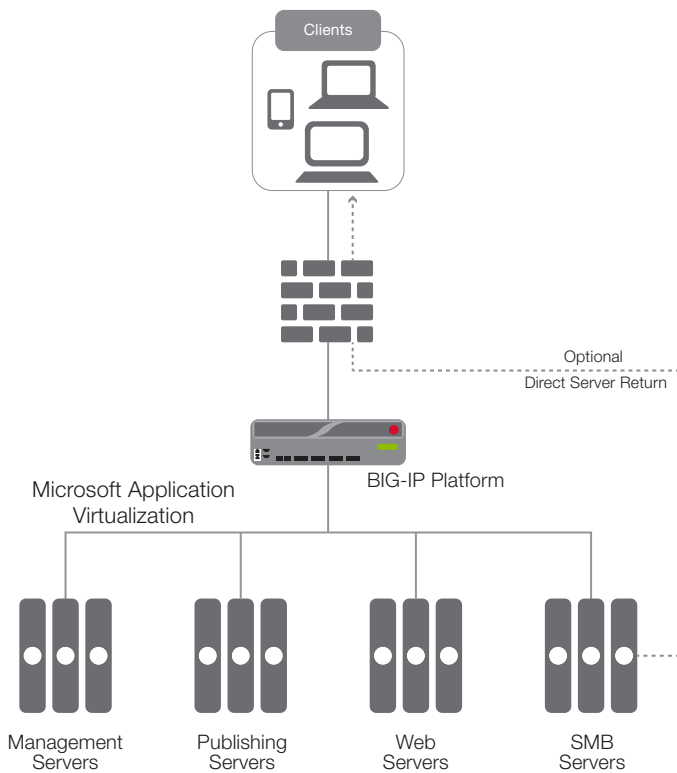
## Prerequisites and configuration notes

The following are general prerequisites and configuration notes for this guide:

- The BIG-IP system must be running BIG-IP version 11.0 or later, and all initial configuration tasks must be complete.
- You must have DNS A records pointing Publishing, Management, file share, and streaming FQDNs to their respective BIG-IP virtual server addresses.
- When importing sequenced packages, use the FQDNs/file share names specified above in the HTTP/UNC path.
- If you are configuring SSL Bridging for HTTP Streaming traffic, you must have obtained the appropriate SSL certificate and key, and installed them on the BIG-IP LTM system. See System > File Management > SSL Certificate list. Refer to the Help tab or the BIG-IP documentation for specific instructions on importing certificates.

## Configuration example

The following diagram shows a logical configuration diagram with the BIG-IP system providing high availability and intelligent health monitoring for a Microsoft App-V deployment. It also shows the optional Direct Server Return (nPath) configuration that is described in *Optional: Configuring Direct Server Return for SMB Traffic on page 8*.



**Figure 1:** Logical configuration example

## Configuring the BIG-IP LTM for Microsoft App-V

Use the following tables for guidance on configuring the BIG-IP system for the Microsoft Application Virtualization. These tables contains any non-default setting you should configure as a part of this deployment. Settings not contained in the table can be configured as applicable. For specific instructions on configuring individual objects, see the online help or product manuals.

### Publishing Server configuration table

Use this table for configuring the BIG-IP system for the Publishing server.

BIG-IP object	Non-default settings/Notes		
<b>Health Monitor</b> (Local Traffic-->Monitors)	<b>Name</b>	Type a unique name	
	<b>Type</b>	<b>HTTP</b>	
	<b>Interval</b>	<b>30</b>	
	<b>Timeout</b>	<b>91</b>	
	<b>Send String<sup>1,2</sup></b>	<b>GET / HTTP/1.1\r\nHost: <b>publish.example.local</b>\r\n</b>	
	<b>Receive String<sup>1</sup></b>	<b>Publishing</b>	
	<b>User Name<sup>1</sup></b>	Type a user name with access to the implementation	
	<b>Password<sup>1</sup></b>	Type the associated password	
<b>Pool</b> (Local Traffic -->Pools)	<b>Name</b>	Type a unique name	
	<b>Health monitor</b>	Add health monitor above	
	<b>Load Balancing Method</b>	<b>Least Connections (member)</b> recommended	
	<b>Address</b>	IP address of a Publishing Server	
	<b>Service Port</b>	<b>8081</b> Repeat Address and Port for all members	
<b>Profiles</b> (Local Traffic-->Profiles)	<b>HTTP (Profiles--&gt;Services)</b>	Name	Type a unique name
		Parent Profile	<b>http</b>
	<b>TCP WAN (Profiles--&gt;Protocol)</b>	Name	Type a unique name
		Parent Profile	<b>tcp-wan-optimized</b>
		Idle Timeout	<b>1800</b>
	<b>TCP LAN (Profiles--&gt;Protocol)</b>	Name	Type a unique name
		Parent Profile	<b>tcp-lan-optimized</b>
		Idle Timeout	<b>1800</b>
<b>Persistence (Profiles--&gt;Persistence)</b>	Name	Type a unique name	
	Persistence Type	<b>Source Address Affinity</b>	
	Idle Timeout	<b>1800</b>	
<b>Virtual Server</b> (Local Traffic-->Virtual Servers)	<b>Name</b>	Type a unique name	
	<b>Destination Address</b>	IP address for the virtual server	
	<b>Service Port</b>	<b>8081</b>	
	<b>Protocol Profile (Client)<sup>1</sup></b>	Select the TCP WAN profile you created above	
	<b>Protocol Profile (Server)<sup>1</sup></b>	Select the TCP LAN profile you created above	
	<b>HTTP Profile</b>	Select the HTTP profile you created above	
	<b>Source Address Translation</b>	<b>Auto Map</b> (SNAT is recommended. If you expect more than 64,000 concurrent connections per server, use a SNAT Pool <sup>2</sup> instead of Auto Map)	
	<b>Default Pool</b>	Select the pool you created above	
<b>Default Persistence Profile</b>	Select the persistence profile you created above		

<sup>1</sup> You must select **Advanced** from the **Configuration** list for these options to appear.

<sup>2</sup> For more information on SNAT Pools, see the BIG-IP documentation

## Management Server configuration table

Use the following guidance for configuring the BIG-IP system for the Management server.

BIG-IP object	Non-default settings/Notes																			
<b>Health Monitor</b> <i>(Local Traffic--&gt;Monitors)</i>	<b>Name</b> <b>Type</b> <b>Interval</b> <b>Timeout</b> <b>Send String<sup>1,2</sup></b> <b>Receive String<sup>1</sup></b> <b>User Name<sup>1</sup></b> <b>Password<sup>1</sup></b>	Type a unique name <b>HTTP</b> <b>30</b> <b>91</b> <b>GET /Console.html HTTP/1.1\r\nHost: manage.example.local\r\n</b> <b>200 OK</b> Type a user name with access to the implementation Type the associated password																		
<b>Pool</b> <i>(Local Traffic --&gt;Pools)</i>	<b>Name</b> <b>Health monitor</b> <b>Slow Ramp Time<sup>1</sup></b> <b>Load Balancing Method</b> <b>Address</b> <b>Service Port</b>	Type a unique name Add health monitor above <b>300</b> <b>Least Connections (member)</b> recommended IP address of a Management Server <b>8080</b> Repeat Address and Port for all members																		
<b>Profiles</b> <i>(Local Traffic--&gt;Profiles)</i>	<b>HTTP (Profiles--&gt;Services)</b> <b>TCP WAN (Profiles--&gt;Protocol)</b> <b>TCP LAN (Profiles--&gt;Protocol)</b> <b>Persistence (Profiles--&gt;Persistence)</b>	<table border="0"> <tr> <td>Name</td> <td>Type a unique name</td> </tr> <tr> <td>Parent Profile</td> <td><b>http</b></td> </tr> <tr> <td>Name</td> <td>Type a unique name</td> </tr> <tr> <td>Parent Profile</td> <td><b>tcp-wan-optimized</b></td> </tr> <tr> <td>Name</td> <td>Type a unique name</td> </tr> <tr> <td>Parent Profile</td> <td><b>tcp-lan-optimized</b></td> </tr> <tr> <td>Name</td> <td>Type a unique name</td> </tr> <tr> <td>Persistence Type</td> <td><b>Source Address Affinity</b></td> </tr> <tr> <td>Idle Timeout</td> <td><b>1800</b></td> </tr> </table>	Name	Type a unique name	Parent Profile	<b>http</b>	Name	Type a unique name	Parent Profile	<b>tcp-wan-optimized</b>	Name	Type a unique name	Parent Profile	<b>tcp-lan-optimized</b>	Name	Type a unique name	Persistence Type	<b>Source Address Affinity</b>	Idle Timeout	<b>1800</b>
Name	Type a unique name																			
Parent Profile	<b>http</b>																			
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Name	Type a unique name																			
Persistence Type	<b>Source Address Affinity</b>																			
Idle Timeout	<b>1800</b>																			
<b>Virtual Server</b> <i>(Local Traffic--&gt;Virtual Servers)</i>	<b>Name</b> <b>Destination Address</b> <b>Service Port</b> <b>Protocol Profile (Client)<sup>1</sup></b> <b>Protocol Profile (Server)<sup>1</sup></b> <b>HTTP Profile</b> <b>Source Address Translation</b> <b>Default Pool</b> <b>Default Persistence Profile</b>	Type a unique name IP address for the virtual server <b>8080</b> Select the TCP WAN profile you created above Select the TCP LAN profile you created above Select the HTTP profile you created above <b>Auto Map</b> (SNAT is recommended. If you expect more than 64,000 concurrent connections per server, use a SNAT Pool <sup>2</sup> instead of Auto Map) Select the pool you created above Select the persistence profile you created above																		

<sup>1</sup> You must select **Advanced** from the **Configuration** list for these options to appear.

<sup>2</sup> For more information on SNAT Pools, see the BIG-IP documentation

## SMB configuration table

Use the following guidance for configuring the BIG-IP system for SMB traffic.

If you are configuring the BIG-IP system for Direct Server Return (nPath), see *Configuring the BIG-IP system for Direct Server Return and SMB traffic on page 8* for an additional profile, and an alternate virtual server configuration.

BIG-IP object	Non-default settings/Notes	
<b>Health Monitor</b> <i>(Local Traffic--&gt;Monitors)</i>	<b>Name</b> <b>Type</b> <b>Interval</b> <b>Timeout</b>	Type a unique name <b>TCP</b> <b>30</b> <b>91</b>
<b>Pool</b> <i>(Local Traffic --&gt;Pools)</i>	<b>Name</b> <b>Health monitor</b> <b>Load Balancing Method</b> <b>Address</b> <b>Service Port</b>	Type a unique name Add health monitor above <b>Least Connections (member)</b> recommended IP address of a file share server <b>445</b> Repeat Address and Port for all members
<b>Profiles</b> <i>(Local Traffic--&gt;Profiles)</i>	<b>Persistence</b> <i>(Profiles--&gt;Persistence)</i>	Name Persistence Type Idle Timeout Type a unique name <b>Source Address Affinity</b> <b>1800</b>
<b>Virtual Server</b> <i>(Local Traffic--&gt;Virtual Servers)</i>	<b>Name</b> <b>Type</b> <b>Destination Address</b> <b>Service Port</b> <b>Source Address Translation</b> <b>Default Pool</b> <b>Default Persistence Profile</b>	Type a unique name <b>Performance (Layer 4)</b> IP address for the virtual server <b>445</b> <b>Auto Map</b> (SNAT is recommended. If you expect more than 64,000 concurrent connections per server, use a SNAT Pool <sup>2</sup> instead of Auto Map) Select the pool you created above Select the persistence profile you created above

<sup>1</sup> You must select **Advanced** from the **Configuration** list for these options to appear.

<sup>2</sup> For more information on SNAT Pools, see the BIG-IP documentation

## HTTP Streaming configuration table

Use the following table for guidance on configuring the BIG-IP system for HTTP Streaming. If you want the BIG-IP system to perform SSL bridging (where the BIG-IP system unencrypts incoming traffic, and then re-encrypts it before sending it back to the servers), follow the SSL Bridging notes.

BIG-IP object	Non-default settings/Notes		
<b>Health Monitor</b> <i>(Local Traffic--&gt;Monitors)</i>	<b>Name</b> <b>Type</b> <b>Interval</b> <b>Timeout</b> <b>Send String<sup>1,2</sup></b> <b>Receive String<sup>1</sup></b> <b>User Name<sup>1</sup></b> <b>Password<sup>1</sup></b>	Type a unique name <b>HTTP (HTTPS if you are deploying SSL Bridging)</b> <b>30</b> <b>91</b> <b>GET /Content/ HTTP/1.1\r\nHost: <b>publish.example.local</b>\r\n</b> <b>web.config</b> Type a user name with access to the implementation Type the associated password	
<b>Pool</b> <i>(Local Traffic --&gt;Pools)</i>	<b>Name</b> <b>Health monitor</b> <b>Slow Ramp Time<sup>1</sup></b> <b>Load Balancing Method</b> <b>Address</b> <b>Service Port</b>	Type a unique name Add health monitor above <b>300</b> <b>Least Connections (member)</b> recommended IP address of an HTTP streaming content server <b>80 (443 if you are deploying SSL Bridging)</b> Repeat Address and Port for all members	
<b>Profiles</b> <i>(Local Traffic--&gt;Profiles)</i>	<b>Persistence</b> <i>(Profiles--&gt;Persistence)</i>	Name Persistence Type Idle Timeout <b>Source Address Affinity</b> <b>1800</b>	
	<b>Additional profiles if you are configuring SSL bridging</b>		
	<b>Client SSL</b> <i>(Profiles &gt; SSL)</i>	Name Parent Profile Certificate and Key	Type a unique name <b>clientssl</b> Select the Certificate and Key you imported from the associated list
	<b>Server SSL</b> <i>(Profiles &gt; Other)</i>	Name Parent Profile	Type a unique name <b>serverssl</b>
<b>Virtual Server</b> <i>(Local Traffic--&gt;Virtual Servers)</i>	<b>Name</b> <b>Type</b> <b>Destination Address</b> <b>Service Port</b> <b>Source Address Translation</b>  <b>Default Pool</b> <b>Default Persistence Profile</b>	Type a unique name <b>Performance (Layer 4) (Standard if you are deploying SSL Bridging)</b> IP address for the virtual server <b>80 (443 if you are deploying SSL Bridging)</b> <b>Auto Map</b> (SNAT is recommended. If you expect more than 64,000 concurrent connections per server, use a SNAT Pool <sup>2</sup> instead of Auto Map) Select the pool you created above Select the persistence profile you created above	

<sup>1</sup> You must select **Advanced** from the **Configuration** list for these options to appear.

<sup>2</sup> For more information on SNAT Pools, see the BIG-IP documentation

## Optional: Configuring Direct Server Return for SMB Traffic

In traditional load balancing implementations, both incoming client traffic and the return server traffic flow through the BIG-IP system. With Direct Server Return (DSR), or nPath, the incoming client traffic flows through the BIG-IP device and to the application server, however the return traffic is routed around the BIG-IP system and sent directly to the client. Because App-V relies on protocols that use a simple request-in and large-stream-back model, this architecture has the benefit of eliminating the impact that the large amount of streaming traffic would have on your BIG-IP system.

### App-V Server Configuration

To support the deployment of DSR/nPath, you must configure a loopback adapter with the SMB BIG-IP virtual server IP address, and enable **WeakHostReceive** and **Forwarding** on the network interfaces.

#### Configure the Loopback Adapter

1. From Control Panel, select **Device Manager**.
2. Right-click the computer name and click **Add Legacy Hardware**.
3. Click **Next > Install the hardware that I manually select from a list > Network Adapters > Microsoft > Microsoft Loopback Adapter (Windows 2008 R2) or Microsoft KM-TEST Loopback Adapter (Windows 2012/R2)**.
4. When the adapter is successfully installed, configure the IP address of the loopback adapter to match the destination IP address of the BIG-IP virtual server you created for SMB access, with a subnet mask of **255.255.255.255**.
5. You must use Microsoft Windows PowerShell to enable the network interfaces for **WeakHostReceive** and **Forwarding**. From each Windows Server, open Windows PowerShell and run the following commands:
  - **Get-NetIPInterface**  
This command lists the server network interfaces. Note the **ifIndex** property of the loopback interface, as well as the interface that corresponds to the port 445 pool member in LTM.
  - **Set-NetIPInterface -InterfaceIndex 1 -WeakHostReceive Enabled -Forwarding Enabled**  
Run this command for each interface you identified above, using the **ifIndex** number for the **-InterfaceIndex** value.

### Configuring the BIG-IP system for Direct Server Return and SMB traffic

Use the following guidance for an additional profile and an alternate virtual server configuration.

BIG-IP object	Non-default settings/Notes		
<b>Profiles</b> (Local Traffic-->Profiles)	<b>Fast</b> (Profiles-->Protocol-->FastL4)	Name Loose Close Idle Timeout	Type a unique name <b>Enabled</b> <b>1800</b>
<b>Virtual Server</b> (Local Traffic-->Virtual Servers)	<b>Name</b> <b>Type</b> <b>Destination Address</b> <b>Service Port</b> <b>Protocol Profile (Client)</b> <b>Source Address Translation</b> <b>Address Translation</b> <b>Port Translation</b> <b>Default Persistence Profile</b>	Type a unique name <b>Performance (Layer 4)</b> IP address for the virtual server <b>445</b> Select the Fast L4 profile you created above <b>None</b> <b>Disabled</b> <b>Disabled</b> Select the persistence profile you created in the table on page 6	

Additional information about Direct Server Return/nPath can be found in the following guide:

[https://support.f5.com/kb/en-us/products/big-ip\\_ltm/manuals/product/lrm-11-1-0/6.html](https://support.f5.com/kb/en-us/products/big-ip_ltm/manuals/product/lrm-11-1-0/6.html).



## Document Revision History

Version	Description	Date
1.0	New guide	10-29-2014

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