This article applies to BIG-IP 9.x through 10.x. For information about other versions, refer to the following article:

- [K14267: Configuring Route Health Injection (RHI) for use with BGP (11.x - 12.x)]

Route Health Injection (RHI) is configured in ZebOS with an additional BIG-IP configuration option that is set at the virtual address level. Route Health Injections work in conjunction Border Gateway Protocol (BGP), allowing BGP to advertise virtual servers or withdraw the advertisements if the virtual server goes down.

Configuring virtual addresses to participate in BGP advertisements

You can utilize Route Health Injection by enabling RHI on the virtual addresses and the corresponding BGP configuration. To do so, perform the following procedure:

1. Log in to the BIG-IP LTM Configuration utility.
2. Select Local Traffic.
4. Select Virtual Address List.
5. Select the virtual address on which you want to enable Route Health Injection.
6. Select the Route Advertisement check box.
7. Click the Update button.

Note: In BIG-IP LTM version 9.2 and later, the behavior of RHI can be modified to redistribute the route when all, any, or no virtual servers are available on the virtual server address. In BIG-IP LTM version 9.2, you can modify the route to the virtual servers by selecting one of the following behavior options from a drop-down menu at step 6 in the above procedure:

- **Any**:
  If any virtual server on the address is Available (green), redistribute the route.

- **All**:
  All virtual servers on this address (other than those which are administratively disabled) must be Available (green) to redistribute the route. Virtual servers which have been administratively disabled do not affect the perceived health of the virtual address and will not cause the route to be withdrawn.

- **None**:
  The route will be redistributed regardless of the virtual server status.
  This is the default setting.
Configuring ZebOS to redistribute kernel routes

You can configure ZebOS to redistribute kernel routes, which should be filtered by a route map, by performing the following procedure:

1. Log in to the command line.
2. Start the VTY shell by typing the following command:
   ```
   vtysh
   ```
3. Enter privileged mode by typing the following command:
   ```
   enable
   ```
4. Enter terminal configuration mode by typing the following command:
   ```
   configure terminal
   ```
5. Configure the access list by typing the following command syntax:
   ```
   access-list 10 permit <IP network> <inverse mask>
   ```
   Replace `<IP network>` with the IP address of your network.
   Replace `<inverse mask>` with the inverse mask for your network. For example, the inverse mask for a /24 network is 0.0.0.255.
6. Configure the route map by typing the following commands:
   ```
   route-map rhi permit 1
   match ip address 10
   ```
7. Exit the current configuration mode and move to the previous configuration mode by typing the following command:
   ```
   exit
   ```
8. Configure BGP by typing the following command:
   ```
   router bgp <ASN>
   ```
   Replace `<ASN>` with the ASN (Autonomous System Number) of your system.
9. Enable the route map by typing the following command:
   ```
   redistribute kernel route-map rhi
   ```
10. Configure the BGP neighbor with which the route map will be shared by typing the following command syntax:
neighbor <BGP neighbor IP address> remote-as <BGP neighbor ASN>

Replace <BGP neighbor IP address> with the IP address of the neighboring BGP.

Replace <BGP neighbor ASN> with the ASN of the neighboring BGP.

11. Exit the current configuration mode and move to the previous configuration mode by typing the following command:

exit

12. Exit terminal configuration mode by typing the following command:

exit

13. Write the changes to memory by typing the following command:

write memory

14. Exit vtysh by typing the following command:

exit

Example configuration

The following example can be used as a template for configuring RHI. Consider the following two pools and virtual servers, as configured in the bigip.conf file:

pool http_pool {   monitor all https   member 192.168.0.1:http}pool https_pool {   monitor all http   member ... protocol tcp   pool http_pool}virtual https_hri_vip {   destination 10.1.1.1:https   ip protocol tcp   pool https_pool}

Notice that both of the virtual servers are on the same address. This address will be advertised in BGP as a redistributed kernel route, as long as any virtual server on that address is marked UP.

The following example is a sample configuration showing RHI enabled for a virtual server and its corresponding ZebOS configuration:

virtual address 10.0.0.1 {   route advertisement enable}

ZebOS must be configured to redistribute kernel routes, and those routes should be filtered by a route map. The following example is a sample ZebOS configuration for the above virtual server configuration example, above:

router bgp 10 redistribute kernel route-map rhi neighbor 192.168.254.1 remote-as

Note: The entire 10.0.0.0/24 subnet will be allowed by this filter; however, only the /32 for the virtual server address will be redistributed, and therefore, advertised.

Applies to:
Product: BIG-IP, BIG-IP LTM
10.2.4, 10.2.3, 10.2.2, 10.2.1, 10.2.0, 10.1.0, 10.0.1, 10.0.0, 9.6.1, 9.6.0, 9.4.8, 9.4.7, 9.4.6, 9.4.5, 9.4.4,