Configure High Availability for Plug and Play Gateway

How Cisco Plug and Play Gateway HA Works

Earlier releases of Prime Infrastructure supported a single Cisco Plug and Play Gateway in either of these modes:

• Plug and Play Gateway standalone server mode
• Plug and Play Gateway integrated server mode

HA was not available in both these solutions, and Cisco Plug and Play Gateway does not connect to the secondary Prime Infrastructure server automatically. It has to be manually redirected to the secondary Prime Infrastructure server.

Prime Infrastructure supports Plug and Play Gateway in HA in current release. The Cisco Plug and Play HA feature aims at providing the following:

• HA on a standalone server Plug and Play Gateway by providing a secondary standby Plug and Play Gateway.
• HA support between the standalone Plug and Play Gateway and Prime Infrastructure HA.
• HA support for Prime Infrastructure integrated Plug and Play Gateway.

Cisco Plug and Play Gateway HA Prerequisites

Before using the HA feature on Cisco Plug and Play Gateway, you must:

- Configure the primary and secondaryPrime Infrastructure servers and these must be accessible from Plug and Play Gateway standalone servers. See Configure High Availabilityfor more details.
- Ensure that the primary and secondary Prime Infrastructure SSL server certificates used for Message Queue Ports 61617 and Health Monitor port 8082 are available for extraction from primary and secondary servers for Prime Infrastructure HA mode with different IP addresses. See Set Up High Availability for more details.
- For virtual IP Address based HA, both primary and secondary servers must have the virtual IP address and certificates. See Using Virtual IP Addressing With HA for more details.
- At least one of the Prime Infrastructureserver Message Queue port 61617 port must be active at all times depending on the service which will take the HA role.
- Install the primary and secondary Plug and Play Gateway Virtual Machines. See the latest Cisco Prime Infrastructure Quick Start Guide for details of installation of virtual machines from OVA file.

Set up Standalone Cisco Plug and Play Gateway for Prime Infrastructure HA

The Cisco Prime Infrastructure server in HA can be configured in two modes:

- Virtual IP addresses for primary and secondary servers. See Using Virtual IP Addressing With HA for more details.
- Different IP addresses for primary and secondary servers. See Set Up High Availability for more details.

The standalone Cisco Plug and Play Gateway can be configured to work in both of these modes with a slight modification in the setup procedure.

Related Topics

Cisco Prime Infrastructure in HA with Virtual IP Address

Prime Infrastructure can be configured with a virtual IP address which floats across the primary and secondary servers, depending on the server that is active. Enter the virtual IP address of Prime Infrastructure in HA while setting up Cisco Plug and Play Gateway.

Integrated Plug and Play Gateway within Prime Infrastructure will work if the same virtual IP address is transferred to the active node. Cisco Plug and Play Gateway integrated with Prime Infrastructure will be configured automatically to use the Prime Infrastructure virtual IP address. No specific configuration is required to configure Cisco Plug and Play Gateway.

Related Topics

Cisco Prime Infrastructure in HA with Different IP Address

Prime Infrastructure can be configured with primary and secondary servers having different IP addresses. For configuring Cisco Plug and Play Gateway, run the **pnp setup advance** command in the advanced setup and enter the following information:

- Primary IP address.
- Enter y, when prompted if a secondary server is to be configured.
- Secondary IP address.

See Command Reference Guide for Cisco Prime Infrastructure for more details about running the commands.

Note Cisco Plug and Play Gateway integrated with Prime Infrastructure will not work when the primary and secondary servers have different IP addresses because the bootstrap configuration needs to be changed according to the active node.

Related Topics

Cisco Standalone Plug and Play Gateway Server HA Setup

Cisco Standalone Plug and Play Gateway can also be configured in HA with a secondary server for failover. Cisco Plug and Play Gateway in HA is always configured with a virtual IP address on the active node. For setting up the standalone Plug and Play Gateway in HA you must:

- Install two reachable Cisco Plug and Play Gateways with different IP addresses.
- Run the **pnp setup** or **pnp setup advance** command on the primary Cisco Plug and Play Gateway. See Command Reference Guide for Cisco Prime Infrastructure for more details.The primary server will automatically configure secondary Cisco Plug and Play Gateway at the end of the setup.
- Enter **y** when prompted, if you want to configure HA with primary Cisco Plug and Play Gateway HA server.

Note The standalone Cisco Plug and Play Gateway with Prime Infrastructure in HA has automatic failover from primary to secondary. Manual failover is not available.

The standalone Cisco Plug and Play Gateway with Prime Infrastructure in HA can be configured to failback manually or automatically from the secondary to primary server.

Enter the Cisco Plug and Play Gateway virtual IP address, virtual host name, IP address and username and password of the secondary server as part of pnp setup. Enter **0** for manual failback and **1** for automatic failback when prompted during the setup.

Note We recommend manual failback. Automatic failback is not recommended because in case of scenarios like flapping interface, failover and failback happens continuously.

Related Topics

Cisco Plug and Play Gateway Status

The Cisco Plug and Play Gateway status interface provides additional information regarding the following:

Prime Infrastructure HA Status:

- f the virtual IP address has been entered during setup, the status will display only the address. Cisco Plug and Play Gateway status cannot identify whether it is connected to the primary or secondary server.
- Cisco Plug and Play HA Status:

Along with the status for the different Cisco Plug and Play Gateway processes, it will also display the Cisco Plug and Play Gateway in active mode when both the gateways are up. The status will also show the connection status between the primary and secondary servers as an additional value in the table.

To check the status of the Cisco Plug and Play Gateway server, log in to the gateway server and run the **pnp status** command. The gateway server status is displayed.

See Command Reference Guide for Cisco Prime Infrastructure for more details on running the commands.

```
SERVICE                    | MODE          | STATUS    | ADDITIONAL INFO
-------------------------------------------------------------------------------
System                     |               | UP        |
-------------------------------------------------------------------------------
Event Messaging Bus        | PLAIN TEXT    | UP        | pid: 6808
CNS Gateway Dispatcher     | PLAIN TEXT    | UP        | pid: 7189, port:
 11011
CNS Gateway                | PLAIN TEXT    | UP        | pid: 7223, port:
 11013
CNS Gateway                | PLAIN TEXT    | UP        | pid: 7262, port:
 11015
CNS Gateway                | PLAIN TEXT    | UP        | pid: 7306, port:
 11017
CNS Gateway                | PLAIN TEXT    | UP        | pid: 7410, port:
 11019
CNS Gateway                | PLAIN TEXT    | UP        | pid: 7493, port:
 11021
CNS Gateway Dispatcher     | SSL           | UP        | pid: 7551, port:
 11012
CNS Gateway                | SSL           | UP        | pid: 7627, port:
 11014
CNS Gateway                | SSL           | UP        | pid: 7673, port:
 11016
CNS Gateway                | SSL           | UP        | pid: 7793, port:
 11018
CNS Gateway                | SSL           | UP        | pid: 7905, port:
 11020
CNS Gateway                | SSL           | UP        | pid: 7979, port:
 11022
HTTPD                      |               | UP        |
Image Web Service          | SSL           | UP        |
Config Web Service         | SSL           | UP        |
Resource Web Service       | SSL           | UP        |
```

```
Image Web Service          |  PLAIN TEXT         |  UP            |
Config Web Service         |  PLAIN TEXT         |  UP            |
Resource Web Service       |  PLAIN TEXT         |  UP            |
Prime Infrastructure Broker  |  SSL              |  UP            |  Connection: 1,
Connection Detail: ::ffff:10.104.105.170:61617
bgl-dt-pnp-ha-216/admin#
SERVICE                    |  MODE               |  STATUS        |  ADDITIONAL INFO
-------------------------------------------------------------------------------------
System                     |                     |  UP            |
-------------------------------------------------------------------------------------
Event Messaging Bus        |  PLAIN TEXT         |  UP            |  pid: 6426
CNS Gateway Dispatcher     |  PLAIN TEXT         |  UP            |  pid: 7107, port:
 11011
CNS Gateway                |  PLAIN TEXT         |  UP            |  pid: 7141, port:
 11013
CNS Gateway                |  PLAIN TEXT         |  UP            |  pid: 7180, port:
 11015
CNS Gateway                |  PLAIN TEXT         |  UP            |  pid: 7224, port:
 11017
CNS Gateway                |  PLAIN TEXT         |  UP            |  pid: 7263, port:
 11019
CNS Gateway                |  PLAIN TEXT         |  UP            |  pid: 7309, port:
 11021
CNS Gateway Dispatcher     |  SSL                |  UP            |  pid: 7381, port:
 11012
CNS Gateway                |  SSL                |  UP            |  pid: 7537, port:
 11014
CNS Gateway                |  SSL                |  UP            |  pid: 7581, port:
 11016
CNS Gateway                |  SSL                |  UP            |  pid: 7685, port:
 11018
CNS Gateway                |  SSL                |  UP            |  pid: 7855, port:
 11020
CNS Gateway                |  SSL                |  UP            |  pid: 7902, port:
 11022
HTTPD                      |                     |  UP            |
Image Web Service          |  SSL                |  UP            |
Config Web Service         |  SSL                |  UP            |
Resource Web Service       |  SSL                |  UP            |
Image Web Service          |  PLAIN TEXT         |  UP            |
Config Web Service         |  PLAIN TEXT         |  UP            |
Resource Web Service       |  PLAIN TEXT         |  UP            |
Prime Infrastructure Broker  |  SSL              |  UP            |  Connection: 1,
Connection Detail: ::ffff:10.104.105.170:61617
PnP Gateway Monitoring     |  SSL                |  UP            |  port: 11010
PnP Gateway HA             |  SSL                |  UP            |  Primary Server
is in Active state
bgl-dt-pnp-ha-217/admin#
```

Remove Cisco Plug and Play Gateway in HA

To delete the HA configuration for Prime Infrastructure with different primary and secondary IP addresses in the standalone Cisco Plug and Play Gateway, run the **pnp setup advance** advanced setup command and enter n when prompted.

For deleting Cisco Plug and Play Gateway HA, run the pnp setup or pnp setup advance command and enter n when prompted.

See Command Reference Guide for Cisco Prime Infrastructure for more details.

Note When deleting Cisco Plug and Play Gateway HA, the administrator must manually modify the dynamic port allocation **cns event** command and decommission the secondary server, if HA is being turned off. The Cisco Plug and Play Gateway secondary server will continue to run with the virtual IP address if it is not decommissioned.

Related Topics

Cisco Plug and Play Gateway HA and Cisco Prime Infrastructure Combinations

The Cisco Plug and Play Gateway functionality allows different configurations for HA with Prime Infrastructure. The various combinations, as per the configuration options available, are:

- Standalone Cisco Plug and Play Gateway without HA (Single Cisco Plug and Play Gateway)

    - The Prime Infrastructure server without HA.
    - The Prime Infrastructure server with HA with the virtual IP address.
    - Prime Infrastructure server with HA with the primary and secondary servers having two IP addresses.

- Standalone Cisco Plug and Play Gateway with HA and virtual IP address (Two Cisco Plug and Play Gateways)

    - Prime Infrastructure server without HA.
    - Prime Infrastructure server with HA with the virtual IP address.
    - Prime Infrastructure server with HA with the primary and secondary servers having two IP addresses.

- Integrated Cisco Plug and Play Gateway within Prime Infrastructure

    - Prime Infrastructure server without HA.
    - Prime Infrastructure server with HA with the virtual IP Address.

Related Topics

Limitations of Cisco Plug and Play Gateway HA

The Cisco Plug and Play Gateway HA feature has the following limitations:

- Any Plug and Play requests that are partially completed on the Cisco Plug and Play Gateway during failover and failback (the Prime Infrastructure and Cisco Plug and Play Gateway standalone server) will remain incomplete in the Prime Infrastructure server and these may not be configured successfully on the device.
- Failover and failback takes five to ten minutes during which Cisco Plug and Play Gateway provisioning does not happen. Devices that have received bootstrap with cns config initial will continue to reach Cisco Plug and Play Gateway for provisioning. Command Reference Guide for Cisco Prime Infrastructure for more details.
- Devices take time to connect to the backup server once the IP address is moved from the active to standby server depending on the configuration available in the cns event command for reconnect time.
- Prime Infrastructure integrated Plug and Play Gateway will support HA if the HA configuration in Prime is based on a virtual IP address. Prime Infrastructure HA with different IP addresses for primary and secondary servers will not support the Plug and Play Gateway HA functionality in the integrated server.
- For the Prime Infrastructure integrated Plug and Play Gateway, SSLv3 is disabled by default on all Gateway SSL ports (for example, ports 11012, 11014, and so on).
- Related Topics

Related Topics