Deploying the Smart Call Home Transport Gateway in a Load-Balanced Environment

Cisco® Smart Call Home–enabled devices perform proactive diagnostics on their own components to provide alerts and remediation advice when an issue is detected. Smart Call Home identifies problems on your devices before they can affect business operations and securely communicates vital device information to a Cisco data center, where it is analyzed against Cisco's deep knowledge base, which includes manufacturing and technical support information.

Introduction

Smart Call Home Transport Gateway is a software application that acts as a proxy for Call Home messages in a customer network. It can receive messages from devices over HTTP, HTTPS, and SMTP and send them to Cisco for processing. Large enterprise networks can often have more than 10,000 devices emitting high volumes of event traffic, which are forwarded on to the Cisco data center through the Cisco Transport Gateway.

Smart Call Home, a proactive diagnostic tool, helps automate the support response to critical hardware fault events. The transport gateway needs to be available at all times in order for the event traffic to reach Cisco and initiate the support response. This document addresses considerations for deploying the transport gateway behind a network load balancer.

Customer Network: Devices and Messages

The customer network may be a mixed environment consisting of various devices with Cisco IOS®, IOS-XE, IOS-XR, or NXOS Software; Cisco UCS®; Cisco Unified Communications Manager; and other operating systems. There is a Call Home feature within these operating systems that detects relevant faults as they occur, gathers diagnostic information that the Cisco Technical Assistance Center (TAC) would normally ask the customer to provide manually, and securely transmits the information to Cisco using SSL encryption. Fault messages (syslog, diagnostics, and environmental) typically repeat until the issue is fixed. Each fault message may be up to 100 KB in size.

Deploying the Transport Gateway in a Load-Balanced Environment

Figure 1 illustrates a typical transport gateway deployment. In this scenario, devices in the customer network have enabled the Call Home feature and are configured to communicate with the load balancer (such as BIG IP LTM from F5, HAProxy, and so on).

Figure 1. Cisco Transport Gateway Deployment Setup with Load Balancer
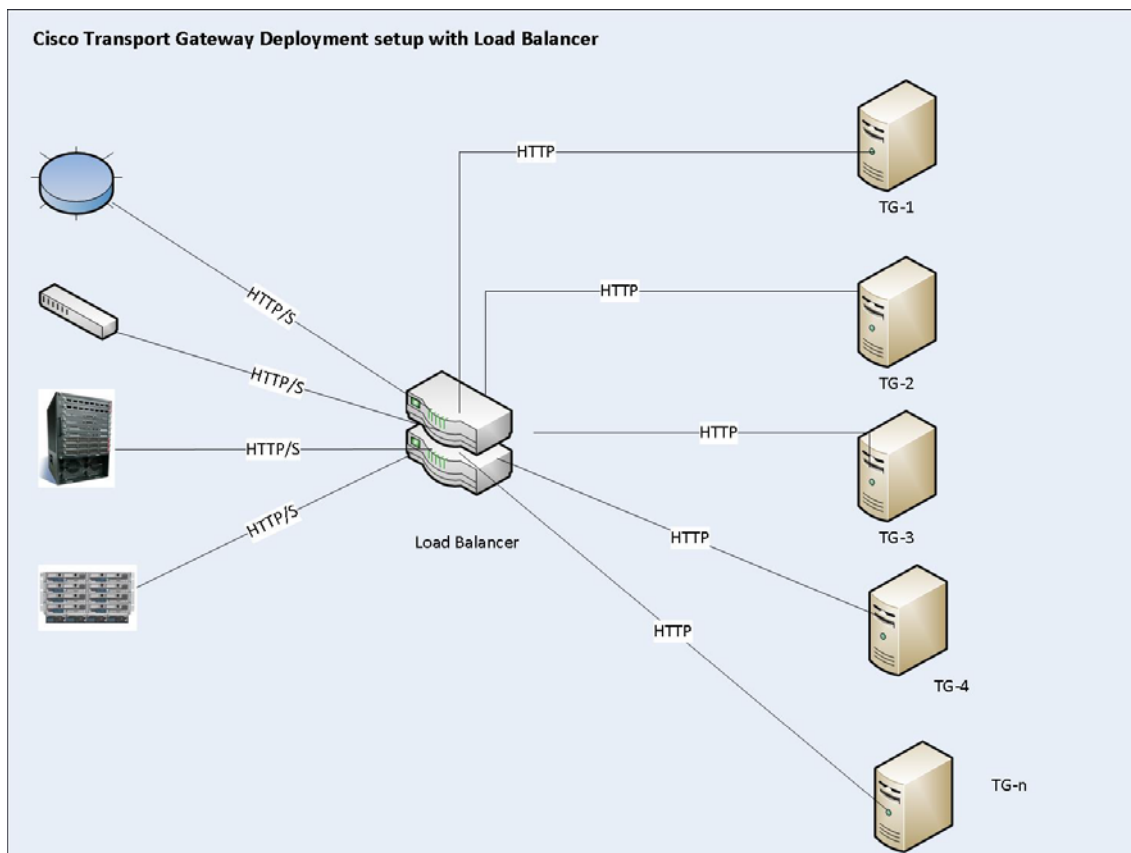
Important Deployment Considerations

Registering and Configuring Devices (HTTP and HTTPS)

Each transport gateway instance must be registered and configured separately prior to configuring it to communicate with the load balancer. This can be done by logging into each individual transport gateway configuration UI. Each transport gateway instance must be registered with Cisco to receive messages from devices. Refer to the Transport Gateway User Guide for more information.

Registering and Configuring Devices (SMTP)

If there are devices in the customer's network that support SMTP and not HTTP or HTTPS, then:

- Each transport gateway instance must be registered with Cisco to receive messages from devices. Refer to the Transport Gateway User Guide for more information.
- Configure each device to send email to the inbox in your network.
- Configure the transport gateway to pull these messages from the inbox. You can do this by using the "Mailbox Configuration" section of transport gateway configuration user interface. You can choose one of the transport gateway instances from the pool of transport gateway instances for this.

Additional Considerations

- If the device to transport gateway communication must be over HTTPS, then the corresponding SSL offloading must be done on the load balancer.
- The load balancer to transport gateway communication must be over HTTP.
- The load balancer's HTTP or HTTPS endpoint URL must be configured on all devices.
- The load balancer will distribute the load among the transport gateway instances (load-balancing strategy has to be configured at the load balancer level).

Transport Gateway Capacity and Scaling Information

This section offers some general guidelines for deployment planning purposes. However, each network is different, and results can vary quite a bit (see Table 1 for examples):

- 20 messages are transmitted by a single device per day.
- 50,000 devices send out 1,000,000 messages per day.
- Each transport gateway can handle 10,000 messages per hour.
- Each transport gateway can handle 240,000 messages per day.
- Providing 5 transport gateways under a load balancer would help serve 1,000,000 messages (with scope for additional scale).

Table 1. Transport Gateway Capacity and Scaling Based on Network Size

Network Size (Number of Devices)	Total Messages per Day	Number of Transport Gateways Required
10,000	200,000	2
20,000	400,000	3
50,000	1,000,000	5

System Requirements for Each Transport Gateway

- 2 GB of RAM
- Dual-core processor
- 50 GB hard drive

References

- [Transport Gateway User Guide](#)
- [Transport Gateway Troubleshooting](#)