SIP Server HA Deployment Guide

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SIP Server HA Architecture

A high-availability (HA) architecture implies the existence of redundant applications: a primary and a backup. These applications are configured so that if one fails, the other can take over its operations without significant loss of data or impact to business operations.

SIP Server supports several high-availability deployment options:

- IP Address Takeover
- Windows NLB Cluster
- Using SIP Proxy
- Network device-based HA

IP Address Takeover and Windows NLB Cluster HA options utilize the concept of a Virtual IP address. In a Virtual IP interface"based architecture, primary and backup SIP Servers are located on the same subnet, and SIP endpoints and gateways are configured to send SIP messages to SIP Server by using this single Virtual IP address. The Virtual IP address is preserved during switchover occurrences, and messages that are sent to the Virtual IP address are delivered to the SIP Server that is currently running in primary mode.

When the Management Layer detects failure of a primary SIP Server, it executes a set of corrective actions, which allows SIP messages that are destined for the failed primary SIP Server to be delivered to the backup SIP Server that has just started running in primary mode.

While SIP endpoints and gateways use a single Virtual IP address to communicate with SIP Server, Management Layer and Configuration Layer components, and T-Library clients must use a unique IP address for communication with the SIP Server and Local Control Agent (LCA) that is installed at each SIP Server host.

On Windows and UNIX, an IP Address Takeover configuration is implemented by using Virtual IP address control scripts to enable and disable Virtual IP addresses. The Windows NLB configuration uses Cluster control scripts to enable and disable Virtual IP ports.

A network device-based HA is an alternative to software-based HA configurations. The SIP Server and F5 Networks BIG-IP Local Traffic Manager (LTM) integration solution supports this type of HA configuration.

Each of these configurations is described in more detail in the following sections.

The following table summarizes SIP Server HA options, their benefits and limitations, and supported operating systems (Windows, Linux, Solaris, or AIX).

Comparing High-Availability Options

HA Option	Benefits	Limitations
IP Address Takeover	• Supported on all operating systems	• Supports a single subnet • Operations on both servers,

HA Option	Benefits	Limitations
	• Supports multiple NICs • 100% Genesys components • HA option of choice for reliability ratings and tests	backup and primary, must succeed • Subnet equipment to accept gratuitous ARP
Windows NLB Cluster	• Widely deployed • Thoroughly documented • Supports multiple NICs	• Supports a single subnet • Complexity/prerequisites • Dedicated switch/VLAN
F5 Networks BIG-IP LTM	• Reliability • Flexibility (HA and Load balancing) • Supports multiple NICs	• Additional equipment cost • Additional network element • Highly complex configuration
Using SIP Proxy	• Reliability • 100% Genesys Components • No Virtual IP address required • Supports multiple subnets • Supports Active-Active Resource Manager integration	

SIP Server also supports HA configurations in which both primary and backup SIP Server instances reside on a single host server. In this case, IP interface virtualization is not required.