



SGM Overview

This chapter describes ITP, SGM, and SGM's client/server architecture. It includes the following major sections:

- [What is ITP?, page 1-1](#)
- [What is SGM?, page 1-2](#)
- [What is Client/Server Architecture?, page 1-5](#)

What is ITP?

Any discussion of SGM requires some knowledge of the hardware and software used by ITP.

ITP is part of Cisco's hardware and software SS7-over-IP (SS7oIP) solution. ITP provides a reliable, cost-effective medium for migrating Signaling System 7 (SS7), the telecommunications network signaling technology, to the mobile wireless industry IP environment. ITP off-loads SS7 traffic onto the IP network, replacing the mobile service provider's signaling network with a redundant IP cloud.

In ITP, a *node* is a Cisco ITP or a legacy SS7 device (SSP, SCP, or STP).

A Cisco ITP node can have multiple *signaling points*. Signaling points are identified with unique addresses called *point codes*. Point codes are carried in signaling messages exchanged between signaling points to identify the source and destination of each message.

Signaling points and legacy SS7 devices are connected by *links*, and multiple links are grouped in a *linkset*. Each link is assigned to a single linkset, but each linkset can have multiple links. Links within the same linkset must be parallel between the same signaling points or nodes.

In SGM, a linkset is a representation of *two* linksets associated with two signaling points or nodes, one for each side of a logical connection.

Collectively, nodes, signaling points, linksets, and links are known as *managed objects*.

For more information about ITP, including procedures for configuring ITP nodes, signaling points, linksets, and links, see the *IP Transfer Point (ITP)* feature module for Cisco IOS software release 12.2(4)MB4 or later.

What is SGM?

SGM is a network management software product that enables network administrators to discover, manage, and troubleshoot networks that include Cisco ITPs. SGM provides the following key features:

- Uses client/server architecture. See the [“What is Client/Server Architecture?” section on page 1-5](#) for more details.
- Runs on standard IP-connected networks, and transparently over Virtual Private Networks (VPNs). Also runs in Network Address Translation (NAT), firewall, port-forwarding, and Secure Sockets Layer (SSL) networking environments with minimal additional configuration. SGM can run in each of these environments individually or in any combination.
- Supports concurrent network indicators and variants, multiple secondary point codes, SS7 instance translation, and virtual linksets.
- Provides a Java-based, easy-to-use graphical user interface (GUI) on the client with extensive Web-based online help.

Also provides a powerful command-line interface (CLI) on the server.

Also provides an extensive HTML-based Web interface with:

- Access to network and server status information
- Access to link and linksets statistics summary reports
- Access to accounting statistics reports

- Access to point code inventory reports
 - Ability to export reports for use in spreadsheet and graphics programs
 - Installation, message, command, report, and security logs
 - Client downloads
 - Product documentation
 - Other information about SGM. Most of the primary GUI client features are also available on the Web interface, with the exception of the topology map, real-time data charts and event management, and route table and GTT file configuration.
- Provides extensive security services, including:
 - Management of SSL certificates via the GUI
 - Multi-level password-protected access for multiple users
 - Passwords that can be changed by users via the GUI
 - Audit trails of all user actions and all access via the Web interface
 - Security logs
 - Optional access via VPN, Secure Shell (SSH), and SSL
- Automatically discovers the ITP network from any ITP device, with links to non-ITP devices, and creates both topological (graphical) and tabular (text) views of the network.
 - The topology view displays nodes, signaling points, and linksets as color-coded glyphs on a topology map, with right-click menus and layout, zoom, find, grid, and save-as-JPEG functions.
 - The tabular view displays detailed data in columns that can be resized, sorted, or hidden, depending on your preferences.
- Enables you to customize just about every aspect of the GUI, topology, and tabular views to meet your specific needs. Customized views can be saved for future use and reference, and shared with other users of the network.
- SGM automatically saves your preferences, such as the size of specific windows or the order of columns in a window, and automatically applies those preferences whenever you launch the SGM client.
- Polls the ITPs on demand, and at user-defined intervals, and reports the real-time status of all nodes, signaling points, linksets, links, and events, including the reason for any changes in status.

- Enables you to annotate nodes, signaling points, linksets, and events, attaching important information such as detailed descriptions, locations, service history, what triggered the event, how often it has occurred, and so on.
 - Enables you to customize the displayed category, severity, color, and message associated with events. You can even have SGM play unique sounds for different types of events.
 - Enables you to automate events, calling UNIX scripts to drive automatic paging, e-mail, and so on, on the SGM server.
 - Receives SNMP traps natively or via HP OpenView, to drive alarms and accurate and up-to-date status displays.
 - Provides Web-based alarm viewing, sorting, filtering, archiving, metric calculations, and reason codes.
 - Provides M3UA/SUA status displays.
 - Supports high server uptime with multiple server support, primary and secondary configurations, dynamic routing, automatic process management, and many debugging and customization tools, including real-time drill-down diagnostic applications.
 - Enables you to configure destination point code (DPC) route tables and Global Title Translation (GTT) tables. Supports GTT file format versions 2.0, 3.0, 3.1, and 4.0.
 - Can integrate with the entire suite of CiscoWorks2000 products, including:
 - Resource Manager Essentials, which provides network management for Cisco ITPs.
 - Internetwork Performance Monitor, which enables you to measure and monitor key performance metrics in a Cisco IOS-based IP network.
 - Access Control List Manager, which manages the access lists of Cisco devices.
 - CiscoView Element Manager, which provides dynamic status, monitoring, and configuration information for a broad range of Cisco internetworking products.
- You can launch the CiscoView Element Manager and the CiscoWorks2000 Device Center directly from the topology map, for quick drill-down network analysis.
- Supports printing of windows to a file or to a PostScript printer.

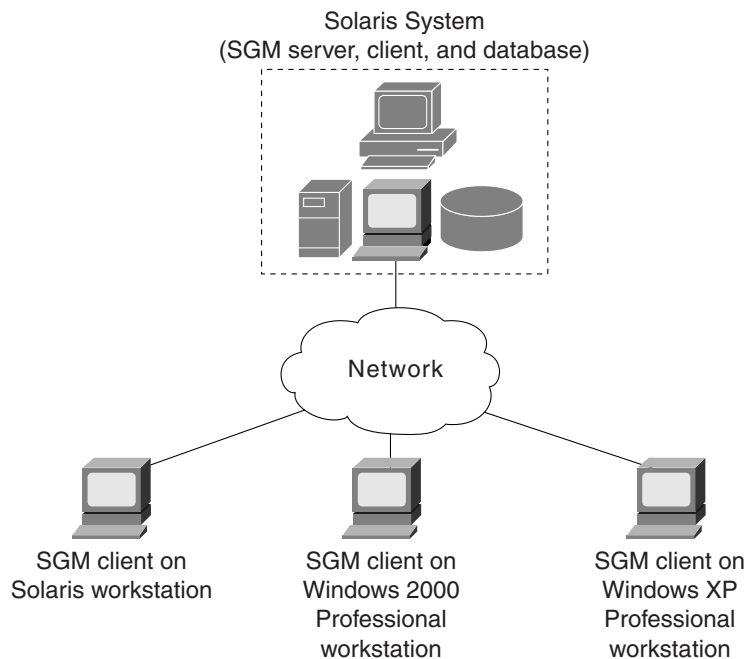
What is Client/Server Architecture?

SGM provides central services and database functions on an SGM server, which communicates through a messaging interface with multiple SGM clients.

SGM recommends a maximum of 20 clients per SGM server. If you connect more than 20 clients to a single server, the server requires additional memory and a more powerful CPU.

SGM consists of server and client software components that can be installed on the same workstation or on different workstations. The SGM server is currently available only on Solaris, but the SGM client is available on Solaris, on Windows 2000 Professional, and on Windows XP Professional (Figure 1-1).

Figure 1-1 SGM Client/Server Architecture



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The client/server architecture is cross-platform compatible, which allows you to run the client and server software in mixed operating system environments. For example, you can run the SGM server on a Solaris workstation and access it from an SGM client running on a Windows 2000 Professional or Windows XP Professional workstation.

The SGM server software consists of a group of functional services that manage the data among the network, client workstations, and the centralized database. The SGM server manages the exchange of data between the SGM database and the network devices. The SGM process manager launches and manages all of the SGM server processes, providing a robust and reliable launching platform for SGM.

The SGM client software communicates with the SGM server. You can install the SGM client software on the same workstation as the SGM server software, or on a different workstation on the same network as the SGM server. After you install the SGM server, you can download the SGM client software from the Web, for easy distribution to users and easier access to important information.