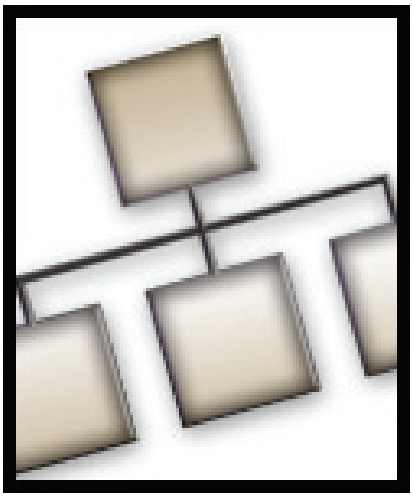
KMSYS Worldwide, Inc.



Host Gateway Server Configuration

11 December 2006

Table Of Contents

Introduction to HGS

Host Gateway Server from KMSYS Worldwide, Inc.

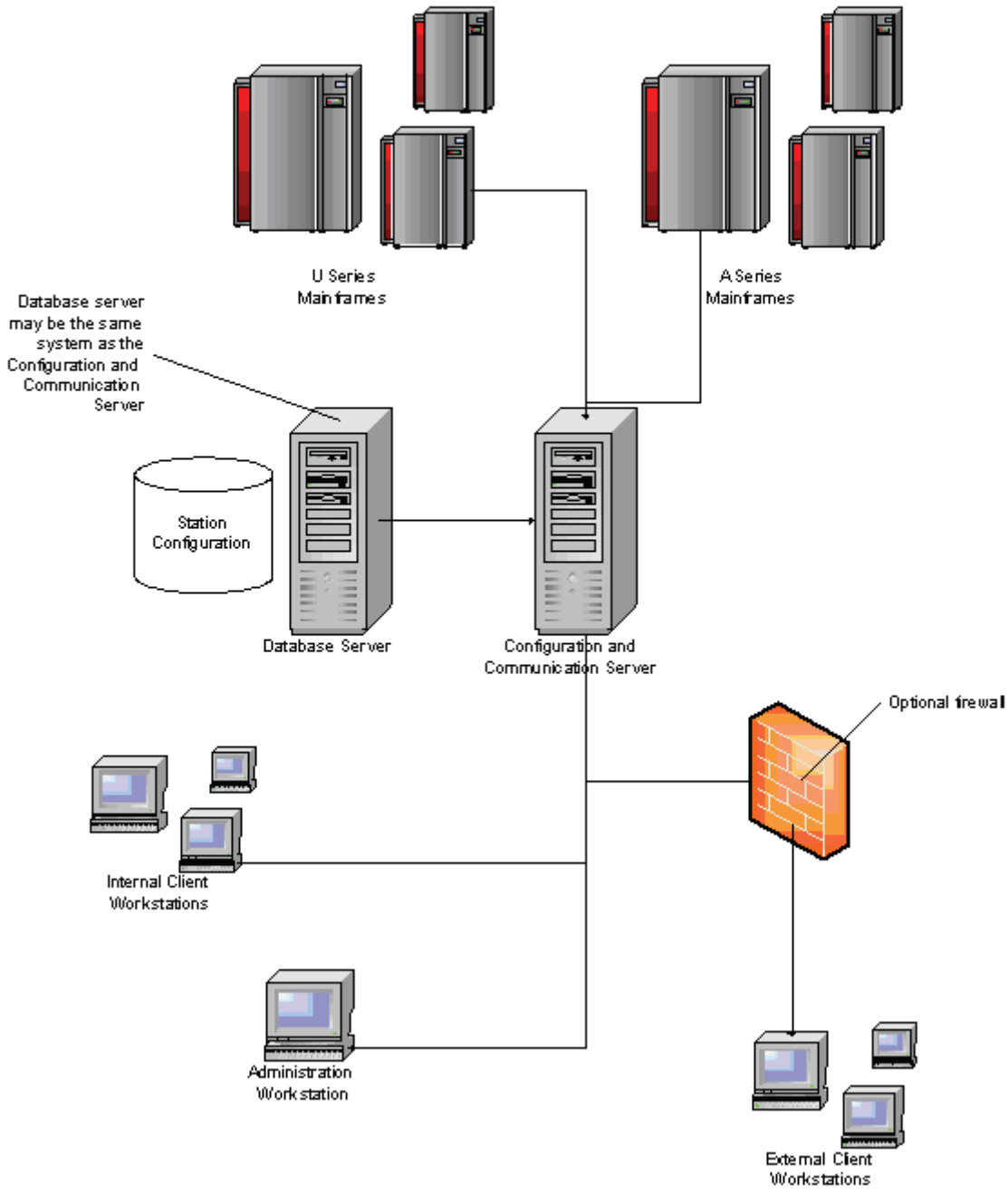
Host Gateway Server (HGS) from KMSYS Worldwide is a terminal concentration system. It will take connections from remote desktop clients provided by KMSYS Worldwide and forward those connections to a Unisys Mainframe, either a 2200 series or an A series type product. Host Gateway Server must be installed on a Microsoft© Windows 2000 or Windows 2003 server running IIS version 5 or greater. HGS features secure connections via SSL from the client systems to the HGS server.

HGS was designed from the ground up to be implemented in Microsoft .net Framework with careful attention to reliability and security.

The use of Host Gateway Server on Windows XP systems is not supported by KMSYS Worldwide.

Host Gateway Server requires the use of a database, that may either be a full-blown SQL database server instance that you have previously installed, or it may be a Microsoft Date Engine (MSDE) database that will be installed during the installation of the Host Gateway Server. This database server may or may not be resident on the same systems as Host Gateway Server. There will be one and only one database server per Host Gateway Server cluster. Any HGS System that is using a remote database must be configured to allow delegation. This is a setting in active directory in both Windows 2000 and Windows 2003 domain systems. Please note that Host Gateway Server will not run in NT4 domain. It will run in a Windows 2000 native or mixed mode domain, with some restrictions as to certain security groups to be discussed later.

Host Gateway Server System Overview



Technical Overview

HGS is comprised of 5 parts

- Client
- Communication Server
- Configuration Server
- Administration Client (HGSConfigUtility)
- Database Server

The Configuration Server can be thought of as middleware. Both he Administration Client and Communication Server connect to the Configuration Server (via .net Remoting). In turn the Configuration Server will interface to the Database Server on their behalf.

The Client systems connect to the Communication Server via the protocol specified in the Interface section of the HGSConfigUtility. The Communication Server will connect to the A-Series or U-Series mainframe as configured in the T27 Rout or UTS Route sections of the HGSConfigUtility.

The HGSConfigUtility is deployed by a One Touch Install.

The database on the database server will be used to configure and maintain information specific to a client connection. Any station name that may be supplied by a client will have an entry in the ClientStationTable. Likewise any station name that may be picked by the 'lookup' method will have an entry in the ClientSationTable. Any generic (auto generated) station name that has an active connection will also have an entry in the ClientStationTable.

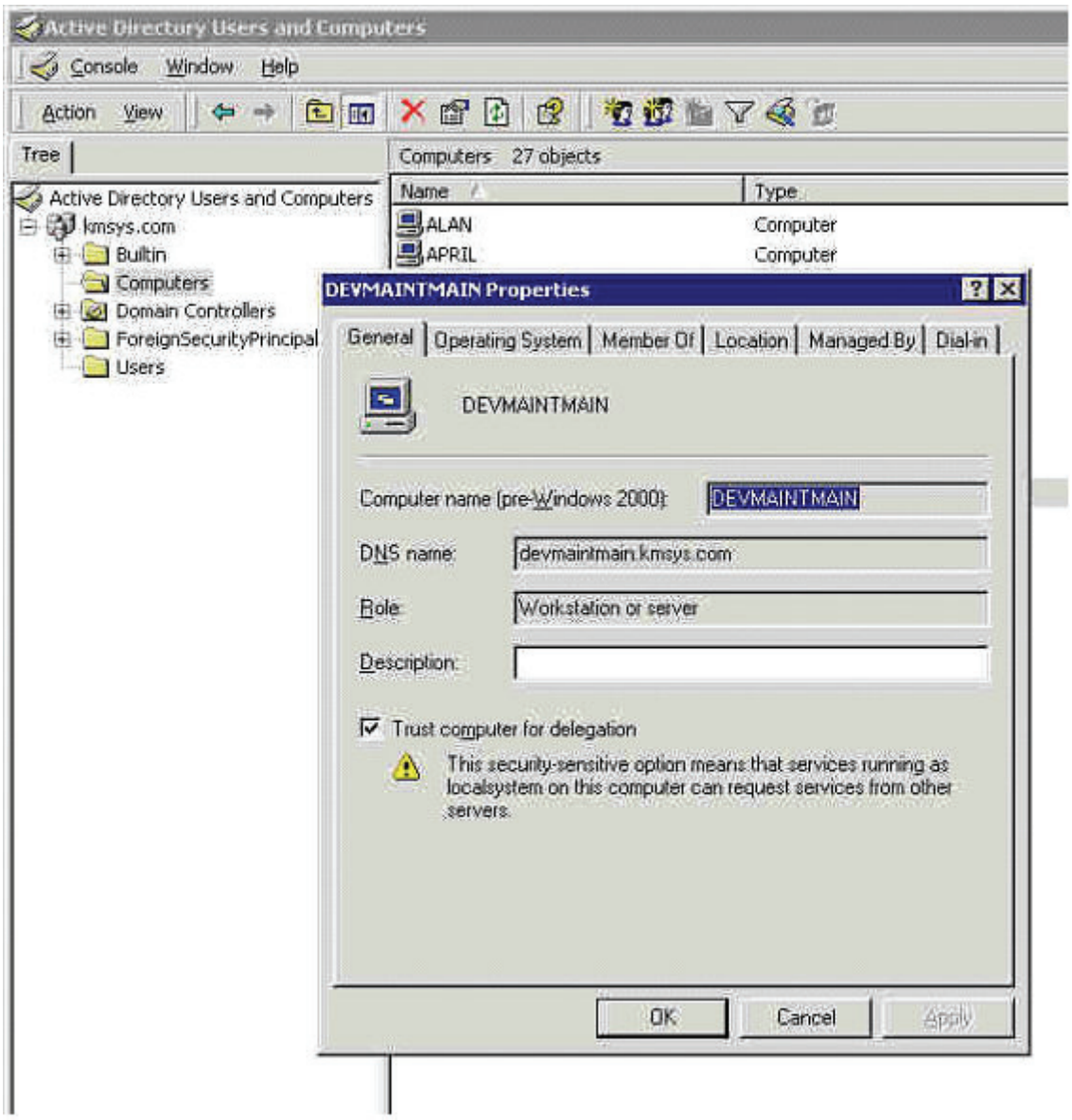
The Communication Server is actually a Windows Service. Its exe name is HostGatewayServer and it is registered with the service controller as HostGatewayServer. It supports both pause (and continue) and stop operations via the service controller. A pause operation will allow current sessions to continue to operate, but it will not accept any new connections from clients. A stop operation will terminate current sessions before stopping the service.

Installation Requirements

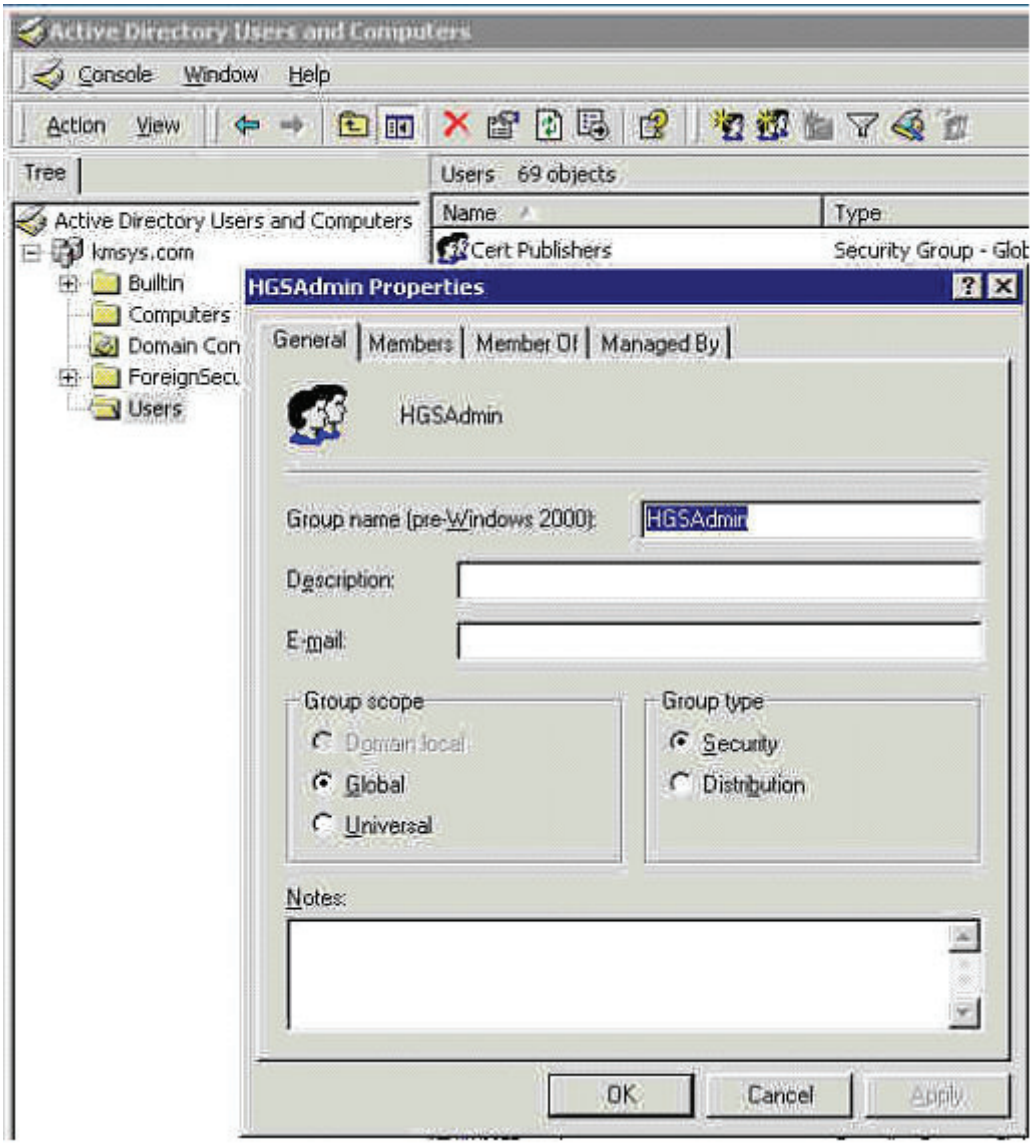
Overview

One or two systems running Windows 2000 or Windows 2003 Server, Advanced Server or Small Business Server. Web Server 2003 is not supported.

Database Server	Must be a member server of the Windows Domain.
Communication Server	Must be a member server of the Windows Domain.
Configuration Server	Must be a member server of the Windows Domain.
	Must have IIS installed and properly configured to run ASP.NET.
	Must have Microsoft .net Framework 1.1 installed.
	Must be marked "Trust computer for delegation" in the Active Directory entry.



Administration Workstation	Must be a member of the Windows Domain.
	Must have Microsoft .net Framework 1.1 installed.
HGS Admin Group	Must be setup as a Global security group.



Configuration Server - IIS

Create two virtual directories with the names of HGSConfig and HGSConfigObjects. HGSConfigObjects must have bin subdirectory.

Place a dummy web.config file with just a blank line in it into the HGSConfigObjects directory.

Mark both directories as using integrated security and not allowing anonymous access. Make sure that the HGS Admin Group has Read & Execute, List Folder Contents and Read access to both directories.

Attempt to view the web.config file by entering the following into Internet Explorer: http://server_name/HGSConfigObjects/web.config. You should get an error that says, "This type of page is not served." If you do not get this error, then please see Microsoft Knowledge Base article KB306006: http://support.microsoft.com/default.aspx?scid=kb;EN-US;306005.

If you want SSL authentication or encryption, install a SSL certificate into the IIS on every Configuration Server.

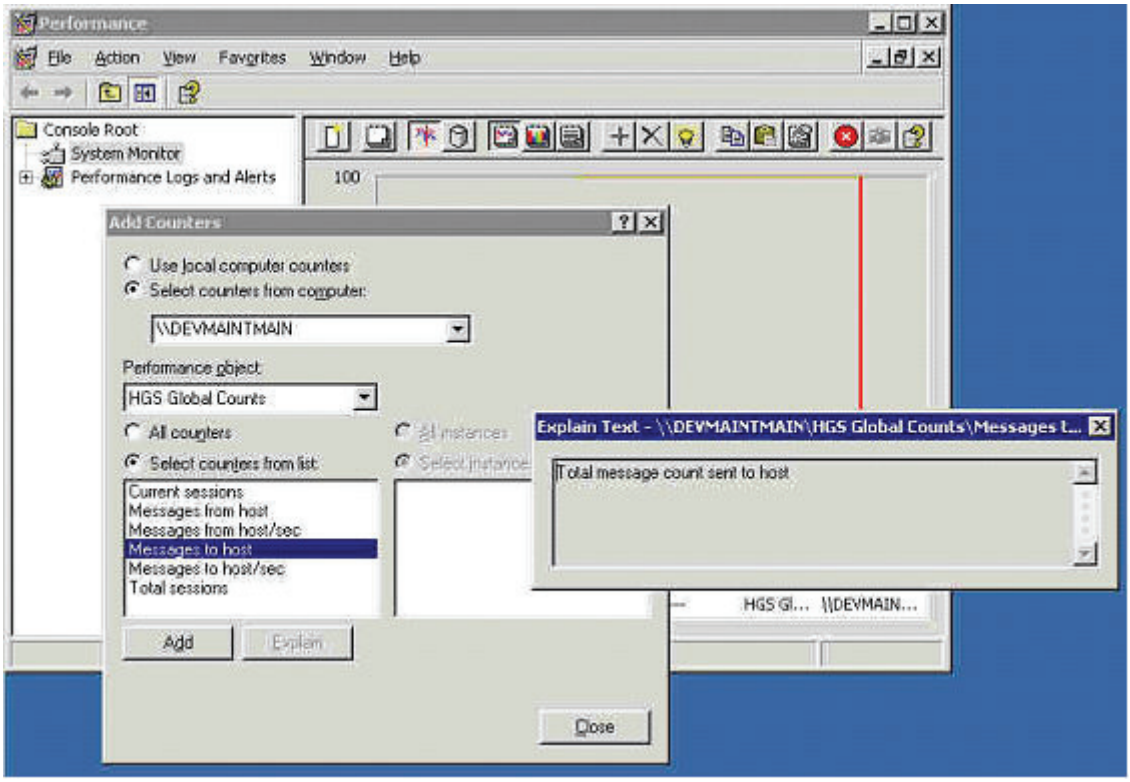
Configuration Server

Add the HGS Admin Group to the Local Administrators group.

Performance Monitoring

Performance Monitoring

The Communication Server (HostGatewayServer) has some Performance Monitoring points built-in. They are found in the HGS Global Counts performance object. Each count has an explanation available via the Explain button in the Add Counter dialog in Performance Monitor.



HGS_Configuration_Utility

HGS Configuration Utility - Main Dialog

The HGS Configuration Utility is used to maintain the gateway environment between users and hosts. Using this utility, configure connection information (routes, open ids and virtual destinations), maintain client lists with permissions and set station selection options. In addition, configuration information is maintained for both ClearPath Dorado (2200) and ClearPath Libra (A Series) connections.

File menu

The controls on this menu are used to manage HGS configuration sets and exit the program. Shortcut keys where available are shown in parentheses. Also, many of the controls are duplicated in the form of buttons on the utility's toolbar.

New (Ctrl+N)

Use this selection to establish a new configuration set with default settings.

Open (Ctrl+O)

Use this selection to open an existing configuration set.

Open Active

Use this selection to open the currently active configuration. Note: To make a different configuration set active, use the **Activate Configuration Set** button on the **General** tab once you have opened the set.

Save (Ctrl+S)

Use this selection to save the current configuration set.

Save As

Use this selection to save the current configuration set to an alternate set.

Save and Close

Use this selection to save the current configuration set and exit the program.

Exit

Use this selection to exit the program.

General tab

This tab contains information displaying the name of the HGS configuration set currently in use, set description and "saved" date/time stamps.

Use the **File** | **New** selection to begin the configuration process.

Activate Configuration Set

Click this button to activate the configuration set that is currently opened.

SSL Certificate Setup tab

The SSL (Secure Socket Layer) Setup tab is used to list available virtual web servers and certificates. Certificates may then be chosen to be used in conjunction with HGS.

Client Interfaces tab

This tab is used to define to the listening socket(s) for HGS. The listening socket is BOUND to an IP address and a Port.

Host Connections (MCP)

This tab is used to configure open ids. and virtual destinations (host IP address) to be used to connect to hosts (Unisys ClearPath Plus MCP Servers: Libra Series).

Host Connections (U-Series)

This tab is used to configure open ids. and virtual destinations (host IP address) to be used to connect to hosts (Unisys ClearPath Plus OS 2200 Servers: Dorado Series).

SSL Certificate Setup tab

The Secure Socket Layer (SSL) Setup tab is used to list available web servers and certificates. Also, server certificates may be viewed and applied to HGS for a selected server.

Enumerate Web Servers

Click this button to list all available servers.

Server Name | Description

This box contains a list of all servers available on the system hosting the HGS configuration. Select a server from this list box to enable the **Enumerate Server Certificates** button.

Enumerate Server Certificates

After selecting a server from the **Server Name | Description** list box, click this button to list available web server certificates. Certificates are created by the Internet Services Manager (Windows 2000 Server) or by Internet Information Services (IIS) Manager (Windows Server 2003).

Hash/Thumbprint

This list contains the hash (thumbprint) of each certificate listed. Select a certificate from this list box to enable the **View Certificate** and **Use Certificate from Web Server**.

View Certificate

Click this button to view the selected certificate.

Use Certificate from Web Server

Click this button to use the selected certificate on the selected server.

Client Interfaces tab

This tab shows which listening sockets on the server are used when anticipating connections. Information shown in the list box is initially configured by first clicking the **Add** button and using the controls on the subsequent **Configure Interface** dialog. To make changes to an existing interface, click on the first cell of the desired row.

Name

Name of the interface.

Bound IP Address

IP address bound to the port.

Terminal Type

Terminal type: T27 or UTS.

Version

Version: Legacy or Advanced.

Bound Port Number

Port bound to the IP address.

State

Interface state: Started, Suspended or Stopped.

Threads

Number of simultaneous connections allowed through the interface.

Allow Generic Station

If checked, station names will be generated by HGS.

Allow Client Supplied

If checked, the client can to supply the station name. Also see, Station Name Assignment.

Auth Allowed

Shows the allowed authentication, if any, for Server to Client (unidirectional) or bidirectional between Server and client.

Auth Required

Shows the required authentication, if any, for Server to Client (unidirectional) or bidirectional between Server and client.

Encryption

Encryption: None, Allowed or Required.

KA Interval

Shows the number of KeepAlive units configured.

KA Units

KeepAlive units configured: Seconds or Minutes.

Add

Click this button to add a new interface.

Duplicate

Click this button to duplicate a selected interface (row).

Remove

Click this button to delete a selected interface.

Configure Interface

This dialog is used to identify a listening socket on the server that will be used when anticipating connections.

Name

This is the name of the interface an may be any meaningful name.

Terminal Attributes

Controls in this group determine to type of emulation

Type

The terminal type is the type of connection to be made: UTS (ClearPath Plus OS 2200 Servers) or T27 (ClearPath Plus MCP Servers).

Version

This value should be set to "Legacy" when using T27 eXpress or UTS eXpress emulators as the client. "Advanced" is used for client software that supports encryption and/or authentication and soft fail-over with clustering.

Bound Interface

The controls in this group binds an IP address to a port.

IP Address

The IP address is bound to the port to form the listening socket. This value may be a specific server IP address or "All" available server IP addresses.

Port Number

The port is bound to the IP address to form the listening socket. The port for ClearPath Plus OS 2200 Servers is 102 and for ClearPath MCP Servers is 23.

Enable TCP/IP KeepAlive every

In the numeric text box, enter the number of units of time that a TCP/IP KeepAlive packets is to be sent. Click the appropriate option button to select units in either Minutes or Seconds.

Station Names

The controls is this group are used to determine how station names are supplied.

Allow Generic

Check this box if HGS should generate station names based of a configured prefix and offset.

Also see, Station Name Assignment.

Allow Client Supplied

Check this box if the client will be allowed to supply the station name.

Authentication/Encryption

Use this group to set the type of authentication required and optional encryption.

Required

Select the option for required authentication: None, Server to Client only (->) or bidirectional (<->) between Server and Client. Check the Encryption box if you want communications between the Server and Client to be encrypted.

Allowed

Select the option for allowed authentication: None, Server to Client only (->) or bidirectional (<->) between Server and Client. Check the Encryption box if you want communications between the Server and Client to be encrypted.

Runtime Information

Controls in this group specify the runtime state and number of threads for the interface.

State

Set this value to "Started" when you want the interface to become active (accepting connections). When set to "Suspended," no further connections will be accepted, but existing connections will continue. "Stopped" terminates all connections through the interface and prevents further connections.

Note: If an interface that was running has its Initial State set to Suspended when a configuration is saved, no new connections will be accepted through that interface, but existing sessions will continue to operate. If the interface is removed from the configuration, existing sessions will be terminated.

Threads

This is the number of simultaneous connections that will be allowed through this interface.

Links to MCP

Host Connections (MCP) tab

This tab shows which connections are configured for host connection. Information shown in the list box is initially configured by first clicking the **Add** button and using the controls on the subsequent **MCP H**ost Virtual Destination dialog. To make changes to an existing interface, click on the first cell of the desired row.

VD Name

Name of Virtual Destination (host).

Host Address

IP address of the host.

Host Port

IP port address to the host.

Base Station

The alphanumeric name (alpha prefix + numeric suffix) upon which the host station name will be generated.

Var Portion

The number of numeric positions (suffix portion) of the Base Station name that will be incremented in order to always generate a unique host station name.

Max IDs

Maximum number of station names that may be generated.

MCP Host Virtual Destination

This window is used to define a potential host and its connection type.

Name

This is the name of the Virtual Destination being configured.

TCP/IP Connection Information

In this group, identify the host and connection port.

FQDN/IP Addr

In this text box, enter a Fully Qualified Domain Name (FQDN) or IP address ("dotted" notation) of a host.

TCP Port

This text box contains the port address to the host. This number is normally 23.

Connection Type

Unisys (A-Series) and UniGate (V-Series) are currently the only supported connection types.

Station Name Generation Parameters

In this group, enter the values for automatic station name generation.

Base Name

Base Name consists of an alphabetic prefix and a numeric suffix. The Base Name may be from one to sixteen (1-16) characters depending upon the number of active sessions allowed. For example, a Base Name of "STA10123" with Variable Positions set to 3, would allow stations STA10123 through STA10999, or 877 active sessions.

The Host Gateway Server will generate a unique station name for each active client. The name will be an increment of the Base Name.

Variable Positions

The Variable Positions are the trailing digits of the Base Name that the Host Gateway Server will increment when generating station names. The variable positions must consist of all numeric characters. The value represented by these numeric characters, added to the maximum number of stations, minus one, must not cause the creation of additional digits. For example: If base station name = "STA20" and Variable Positions = 2 the maximum number of stations may not exceed 80 (20 + 80 = 100 which is still two digits).

Maximum Ids.

Maximum Ids. is the maximum number of station names that may be generated through this Base Station Name configuration. Maximum number of station names must be greater than zero (0) if station name generation is used.

Links to OS 2200

Host Connections (OS 2200) tab

This tab is used to control the overall operation of the configuration process and to visually configure open id links to a host. The window contains a work area where open ids. and virtual destinations (hosts) may be easily linked together with the use of a mouse.

The work area is divided into two columns: one to configure open ids. and a second to configure virtual destinations. At the top of each column, right click on "Open Ids" or "Virtual Destinations" to reveal a menu of actions for that specific column.

Note: The functions of left and right mouse button may be swapped by selecting the Mouse icon from the Windows Control Panel.

The following is a description of each mouse action and button:

Mouse Actions

Select an Existing Open Id. or Virtual Destination

Use the left mouse button to select an existing open id. or virtual destination.

Edit an Existing Open Id. or Virtual Destination

Double-click the left mouse button on an existing open id. or virtual destination to open the appropriate configuration dialog and edit the required parameters.

A click of the right mouse button over any existing open id. or virtual destination will select the item and reveal a pop-up menu of actions to maintain (Edit, Duplicate, etc.) the item.

Linking a Open Id. or Virtual Destination

To link an existing open id. to a virtual destination, place the mouse cursor over the grey box on the right of the open id. button face and, holding down the left mouse button, drag the mouse cursor over a virtual destination and release the mouse button. A line will appear between the open id. and virtual destination showing that they are linked.

Starting a New Open Id. or Virtual Destination

Right click on the words, "Open Ids" or "Virtual Destinations," and click "Add..." or "Duplicate" to open a new dialog for the respective open id. or virtual destination.

Apply

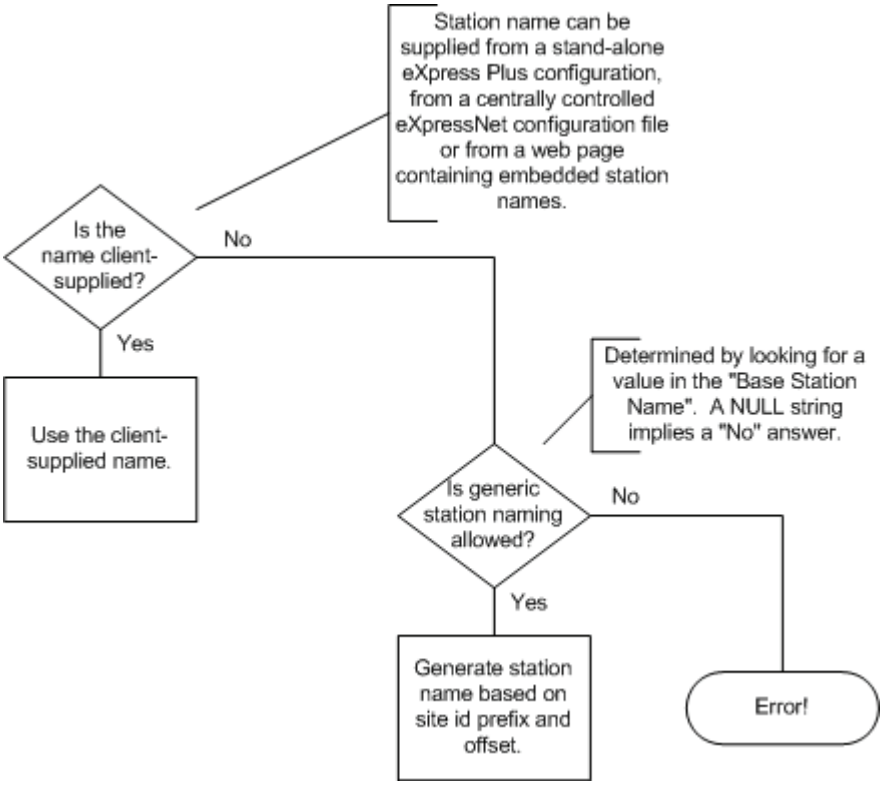
Click this button to apply all changes to the in-core configuration.

Reset

Click this button to remove any changes that since the configuration was opened or since the last "Apply."

Station Name Assignment

Host Gateway Server has the capability to automatically generate station names or allow sites to assign them from client software (UTS eXpress IT, UTS eXpress Plus, UTS eXpress Pro or UTS eXpress Net), from a or from HTML code that is executed when the user access the web page that invokes HGS client. The following diagram illustrates how HGS determines what station name to use:



Client-Supplied Station Names

Station names can be assigned in the HTML code through the StationName property/parameter.

If HGS is being used as a "gateway" for other KMSystems products (eQuate, UTS eXpress Plus, UTS eXpress Net, UTS eXpress Pro and UTS eXpress IT), the station name is supplied from the configuration entries for those emulators. For eXpress Plus, Pro and IT, the station names are configured from within the emulator. For eXpress Net, the station names are configured with the eXpress Net Admin for Limited and Restricted Users; however, Power Users configure their own station names using the emulator.

To use HGS as a gateway, do the following in eQuate, UTS eXpress Plus, UTS eXpress Pro, UTS eXpress IT or UTS eXpress Net:

1. Set up a Virtual Destination with the IP Address of the HGS Communications Server. Use port 102 and select the KMSYS Host Gateway Server (HGS) option.

2. Set up new OpenIds that will be linked to the above virtual destination. You will have to add a new "CMS Process or Telcon XEU" called "HGS". This is what tells the transport to use the HGS Communications Server. In the App. Name, enter an OpenId that you have configured in HGS. You will probably need to set up to two OpenIds: one for TIP and one for DEMAND.
3. Create routes (or use existing routes) and link them to the new OpenId. In UTS eXpress Net for "limited" or "restricted" users, this is done under the user's (or profile) screens.

When one of these new routes is opened, you will go to the HGS Communications Server.

Note: For client-supplied to function, the **Allow Client Supplied** checkbox must be checked on at least one of the configured and started interfaces. See the Configure Interface dialog from the Interface tab.

Host Gateway Server Generated Station Names

To allow the HGS Server to generate station names, use the following procedure:

1. Select a configured interface in a "Started" state and check the **Allow Generic** checkbox. See the Configure Interface dialog from the Configure Interfaces tab.
2. From the Host Connections (U-Series) tab, create or edit a Virtual Destination.
3. Create at least one Base Station Name entry.
4. Create or edit an Open Id.
5. Link the Open Id to the Base Station Name entry from the **Select Station Name Generation Parameters** drop-down list box.

OS 2200 Open Id

This screen is used to define a potential Open Id. used to connect to a host through a Virtual Destination.

Open Id Name

This required name is used to define a connection, IP Address (see Edit Virtual Destination) and Session Type (TIP, DEMAND, etc.), to a host. This name is a user-defined name and, as such, may be anything meaningful to the user.

The Open Id. name specified here has no required relationship to the "$$OPEN open-id" required for non-TCP/IP communications; however, using the same name as required on the "$$OPEN open-id" for non-TCP/IP communications may be the best option when converting users to TCP/IP. Using the same name will allow users to continue using familiar $$OPEN statements.

Process Id/XEU

This group may be used to configure a new CMS Process or Telcon XEU name.

Select

Use the mouse to select from this list and change the Selected CMS Process or Telcon XEU parameter. To add a new process or XEU, type in the text box below and click the Add to List button.

Considerations:

HGS uses the CMS Process or Telcon XEU Name, along with the IP Address, to link to a DEMAND or TIP session (or any other valid termination system).

If the Open Id. connects to a Virtual Destination with a Connect Type of "TP0 to HLC or DCP as IP Router", the Selected CMS Process or Telcon XEU is the PROCESS name in the CMS1100 configuration. Typical values are:

Value CMS Process:

- TIPCSU for TIP
- RSDCSU for DEMAND
- CSACSU for CMS1100 network administration

If the Open Id. connects to a Virtual Destination with a Connect Type of "TP0 to DCP as DCATS", this is the name of an XEU statement in the Telcon configuration. The XEU statements can indicate a connection to destinations on various hosts and DCPs. The DCP destinations can include DCP/OS, TOMF and System 80, as well as more common ones like TIP and DEMAND.

App. Group Name

This is the name of the application to be accessed when the session is to TIPCSU or CSACSU. This name is the name of an APPLICATION statement in the CMS1100 configuration (this field is only valid for PROCESS TIPCSU and CSACSU — it is ignored for other PROCESSes and XEUs).

Virtual Destination

Select from the drop-down list box to link this open id to a configured virtual destination.

Session Type

The controls in this group are only required if your site is using the Unisys Single Point Sign-on feature.

Demand

Select this option if the Open Id will be used to access DEMAND sessions utilizing the Single Point Sign-on feature.

TIP

Select this option if the Open Id will be used to access TIP sessions with the Single Point Sign-on feature.

Application Group Use TIP Session Control

Check this box if your site has TIP Session Control and you are utilizing the Single Sign-On feature.

Other

Select this option if the Open Id will be used to access other session types utilizing the Single Point Sign-on feature. Currently, the only other type supported is for a console.

Select Station Name Generation Parameters

From this drop-down list box, select a previously configured Base Station Name (see OS 2200 Virtual Destination).

OS 2200 Virtual Destination

This screen is used to define a potential host and its connection type. At this time TP0 through an HLC or TP0 through a DCP acting as an IP Router are the only types supported.

Name

This is the name of the Virtual Destination being configured. It will be used to link to an Open Id. on the HOST Connections (OS2200 Series) tab

TCP/IP Connection Information

In this group, identify the host and connection port.

FQDN/IP

In this text box, enter a Fully Qualified Domain Name (FQDN) or IP address ("dotted" notation) of a host. The host can be either a mainframe (e.g., 1100, 2200 or System 80) or a DCP.

If the host is connected via an HLC or a DCP acting as an IP Router, then the address entered should be the address of the host as configured in the host communications software (e.g., CMS1100).

If the host is NOT connected via an HLC or the DCP is NOT acting as an IP Router, then the DCP may be the DCA TS. In this case, the address entered should be the address of the DCP.

TCP Port

This is the IP port for your site (normally, 102).

Connection Type

These option radio buttons are used to indicate the type of connection to be used. This setting must match the type of connection associated with the IP Address above.

Station Name Generation Parameters

The controls in this group are used to maintain the parameters needed when the Host Gateway Server is allowed to generate station names. To make changes to an existing base station name, click on the first cell of the desired row.

Add

Click this button to add a new base station name and associated parameters.

Duplicate

Click this button to duplicate a selected base station name and its parameters.

Remove

Click this button to remove a selected base station name.

Also see, Station Name Assignment.

Edit Station Name Generation Parameters

This dialog is used to control station name generation when the Host Gateway Server is allowed to generate station names.

Base Name

Base Name consists of an alphabetic prefix and a numeric suffix. The Base Name may be from one to sixteen (1-16) characters depending upon the number of active sessions allowed. For example, a Base Name of "T10123" with Variable Positions set to 3, would allow stations T10123 through T10999, or 877 active sessions.

The Host Gateway Server will generate a unique station name for each active client. The name will be an increment of the Base Name. By 2200 standards, the station name is usually six characters in length. If you intend to have one thousand active sessions then you can only use a one or two character prefix.

Note: The use of the letter 'G' as a prefix is not recommended as this will conflict with the 2200 host's use of generic site ids.

Variable Positions

The Variable Positions are the trailing digits of the Base Name that the Host Gateway Server will increment when generating station names. The variable positions must consist of all numeric characters. The value represented by these numeric characters, added to the maximum number of stations, minus one, must not cause the creation of additional digits. For example: If base station name = "TIPA20" and Variable Positions = 2 the maximum number of stations may not exceed 80 (20 + 80 = 100 which is still two digits).

Maximum Names to Generate Maximum Ids. is the maximum number of station names that may be generated through this Base Station Name configuration. Maximum number of station names must be greater than zero (0) if station name generation is used.

Also see, Station Name Assignment.

Glossary

A

Administration Workstation: Any system that had been prepared for running the HGS Configuration Utility.

C

Communications Server: The server system that is running the HGS Service

Configuration Server: Middle tier software that maintains the configuration set and interfaces to the database server. Currently each Communication Server must have a corresponding Configuration Server on the same system.

D

Database Server: System that runs the MSDE installed by the HGS installation. It is shared by multiple Configuration Servers and Communication Servers.

H

HGS: Host Gateway Server

HGS Admin Group: A Windows Domain security group. This must be a Global security group. Only members of this group will be allowed to configure HGS. You may use an existing group or create a new group.

HGS Service: A Windows Service that is the heart of the HGS system. It provides a UTS and T27 type connections to client systems.

K

KeepAlive: A keepalive is a message sent by one device to another to check that the link between the two is operating.

M

MSDE: Microsoft Data Engine - A distributable version of Microsoft SQL.

O

One Touch Install: An program deployment method that does not actually install a program, but instead runs a setup that configures the system to correctly run the program. The program is then served from a web server. The advantage of One Touch Install is that the user will always have the current version without having to install.

Index