Alcatel-Lucent Security Management Server (SMS)

Release 9.4

Tools and Troubleshooting Guide

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About this information product

Purpose

This is the *Tools and Troubleshooting Guide* for the Alcatel-Lucent Security Management Server (SMS) and the Alcatel-Lucent *VPN Firewall Brick*™ Security Appliance. While the heart of this manual explains how to use the command line interface for the SMS and the Brick, we have expanded it to provide the reader more information on the other tools included with the product as well as a basic introduction to troubleshooting the system.

Reason for reissue

Updated with information for Release 9.4.

How this document is organized

There are three sections to this guide:

- SMS Command Line Interface (CLI)
- SMS Tools and Troubleshooting Resources
- Brick CLI

The SMS command line interface provides administrators with an alternative to the SMS graphical user interface (GUI). It allows administrators to perform many - but not all - of the tasks they ordinarily perform from the GUI by executing typed commands and scripts instead.

In the tools and troubleshooting section, we explore recovery of individual items in the database, database utilities as well as a summary of the troubleshooting tools available within the product.

The Brick CLI provides administrators with a means of directly querying the Brick for diagnostic and troubleshooting purposes. This interface is especially useful when communication between the Brick and the SMS is severed. There are a variety of methods available to the administrator to access the Brick console, both directly and remotely.

How to comment

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1 Introduction to the SMS CLI

Overview

Purpose

This chapter provides an introduction to the Alcatel-Lucent Security Management Server (SMS) Command Line Interface (CLI).

Purpose of the CLI

The CLI is an alternative to the SMS graphical user interface (GUI). It enables administrators to log into the SMS and perform administrative tasks using typed commands instead of the graphical components of the GUI.

If you decide to use the Command Line Interface, you will not be able to perform all the tasks that an administrator has to perform. However, administrators will be able to:

- Make changes to existing Alcatel-Lucent VPN Firewall *VPN Firewall Brick*™ Security Appliance policy assignments.
- Review their group security policy and create, edit, and delete all of the following:
  - Brick zone rulesets
  - Host groups
  - Service groups
  - Dependency masks
  - Application filters
- Run commands to create, edit, and delete a Brick, as well as commands to control a Brick, such as apply a policy, reboot, download software, rehome, failover, and refreshmac.
- Make VPN changes to create, edit, delete, enable, and disable Client and LAN-to-LAN tunnels, and saving tunnel information (output of CLI commands) into files for subsequent reuse.

  Important! This manual explains how to use the command line interface to perform specific administrative tasks. It does not describe these tasks in detail or explain when or why they need to be performed.

If the significance of a task is not clear, you need to consult the appropriate manual for a more comprehensive discussion of the task.

Supported Brick devices

The following available Brick models are supported by the current SMS release:

- Alcatel-Lucent *VPN Firewall Brick*™Model 20 Security Appliance
- Alcatel-Lucent *VPN Firewall Brick*™Model 50 Security Appliance
- Alcatel-Lucent *VPN Firewall Brick*™Model 150 Security Appliance
- Alcatel-Lucent *VPN Firewall Brick*™Model 350 Security Appliance
- Alcatel-Lucent *VPN Firewall Brick*™Model 1100/1100A Security Appliance
- Alcatel-Lucent *VPN Firewall Brick*™Model 700 Security Appliance
- Alcatel-Lucent *VPN Firewall Brick*™Model 1200 Standard and HS VPN Security Appliances

Some of the above Brick device models require a specific patch of the current SMS release in order to be fully supported. For details about the SMS patch release required for a specific Brick device model, refer to the *User's Guide* for the Brick device model or contact your Alcatel-Lucent customer support team representative for more information.

Contents

How to Access the SMS Command Line

Overview

The SMS command line interface can be accessed directly from the machine running the SMS application, or by logging into the machine remotely using a utility such as Telnet or SSH. The appropriate service (telnet or ssh) needs to be started on the SMS host.

Important! Telnet service is not as secure, as all of the information is transmitted in clear text. The use of a more secure communication method like SSH is highly recommended.

Before you Begin

Before accessing the command line interface, you should make certain that the appropriate paths and permissions have been set so that the commands execute properly from any directory in your system.

The procedure for doing this differs on machines running the *Microsoft® Windows®*, *Vista™*, *Sun®* Microsystems, Inc.*Solaris®*, and Linux operating systems.

Windows® and *Vista™*

On machines running the *Windows®* XP Professional, Server 2003, or *Vista®* operating systems, you have to add the SMS root directory to your path. To do this, execute the following command:

`SET PATH=%PATH%;<SMSRootDir>`

where *<SMSRootDir>* is the full pathname of your SMS root directory. For example, if your SMS root directory is *c:\users\isms\lmf*, you would execute this command:

SET PATH=%PATH%;c:\users\isms\lmf

If you do not set the *Windows®* or *Vista®* path, you will have to change directory manually before issuing the `lsmslogon` command.

Solaris®

On a machine running the *Solaris®* operating system, the root administrator has to make sure the files generated by the command line interface (see Chapter 3, “SMS CLI Files”) are placed in a directory in which all command line interface users have read and execute privileges.

In addition, all command line interface users should be instructed to add this directory to their paths by executing the following command:

`PATH=$PATH:<directory_name>`

where *<directory_name>* is the name of the directory containing the generated files.

Important! When a user specifies a directory as an argument to the `lsmslogon` command, that directory is created relative to the current directory. Remember to supply the complete path to insure that you are accessing the directory you really want, and avoid the proliferation of similarly named directories throughout the directory tree.

Access the Command Line Interface

You can access the command line interface from the host running the SMS and from a remote machine.

SMS Host

If you are sitting at the host running the SMS, you can access the command line interface by:

- Opening a Command Prompt window (*Windows*®or *Vista*™) or X-term window (*Solaris*®), and
- Executing the `lsmslogon` command (see Chapter 2, "SMS CLI Commands").

Remote

If you are logged into the machine remotely using Telnet or SSH, you can execute the `lsmslogon` command from the Telnet or SSH window.

A Telnet or SSH utility is provided with *Windows*®, *Vista*™, and *Solaris*®. To run Telnet or SSH under *Windows*®or *Vista*™, select **Run** from the *Windows*® or *Vista*™Start menu. In the **Open:** field of the Run pop-up window enter `telnet` or `ssh`, followed by the path to the appropriate machine and directory.

Important! *Windows*® 2000 provides an inbound Telnet or SSH capability, while *Windows*® NT does not. To Telnet or SSH into a Windows machine running the SMS software you must install a third-party Telnet or SSH server.

For security purposes, it is recommended that a secure remote access terminal program such as SSH, rather than telnet, be used to provide access for command line interface functions.

□

How the Command Line Works

Overview

The SMS command line interface allows Administrators to perform many of the tasks they ordinarily perform using the graphical user interface on the SMS.

These tasks can be performed by executing individual commands from the command line interface, or by embedding these commands in scripts and executing the scripts.

The advantage of a script is that it allows you to execute multiple commands in a single action and can be used for automating complex functions in SMS.

Commands

The command line interface consists of the `lsmslogon` command and several other SMS commands.

To execute all of these commands *except* `lsmslogon`, you must precede the command (which can be one or two words) with the character string:

```
lsmscmd
```

as in:

```
lsmscmd gotogrp
```

or:

```
lsmscmd list brickruleset
```

Once an SMS command is executed, the results of the command are reported and you are returned to the control of the operating system. This means you are free to issue another SMS command, or another operating system command.

You can execute a script, or open and use a text editor, and then return to the command line interface and execute another SMS command. You can continue in this mode until you log out and terminate the session.

All SMS commands from the same session must be executed from the same window.

Types of Commands

The commands can be grouped into the following categories.

Access Commands

The access commands are `lsmslogon` and `lsmscmd logout`. To begin a command line interface session, enter `lsmslogon`, followed by the Admin ID, destination directory for generated files, and the password.

To end the session, execute the `lsmscmd logout` command. See the detailed description of the command under “logout” (p. 2-83) in Chapter 2, “SMS CLI Commands”

Help Command

The `lsmscmd help` command displays a list of the other commands and provides a description of the syntax of each command.

Administrator Commands

These commands can be grouped according to the SMS entity they effect: Brick, Brick ruleset, group, host group, service group, or dependency mask. The commands are briefly described in the following table:

Entity	Command	Description
Application Filter Commands	add applicationfilter	Adds a new application filter which then may be included as part of a service group.
	delete applicationfilter	Deletes the application filter specified in the command.
	list applicationfilter	Lists the contents of the application filter specified in the command.
	save applicationfilter	Saves the application filter specified in the command.

Entity	Command	Description
Brick Commands	add brick	Adds a new Brick to the SMS database.
	apply brick	Applies any changed rulesets to their assigned ports on the specified Brick in your current group.
	boot brick	Allows an administrator to reboot a Brick from the command line
	bootgroup	Reboots all Bricks in the current group.
	delete brick	Deletes a Brick from the SMS database.
	download brick	Updates Brick software after an SMS software upgrade.
	failover brick	Initiates failover of a failover Brick pair.
	list brick	Writes the contents of a specified Brick to a file.
	list brickstatus	Outputs a list of Bricks and their current state to the SMS.
	rehome brick	In a redundant SMS configuration, this command reassigns management of a specific Brick to the other SMS of the pair.
	save brick	Saves the contents of the Brick file back into the SMS database.

Entity	Command	Description
Brick Ruleset Commands	add brickruleset	Adds a Brick ruleset to the current group.
	apply brickruleset	Compiles and applies the security policy to any Brick ports that have older versions of the specified Brick ruleset in your current group.
	delete brickruleset	Deletes the specified Brick ruleset from the current group.
	list brickruleset	Retrieves the specified Brick ruleset and stores the information in a file with the name of the Brick ruleset on the machine running the SMS.
	save brickruleset	Saves the specified Brick ruleset in the current group.
Dependency Mask Commands	add dependency masks	Adds a dependency mask with the specified name to the current group.
	delete dependency masks	Deletes the specified dependency mask from the current group.
	list dependency masks	Retrieves the specified dependency mask and stores the information in a file with the name of the dependency mask on the machine running the SMS.
	save dependency masks	Saves the specified dependency mask in the current group.
Host Group Commands	add hostgroup	Adds a host group with the specified name to the current group.
	delete hostgroup	Deletes the specified host group from the current group.
	list hostgroup	Retrieves the specified host group and stores the information in a file with the name of the host group on the machine running the SMS.
	save hostgroup	Saves the specified host group in the current group.

Entity	Command	Description
Service Group Commands	add servicegroup	Adds a service group with the specified name to the current group.
	delete service group	Deletes the specified service group from the current group.
	list servicegroup	Retrieves the specified service group and stores the information in a file with the name of the service group on the machine running the SMS.
	save servicegroup	Saves the specified service group in the current group.
Group Commands	apply group	Applies all changed policies, devices, and rulesets for a given group.
	gotogrp	Changes the group the administrator is working in to the specified group.
	list current group	Echoes back the group that the administrator is currently working in.

Entity	Command	Description
VPN Commands	list brickteps	Lists all the tunnel endpoints of a given Brick to the console.
	list clienttunneldefaults	Retrieves the default Client tunnel configuration to a file.
	save clienttunneldefaults	Saves the default Client tunnel configuration back to the SMS.
	list clienttunnel	Retrieves the specified Client tunnel configuration to a file.
	list unusedclientteps	Lists all the tunnel endpoints of a given Brick that are not used in any existing Client tunnel. The results are displayed on the console.
	save clienttunnel	Save the specified Client tunnel configuration back to the SMS.
	add clienttunnel	Creates a new Client tunnel with the given name to the SMS.
	delete clienttunnel	Deletes the specified Client tunnel from the SMS.
	enable clienttunnel	Enables the specified Client tunnel in the SMS.
	disable clienttunnel	Disables the specified Client tunnel in the SMS.
	list lan2lantunneldefaults	Retrieves the default LAN-to-LAN tunnel configuration to a file.
	save lan2lantunneldefaults	Saves the default LAN-to-LAN tunnel configuration back to the SMS.
	list lan2lantunnel	Retrieves the specified LAN-to-LAN tunnel configuration to a file.
	save lan2lantunnel	Saves the specified LAN-to-LAN tunnel configuration back to the SMS.
	add lan2lantunnel	Creates a new LAN-to-LAN tunnel with the given name to the SMS.
	delete lan2lantunnel	Deletes the specifiied LAN-to-LAN tunnel from the SMS.
	enable lan2lantunnel	Enables the spedified LAN-to-LAN tunnel from the SMS.

Entity	Command	Description
disable lan2lantunnel	Disables the specified LAN-to-LAN tunnel from the SMS.	

Files

The `list` commands retrieve information from the SMS and save it in one or more files on the machine running the SMS. These files are put in the directory that you specify, either when you log in or when you execute the command.

The files that are produced are ASCII files that can be edited using any standard text editor, such as Notepad on Windows or vi on Solaris. To make changes to a file:

- Edit the appropriate file using a text editor.
- Save the file in the SMS (using the `save` commands).
- Load or apply the file to the brick (using the `apply brick` or`apply brick ruleset` commands).

Examples

There are many kinds of tasks you can perform using the command line interface. The following are just a few examples:

- You can execute a `list hostgroup` command, and then edit the resulting host group file.
- You can execute a `list brick` command, and then edit the resulting brick file to add one or more new port assignments.
- You can write a script containing both SMS and non-SMS commands.
  This script could include:
  - An `lsmslogon` command to begin the session,
  - List commands to create the appropriate files,
  - Non-SMS commands to edit the files,
  - Apply commands to apply the results to a Brick, and
  - A `logout` command to terminate the session.

□

2 SMS CLI Commands

Overview

Purpose

This chapter describes the commands that can be executed from the SMS command line interface.

The commands are listed in alphabetical order. For each command, the chapter provides an overview, a description and explanation of the format, and examples.

All the commands in this chapter — except the `lsmslogon` command — must be preceded by the keyword `lsmscmd` and a space.

Objectives

This chapter provides information to do the following:

1. Execute the `lsmslogon` and `logout` commands to begin and end a command line session.
2. Execute the `help` command to display a description of the syntax of each command.
3. Execute the `add hostgroup`, `delete hostgroup`, `list hostgroup`, and `save hostgroup` commands to add, delete, and save host groups, as well as list all available host groups.
4. Execute the `add servicegroup`, `delete servicegroup`, `list servicegroup`, and `save servicegroup` commands to add, delete, and save service groups, as well as list all available service groups.
5. Execute the `add dependencymasks`, `delete dependencymasks`, `list dependencymasks`, and `save dependencymasks` commands to add, delete, and save dependency masks, as well as list all available dependency masks.
6. Execute the `add brickruleset`, `delete brickruleset`, `list brickruleset`, and `save brickruleset` commands to add, delete, and save brick zone rulesets, as well as list all available brick zone rulesets.

7. Execute the `add brick`, `delete brick`, `list brick`, and save brick commands to add, delete, and save Brick devices. Execute the `apply brick` command to apply policy information to a specified Brick. Execute the `list brickstatus` command to obtain a list of Bricks and their current state. Execute the `apply brickruleset` command to apply a ruleset to all ports with that ruleset assigned.
8. Execute the `goto group` command to administer a different group, and execute the `list group` command to see the current group that is being administered.
9. Add, delete, list, and save application filters.
10. List, save, delete, enable, and disable Client and LAN-to-LAN tunnels and list tunnel endpoint information.

Saving the location of all object configuration files via CLI commands

When you add an object (such as a Brick, Brick zone ruleset, service group, domain name group, application filter, host group) using an `add` command, the folder/subfolder location of that object's configuration file is automatically stored in a `foldername` field of the file itself. If you subsequently make modifications to the object's configuration file and save those changes using a `save` command, or later display the contents of a specific object's configuration file using a `list` command (for example, `lsmscmd list applicationfilter smtpDefault`), the subfolder information about where that file is located is preserved in the `foldername` field of the file.

If an object's file has been saved to its respective "root" directory, (for example, if the named Brick is still stored under the *Devices/Bricks* folder, instead of a subfolder under *Devices/Bricks*), the `foldername` field will be blank in the configuration file.

If the object is later modified and saved to a new folder/subfolder location, the folder/subfolder information will automatically be updated in the object's configuration file.

For additional details about the CLI files for objects in the SMS database, refer to Chapter 3, "SMS CLI Files".

Contents

add applicationfilter

Overview

The `add applicationfilter` command adds a new application filter which then may be included as part of a service group.

Format

The format of the `add applicationfilter` command is:

`lsmscmd add applicationfilter <application filter name> [folder name]`

where:

- *<application filter name>* is the name of the new application filter. This arguement is required.
- `[folder name]` is the name of the folder into which you would like the brick ruleset added. This argument is optional.

Explanation

An application filter allows additional application layer validation, inspection and access control on the Brick.

Example

```
lsms add applicationfilter H323
```

This command creates an application filter called H323.

□

add brick

Overview

The `add brick` command creates a new Brick, based on user-specified configuration information provided in a file, in the SMS database.

Format

The format of the `add brick` command is:

`lsmscmd add brick <filename>`

where:

- *<filename>* is the name of the configuration file for the Brick being created.

Explanation

Use the `add brick` command to add a new Brick instance to the SMS database.

Executing this command is equivalent to right-clicking on the Bricks folder, selecting **New Brick** from the pop-up menu, completing the GUI fields, and selecting **Save**.

All of the configuration information for a Brick is specified in a file. The name of the file is *<filename>* and is located on the SMS in the directory *<cli dir>/<group>/Devices/Bricks</Folder1/SubFolder1>*, where *<cli dir>* is given as an argument to the lsmslogon command, *<group>* is the current group that you are in when executing the `add brick` command, */Devices/Bricks* is the path to the object folder where the file is located. A Brick instance may be added and saved to a folder/subfolder below */Devices/Bricks*; this folder/subfolder path information is saved in the Brick's configuration file. By default, the group is **system**.

Data in the Brick configuration file is organized in a `<name>=<value>` format. To specify table data, an index is added to the name to specify the row in the table to which it applies.

Only one name/value pair exists per line. The order of the lines do not affect the execution of the command.

The following table describes each name/value pair that is defined in the file for a new Brick:

Field	Explanation
`foldername`	This field indicates the path to the folder/subfolder where the named entity is saved (i.e., foldername=folder1/subfolder1). If this field is left blank, the named entity is saved in its respective root folder.
name= <brick name>	The name of the Brick that appears in the **Brick Name** field on the Brick tab. You cannot modify the name of a Brick.
firewallIP= <IP address|"" >	The Brick IP address that in the **Brick IP Address** field on the Brick tab. It may be blank if the Addressing Method is not a static address. The IP address of a Brick cannot be modified.
mobile=true|false	This corresponds to the checkbox labeled **Dynamically Learn Address** that appears on the Brick tab. The value **true** is equal to a checked checkbox.
gateway= <IP Address|dhcp|pppoe1|pppoe2>	The gateway IP address that appears in the SMS GUI in the **Gateway IP Address** field on the Brick tab. This field may be blank. If the radio button for the Brick/Gateway IP Addressing Method is set for **DHCP**, then this field is **dhcp**. If the radio button is set for **PPPOE #1**, then this field is pppoe1. If the radio button is set for **PPPOE #2**, then this field is **pppoe2**.
description= <one line description>	The description that appears in the **Description**field on the Brick tab. This field is optional.

Field	Explanation
showVLANView=true|false	This corresponds to the checkbox labeled **Always Show VLAN Information** on the Brick tab. The value true is equal to a checked checkbox. This field is used to indicate if VLAN-specific information should be displayed on the SMS GUI or exposed in the CLI file. Once this field is set to **true**, it cannot be changed back to **false**. If set to false, the following fields are not displayed by the `list brick`command (inputting the fields manually has no effect):*VLANDomain, VLANMembership, receiveFormat, transmitFormat, partitionCount, partitionName, partitionVLANID, zoneVLANID, sourcePartition, nextHopPartition, allowBridgedVLANs*
timeOffsetFromSms= <number>	This is the time offset that appears in the **SMS Relative Time Offset** field on the Brick tab. The value range is from *-24* to *24* and can accept decimal values (example: *3.5*).

Field	Explanation
brickType= <brick type>	This is the Brick type that appears in the **Brick Type** field on the Brick tab. The *<brick type>* value is as follows for each Model Brick: *microbrick* for the Model 20 or 50 *brick* for the Model 80, 150, or 201 *brick300* for the Model 300 (unsupported) *brick350* for the Model 350 *brick500* for the Model 500 (unsupported) *brick700* for the Model 700 (0/0/8/0) *brick700B* for the Model 700 (0/0/2/6) *brick1000* for the Model 1000 (9/2/0) (unsupported) *brick1000B* for the Model 1000 (7/2/0) (unsupported) *brick1000C* for the Model 1000 (5/4/0) (unsupported) *brick1100A* for the Model 1100 (7/0/13) *brick1100B* for the Model 1100 (7/4/1) *brick1100C* for the Model 1100 (7/6/1) *brick1200A* for the Model 1200 (0/0/8/2) *brick1200B* for the Model 1200 (0/0/14/6)
stickiness= <number in secs>	This field corresponds to the **Rehome Delay field** on the Brick tab. If the checkbox labeled **Rehome If Higher Priority SMS or LSCS Is Available** is unchecked, then this field should have the value **0**.

Field	Explanation
priorityLsMSIPIP=<IPaddress,...>adminServerIP= <IP address,...> *adminServerGateway= <default|IPaddress,...>* *adminServerName= <name,...>* *adminServerType= <type,...>* *adminServerAssocSMS= <assocSMS,...>*	These fields contain comma-separated lists of the information found in the Home SMS/CS Priority table on the Brick tab of the Brick Editor. The order of the comma-separated items corresponds to the order in which the SMSs appear in this table. `priorityLsMSIP` is the private or public address of the SMS as defined in the SMS Editor. If a modified address is required to contact the SMS from the Brick, the modified address is specified in the `adminServerIP` field. If a modified address is not required, `adminServerIP` contains the same value as `prioritySMSIP`. If a different gateway than the one specified in the "gateway" field is required to contact the SMS, this address is specified in `adminServerGateway`. If the Brick can use the IP address specified in the "gateway" field, `adminServerGateway` contains the keyword `default`. `adminServerName`, `adminServerType`, and `adminServerAssocSMS` contain the server names, types, and associated SMSs that correspond to the IP address(es) listed in the `prioritySMSIP` field. These last three fields are returned by the `list brick` command, but they cannot be modified, so they are not required in the add or save commands. If the `adminServerIP` address is not in the range of one of the VLANs assigned to the local partition, an IP address must be specified in the gateway field.

Field	Explanation
brickInterfaceCount	In the following fields that refer to **brickInterfaceCount**, the value of this field is derived from brickType as follows: if **brickType** is **microbrick, brickInterfaceCount=4** if **brickType is brick, brickInterfaceCount=5** if **brickType** is **brick350, brickInterfaceCount**=*9* if **brickType** is **brick1000A, brickInterfaceCount**=**8** if **brickType** is **brick1000B, brickInterfaceCount**=*10* if **brickType** is **brick1000C, brickInterfaceCount**=*12* if **brickType** is **brick1000D, brickInterfaceCount**=*21* if **brickType** is **brick1100B, brickInterfaceCount**=*13* if **brickType** is **brick1100C, brickInterfaceCount**=*15* if **brickType** is **brick1200A, brickInterfaceCount =** *21* if **brickType** is **brick1200B, brickInterfaceCount=***11*
interfaceName[i]= <port name>	**i** is in the range of **0..brickInterfaceCount-1**. This field corresponds to the **Port** field on the Physical Ports tab of the Brick Editor.
aggregatePort[i]= <port name>	**i** is in the range of **0..brickInterfaceCount-1**. This field corresponds to the **Aggegate With** field on the Physical Ports tab of the Brick Editor. This field is optional.
portDescription [i]= <one line port description>	**i** is in the range of **0..brickInterfaceCount-1**. This field corresponds to the Description field on the Physical Ports tab of the Brick Editor.
VLANDomain[i]= <vlan domain>	**i** is in the range of **0..brickInterfaceCount-1**. This field corresponds to the VLAND Domain field on the Physical Ports tab of the Brick Editor. **showVLANView** must be checked to see this field on the SMS GUI.
defaultVLANID[i]= <vlan id or range>	**i** is in the range of **0..brickInterfaceCount-1**. This field corresponds to the **Default VLAN ID** field on the Physical Ports tab of the Brick Editor. **showVLANView** must be checked to see this field on the SMS GUI. In the CLI file, this field can be cross-referenced with the VLANID field to determine the IP Address/Mask (**VLANipAddress**) assigned to each Ethernet port (**interfaceName**).

Field	Explanation
VLANMembership[i]= <vlan id or range>	**i**is in the range of **0..brickInterfaceCount-1**. This field corresponds to the **VLAN Membership** field on the Physical Ports tab of the Brick Editor. **showVLANView**must be checked to see this field on the SMS GUI.
receiveFormat [i]= <Untagged | 802.1Q | Any>	**i** is in the range of **0..brickInterfaceCount-1**. This field corresponds to the **Receive Format** field on the Physical Ports tab of the Brick Editor. **showVLANView** must be checked to see this field on the SMS GUI.
transmitFormat[i]= <Untagged | 802.1Q | Any>	**i** is in the range of **0..brickInterfaceCount-1**. This field corresponds to the **Transmit Format** field on the Physical Ports tab of the Brick Editor. **showVLANView** must be checked to see this field on the SMS GUI.
dhcpRequest[i]=true | false	**i** is in the range of **0..brickInterfaceCount-1**. This field corresponds to the checkbox labeled **Send/Receive DHCP request on this port**on the Physical Ports tab of the Brick Editor. **true** means that the checkbox is checked.
enableQOS[i]=true | false	**i** is in the range of **0..brickInterfaceCount-1**. This field corresponds to the checkbox labeled Enable Port Bandwidth Parameters on the Physical Ports tab of the Brick Editor. **true** means that the checkbox is checked.
transmitBitRate[i]= <number>B|K|M|G	**i** is in the range of **0..brickInterfaceCount-1**. **B**=Bits/sec **K**=Kilobits/sec **M**=Megabits/sec **G**=Gigabits/sec This field corresponds to the **Transmit Bandwidth** field on the Physical Ports tab of the Brick Editor.

Field	Explanation
receiveBitRAte[i]= <num ber>*B|K|M|G*	**i** is in the range of **0..brickInterfaceCount-1**. **B**=Bits/sec **K**=Kilobits/sec **M**=Megabits/sec **G**=Gigabits/sec This field corresponds to the **Receive Bandwidth** field on the Physical Ports tab of the Brick Editor.
interfaceMode[i]= <auto |100BASE-TXFD | 100BASE-TX | 10BASE-TFD | 10BASE-T | 1000BASE-FXFDFC | 1000BASE-FXFDnoF>	**i** is in the range of **0..brickInterfaceCount-1**. This field corresponds to the Mode field on the Physical Ports tab of the Brick Editor. The values are as follows: **auto**=Auto **100BASE-TXFD**=100Mb Full Duplex **100BASE-TX**=100Mb Half Duplex **10BASE-TFD**=10Mb Full Duplex **10BASE-T**=10Mb Half Duplex **1000BASE-FXFDFC**=1000Mb Full Duplex - Flow Control On **1000BASE-FXFDnoFC**=1000Mb Full Duplex - Flow Control Off The last two choices are for Gigabit ports only.
enableJumboFrame[i]=true|false	**i** is in the range of **0..brickInterfaceCount-1**. This field corresponds to the field labeled **Enable Jumbo Frames**on the Physical Ports tab of the Brick Editor. true means Yes. This field is only visibile for Gigabit ports on the SMS GUI.
mtu[i]= <512-1500>	**i** is in the range of **0..brickInterfaceCount-1**. This field corresponds to the **MTU** field on the Physical Ports tab of the Brick Editor. This field may be blank. MTU can be larger than 1500 if Jumbo Frames is enabled.
ignoreHeartBeatFailures[i]= true|false	**i** is in the range of **0..brickInterfaceCount-1**. This field corresponds to the checkbox labeled **Ignore heartbeat failures on this link** on the Physical Ports tab of the Brick Editor. **true** means that the checkbox is checked.

Field	Explanation
brickVLANIPCount= <number of VLAN/IP assignments>	This count is the number of rows on the VLAN/IP Assignment tab. This tab is only displayed if **showVLANView** is checked.
VLANID[i]= <vlan id>	**i** is in the range of **0..brickInterfaceCount-1**. This field corresponds to the the **VLAN ID** field on the VLAN/IP Assignment tab of the Brick Editor. In the CLI file, this field can be cross-referenced with the **defaultVLANID** field to determine the IP Address/Mask (**VLANipAddress**) assigned to each Ethernet port (**interfaceName**).
VLANipAddress[i]= <IP address mask> | dhcp | pppoe1 | pppoe2	**i** is in the range of **0..brickInterfaceCount-1**. If **showVLANView** is **true**, this field corresponds to the **IP Address/Mask** field on the VLAN/IP Assignment tab of the Brick Editor; otherwise, it corresponds to the **IP Address/Mask** field on the Physical Ports tab of the Brick Editor.
allowBridgedVLANs=true|false	This field corresponds to the checkbox labeled **Bridge VLANs** in same partition with same IP Address/Mask at the bottom of the VLAN/IP Assignment tab of the Brick Editor. **true**means that the checkbox is checked.
partitionCount= <number of partitions>	This count is the number of rows on the Partitions tab of the Brick Editor. This tab is only displayed if **showVLANView** is checked.
partitionNam [i]= <partition>	*i* is in the range of *0..brickInterfaceCount*-1. This field corresponds to the Partition field on the Partitions tab of the Brick Editor.
partitionVLANID[i]= [local,] <vlan id | comma separated list | range>	**i** is in the range of **0..brickInterfaceCount-1**. This field corresponds to the **VLAN IDs** field on the Partitions tab of the Brick Editor. Adding **local** to the list of vlan ids is equivalent to checking the **Local Partition for SMS Communication** checkbox in the Brick VLAN Partition Editor.
localPartition= <partition>	This field corresponds to the partition name that is assigned as the **Local Partition for SMS Communication**. If no partition in the list has this checkbox explicitly checked, then the **localPartition** is *Default. Only one partition can be the local partition.

Field	Explanation
zoneInterfaceCount= <number of policy assignments>	This count is the number of rows on the Policy Assignment tab of the Brick Editor. There can be more than one entry per port. The first row, the one with the firewall zone on the local port and an index of *0*, cannot be modified.
interfaceNumber[i]= <index of interfaceName>	**i** is in the range of **0..brickInterfaceCount-1**. The value of this field indirectly determines the *Port* field on the Policy Assignment tab (Basic tab). It is the index (row) into the Brick Interface table that is used here in the Zone interface. The Policy Assignment tab Port=**interfaceName [interfaceNumber [i]].**
policy[i]= <zone ruleset>	**i** is in the range of **0..zoneInterfaceCount-1**. This field corresponds to the Zone Ruleset field on the Policy Assignment tab of the Brick Editor (Basic tab).
virtualBrickAddress[i]= <IP address | dhcp | pppoe1 | pppoe2	**i** is in the range of **0..zoneInterfaceCount-1**. This field corresponds to the **Tunnel Endpoint/Virtual Brick Address** field on the Policy Assignment tab (Basic tab). Note: the TEP/VBA Addressing Method radio buttons are encoded as values in this field.
matchVBAPackets[i]=true|false	**i** is in the range of **0..zoneInterfaceCount-1**. This field corresponds to the checkbox labeled **Match Packets to or from this VBA** on the Policy Assignment tab ->Basic tab. **true** means that the checkbox is checked.
*zoneIPHost[i]= <host group> zoneIPAddressOrRange [i]= <IP address | range| subnet mask | *>*	**i** is in the range of **0..zoneInterfaceCount-1**. These fields correspond to the **Hosts Behind Tunnel/Zone IP Adddresses** field on the Policy Assignment tab—> Basic tab. If one is filled in, the other is blank.
localPresenceHost[i]= <host group> localPresenceOrRange [i]= <IP adddress | range | subnet mask>	**i** is in the range of **0..zoneInterfaceCount-1**. These fields correspond to the **Local Map Adddresses** field on the Policy Assignment tab —>Basic tab. If one is filled in, the other is blank.

Field	Explanation
vpnCertificate[i]= <certificate>	**i** is in the range of **0..zoneInterfaceCount-1**. This field corresponds to the **VPN Certificate**field on the Policy Assignment tab —> Basic tab. It may be blank.
defaultAuthService[i]= <authentication service>	**i** is in the range of **0..zoneInterfaceCount-1**. This field corresponds to the **Authentication Service**field on the Policy Assignment tab —> Basic tab. It may be blank.
AuthTimeOut [i]= <number of minutes>	**i** is in the range of **0..zoneInterfaceCount-1**. This field corresponds to the **Authentication Timeout** field on the Policy Assignment tab —> Basic tab.
*SourceIPs[i]= <IP address | comma separated list | range | *>*	**i** is in the range of **0..zoneInterfaceCount-1**. This field corresponds to the **Allowed Source IP Addresses** *field on the Policy Assignment tab —> Basic tab.*
localAddressmapping[i]=direct	**i** is in the range of **0..zoneInterfaceCount-1**. This field is not shown in SMS GUI. It is hardcoded to **direct**.
zonePriority[i]=<0..31>	**i** is in the range of **0..zoneInterfaceCount-1**. This field corresponds to the **Zone Priority** field on the Policy Assignment tab—> Bandwidth tab.
maxQueueLatency[i]= <number in milliseconds>	**i** is in the range of **0..zoneInterfaceCount-1**. This field corresponds to the **Maximum Queue Latency**field on the Policy Assignment tab —> Bandwith tab.
guarZoneRateIn[i]= <number> B|K|M|G	**i** is in the range of **0..zoneInterfaceCount-1**. **B**=Bits/sec **K**=Kilobits/sec **M**=Megabits/sec **G**=Gigabits/sec A bare number represents bits/sec. This field corresponds to the **Guarantees Into Zone** field on the Policy Assignment tab —> Bandwidth tab.

Field	Explanation
maxZoneRateIn[i]= <number> B|K|M|G	**i** is in the range of **0..zoneInterfaceCount-1**. **B**=Bits/sec **K**=Kilobits/sec **M**=Megabits/sec **G**=Gigabits/sec A bare number represents bits/sec. This field corresponds to the **Limits Into Zone** field on the Policy Assignment tab —> Bandwidth tab.
maxZoneRateOut[i]= <number> B|K|M|G	**i** is in the range of **0..brickInterfaceCount-1**. **B**=Bits/sec **K**=Kilobits/sec **M**=Megabits/sec **G**=Gigabits/sec A bare number represents bits/sec. This field corresponds to the **Limits Out of Zone** field on the Policy Assignment tab —> Bandwidth tab.
maxZoneConcSession[i]= <number>	**i** is in the range of **0..zoneInterfaceCount-1**. This field corresponds to the **Limits Into Zone...Simultaneous Sessions** field on the Policy Assignment tab —> Bandwidth tab of the Brick Editor.
maxZoneConcSessTotal[i]= <number>	**i** is in the range of **0..zoneInterfaceCount-1**. This field corrsponds to the **Limits Entire Zone...Simultaneous Sessions** field on the Policy Assignment tab —> Bandwidth tab of the Brick Editor.

Field	Explanation
qosParamsActive[i]= <2 digit hex number>	**i** is in the range of **0..zoneInterfaceCount-1**. This field is an ASCII hex representation of a byte that encodes the enabled/disabled setting of the seven QOS fields combined. **guarZoneRateIn —>** bit 1 **guarZoneRateOut —>** bit2 **maxZoneRateIn —>**bit 3 **maxZoneRateOut —>** bit 4 **maxZoneConSessTotal —>**bit 5 **maxZoneConcSessIn —>**bit 6 Example: **qosParamsActive [2] = [17]** In the above example, **guarZoneRateIn, guarZoneRateOut, maxZoneRateIn, maxZoneConcSessTotal** are enabled, while **maxZoneRateOut, maxzoneConcSess** and **maxZoneConcSessOut** are disabled.
setTOSDiffServBits[i]=true|false	**i** is in the range of **0..zoneInterfaceCount-1**. This field corresponds to the **Set TOS/DiffServ Bits** checkbox on the Policy Assignment tab —> Bandwidth tab. **true** means that the checkbox is checked.
separateBorrowSetting[i]= true|false	**i** is in the range of **0..zoneInterfaceCount-1**. This field corresponds to the **Bit Template** radio buttons on the Policy Assignment tab —> Bandwidth tab.
bitPatternNonBorrow[i]= <2 digit hex number>	**i** is in the range of **0..zoneInterfaceCount-1**. This field corresponds to any of the **Raw Bit, Hex**, and **Verbal view**fields on the Policy Assignment tab —> Bandwidth tab. This is the set of fields on the left hand side when **Separate Guarantee Settings** is checked, or shown alone if unchecked. If **Separate Guarantee Settings** is unchecked, then **bitPatternBorrow [i]**should take on the value of **bitPatternNonBorrow [i]**.

Field	Explanation
bitPatternBorrow[i]= <2 digit hex number>	**i** is in the range of **0..zoneInterfaceCount-1**. This field corresponds to any of the **Raw Bit, Hex**, and **Verbal view** fields on the Policy Assignment tab —> Bandwidth tab. This is the set of fields on the right hand side when **Separate Guarantee Settings** is checked, or shown alone if unchecked. If **Separate Guarantee Settings** is unchecked, then **bitPatternBorrow [i]** should take on the value of **bitPatternNonBorrow [i]**.
routeCount= <number of static routes>	This count is the number of rows on the Static Routes tab.
sourcePartition[i]= <partition>	**i** is in the range of **0..routeCount-1**. This field corresponds to the **Partition**field on the Static Routes tab. showVLANView must be checked to see this field on the SMS GUI.
routeDisable[i]=true|false	**i** is in the range of **0..routeCount-1**. This field corresponds to the **Route Active**field on the Static Routes tab. **true** means that the route is disabled.
destinationNetwork [i]=true|false	**i** is in the range of **0..routeCount-1**. On the Static Routes tab, this field corresponds to the **Destination** field when **showVLANView** is checked, and **Destination IP Address/Mask** when it is not checked.
gatewayIP[i]= <IP address>	**i** is in the range of **0..routeCount-1**. On the Static Routes tab, this field corresponds to the **Next Hop** field when **showVLANView** is checked and the **Gateway IP**radio button is checked in the Brick Static Route Editor, or it corresponds to the **Gateway IP Address** field when **showVLANView** is not checked.
nextHopPartition [i]= <partition>	**i** is in the range of **0..routeCount-1**. On the Static Routes tab, this field corresponds to the **Next Hop** field when the Partition radio button is checked in the Brick Static Route Editor. **showVLANView** must be checked to see this field on the SMS GUI.

Field	Explanation
routeDescription[i]=	**i** is in the range of **0..routeCount-1**. This field corresponds to the **Description** field on the Static Routes tab.
verifyRoute[i]=true|false	**i** is in the range of **0..routeCount-1**. Set this field to `true` to enable cost-based routing.
routeCost[i]=<0-32767>	**i** is in the range of **0..routeCount-1**. The Brick uses the lowest cost, available route.
routePingDestAddr[i]=<IP Address>	**i** is in the range of **0..routeCount-1**. The IP address of the router or other device to be pinged by the Brick to determine if this route is still available.
routePingSrcAddr[i]=<IP Address>	**i** is in the range of **0..routeCount-1**. The source IP address of the Brick interface from which the ping will originate (either a VBA for the Brick, interface/VLAN address, pppoe1, pppoe2, or dhcp).
routePingInterval[i]=<2-999>	**i** is in the range of **0..routeCount-1**. The time interval for sending a ping, in seconds. The default value is 10.
routePingTimeout[i]=<1-99>	**i** is in the range of **0..routeCount-1**. The maximum time to wait for a ping response, in seconds. The default value is 1.
routePingMaxFail[i]=<1-999>	**i** is in the range of **0..routeCount-1**. The number of consecutive responses to fail before the route is declared to be unavailable. The default value is 3.
proxycount= <number of static routes>	This count is the number of rows on the Proxies tab. To see all rows, uncheck the **Hide System Proxy Entities** checkbox.
zone[i]= <brick ruleset>	**i** is in the range of **0..proxyCount-1**. This field corresponds to the **Zone** field on the Proxies tab.
service[i]= <proto/dest port/src port>	**i** is in the range of **0..proxyCount-1**. This field corresponds to the *Service* field on the Proxies tab.
proxyDescription[i]= <one line description>	**i** is in the range of **0..proxyCount-1**. This field corresponds to the **Description** field on the Proxies tab.

Field	Explanation
proxyIP[i]= <IP address> |@ManageServer	**i** is in the range of **0..proxyCount-1**. This field corresponds to the **Proxy IP** field on the Proxies tab. The value **SMS_IP** in the GUI corresponds to **@ManageServer** in the file.
proxyPort[i]= <port>	**i** is in the range of **0..proxyCount-1**. This field corresponds to the **Proxy Port** field on the Proxies tab.
encrypt[i]=true|false	**i** is in the range of **0..proxyCount-1**. This field corresponds to the **Encrypt** field on the Proxies tab.
thekey[i]= <16 hex chars>	**i** is in the range of **0..proxyCount-1**. This field corresponds to the **Key** field on the Proxies tab.
reflectionType[i]=single|dual	**i** is in the range of **0..proxyCount-1**. This field corresponds to the **Reflection** field on the Proxies tab.
passNoLPA[i]=true|false	**i** is in the range of **0..proxyCount-1**. This field corresponds to the If **LPA Unavailable Pass Traffic** checkbox on the Proxies tab. true means that the checkbox is checked.
enableICM=true|false	This field corresponds to the checkbox labeled **Enable Intelligent Cache Management** on the Cache Mgmt tab. **true** means that the checkbox is checked.
activationThreshold= <1-100>	This field corresponds to the **Global Activation Threshold** field on the Cache Mgmt tab.
targetFloorUtiliziation= <0-99>	This field corresponds to the **Target Floor Utilization** field on the Cache Mgmt tab.
icmCount= <number of cache mgmt entries>	This count is the number of rows on the Cache Mgmt tab.
icmName[i]= <name>	**i** is in the range of **0..icmCount-1**. This field corresponds to the **Name** field on the Cache Mgmt tab.
icmDescription[i]= <one line description>	**i** is in the range of **0..icmCount-1**. This field corresponds to the **Description** field on the Cache Mgmt tab.

Field	Explanation
*icmService[i]=tcp|udp|icmp|**	**i** is in the range of **0..icmCount-1**. This field corresponds to the **Service** field on the Cache Mgmt tab.
icmThreshold[i]= <0-100>	**i** is in the range of **0..icmCount-1**. This field corresponds to the **Threshold** field on the Cache Mgmt tab.
icmAudit[i]=yes|no|any	**i** is in the range of **0..icmCount-1**. This field corresponds to the **Audit** field on the Cache Mgmt tab.
icmDrop[i]=yes|no|any	**i** is in the range of **0..icmCount-1**. This field corresponds to the **Drop** field on the Cache Mgmt tab.
icmHalfOpen[i]=yes|no|any	**i** is in the range of **0..icmCount-1**. This field corresponds to the **Half-Open** field on the Cache Mgmt tab.
pppoeAsRedundantPair= true|false	This field corresponds to the **Treat the two PPPoE sessons as a redundant pair** checkbox on the Dynamic Addresses tab. **true** means that the checkbox is checked.
*dhcpServers= <IP address|IP address with subnet mask>|** *dhcpServerHostGroupName= <host group>*	These fields correspond to the **Allow DHCP responses from these servers** field on the Dynamic Addresses tab. One has a value and the other is blank. * is only allowed if the DHCP Request Method is Broadcast Discover.
*dhcpAdddresses= <IP address|IP address with subnet mask>|** *dhcpAddressHostGroupName= <host group>*	These fields correspond to the **Allow DHCP addresses in range**field on the Dynamic Addresses tab. One has a value and the other is blank.
dhcpMethod=broadcast|unicast	This field corresponds to the **DHCP Request Method** radio buttons on the Dynamic Addresses tab.
pppoe1UserId= <user id>	This field corresponds to the **User ID** field in the PPPoE #1 Options of the Dynamic Addresses tab.
pppoe1Password= <passwd>	This field corresponds to the **PAP Password field** inthe PPPoE #1 Options of the Dynamic Addresses tab.

Field	Explanation
pppoe1MACAddr=	This field corresponds to the **MAC Address** field in the PPPoE #1 Options of the Dynamic Addresses tab.
pppoe1KeepAliveIntv1= <number in secs>	This field corresponds to the **Keep-Alive Interval** field in the PPPoE #1 Options of the Dynamic Addresses tab.
pppoe1KeepAliveRetryCnt= <count>	This field corresponds to the **Keep-Alive Retry Count**field in the PPPoE #1 Options of the Dynamic Addresses tab.
pppoe2UserId= <user id>	This field corresponds to the **User ID** field in the PPPoE #2 Options of the Dynamic Addresses tab.
pppoe2Password= <passwd>	This field corresponds to the **PAP Password field** inthe PPPoE #2 Options of the Dynamic Addresses tab.
pppoe2MACAddr=	This field corresponds to the **MAC Address** field in the PPPoE #2 Options of the Dynamic Addresses tab.
pppoe2KeepAliveIntv1= <number in secs>	This field corresponds to the **Keep-Alive Interval** field in the PPPoE #2 Options of the Dynamic Addresses tab.
pppoe2KeepAliveRetryCnt= <count>	This field corresponds to the **Keep-Alive Retry Count**field in the PPPoE #2 Options of the Dynamic Addresses tab.
pppoe2ChapKey= <hex chars>	This field corresponds to the **CHAP Key** field in thePPPoE #2 Options of the Dynamic Addresses tab. The SMS GUI allows you to view it in several representations. The CLI must have this value represented in hex.
auditWait=true|false	This field corresponds to the **Halt All Traffic If Audit Fails** checkbox on the Options tab. *true* means that the checkbox is checked.
multicastToFirstZone=true|false	This field corresponds to the **Route Multicast Packets To First Matching Zone** checkbox on the Options tab. **true** means that the checkbox is checked.
autoRefreshMac=false	This field corresponds to the **Allow MAC Addresses To Move** checkbox on the Options tab. **true** means that the checkbox is checked.

Field	Explanation
useBrickAddr=true|false	This field corresponds to the Use **Brick Address Instead OfPort Address During Bootstrap** checkbox on the Options tab. **true** means thatthe checkbox is checked.
routeReturn=true|false	This field corresponds to the **Route Return Path Packets toCached Source MAC Address** checkbox on the Options tab. **true** means that the checkbox is checked.
enableBrickFailover=true|false	This field corresponds to the **Enable Brick Failover** checkbox on the Failover tab. **true** means that the checkbox is checked.
failoverActvTime= <number of 10ths of secs>	This field corresponds to the **Activation Time** field on the Failover tab.
failoverYldTime= <number in 10ths of secs>	This field corresponds to the **Yield Time** field on the Failover tab.
failoverPrfStshInt=ether <n> |auto	This field corresponds to the **Preferred State-Sharing Port** field on the Failover tab.
encryptPreferredLink=true|false	This field corresponds to the two radio buttons **Encrypt all links and Encrypt all links except Preferred State-Sharing link** on the Failover tab. Checking **Encrypt all links** means **true**. Checking **Encrypt all links except Preferred State-Sharing link** means **false**.
macAddressA=<2-6 hex octets, colon separated>	This field corresponds to the **Ether 0 MAC Address** field of Brick A on the Failover tab. If fewer than six octets are entered, the Brick will try to match this with the rightmost portion of the MAC address.
macAddressB=<2-6 hex octets, colon separated>	This field corresponds to the **Ether 0 MAC Address** field of Brick B on the Failover tab. If fewer than six octets are entered, the Brick will try to match this with the rightmost portion of the MAC address.
failoverLabelA=<up to 16 char label>	This field corresponds to the **Failover Label** field of Brick A on the Failover tab.
failoverLabelB=<up to 16 char label>	This field corresponds to the **Failover Label** field of Brick B on the Failover tab.
primaryBrick=<brickA, brickB, none>	This field corresponds to the Brick designated as Primary (if any) on the Failover tab.

Field	Explanation
failbackDelay=<number in seconds>	The length of time the Bricks must be in continuous contact before the failover to the Primary Brick is initiated. This field corresponds to the **Fail Back Delay (secs)** field on the Failover tab.
pingMinActive=<number in seconds>	The minimum time, in seconds, that a Brick must be active before initiating a failover due to loss of ping. This field corresponds to the **Min Time active before Failover (secs)** field on the Failover tab.
pingFailoverCount=<number of ping failover entries>	This count is in the number of rows in the Ping Failover Table.
pingFoDestinationIP[i]=<IP address>	*i* is in the range *0..pingFailoverCount-1*. The IP address the Brick will attempt to ping. This field corresponds to the **Ping Destination IP Address** field on the Failover tab.
pingFoSourceIP[i]=<IP address>	*i* is in the range *0..pingFailoverCount-1*. The IP address the Brick will use as the source address for the ping. This field corresponds to the **Ping Source IP Address** field on the Failover tab.
pingFoInterval[i]=<number in seconds>	*i* is in the range *0..pingFailoverCount-1*. The interval, in seconds, at which to send the ping. This field corresponds to the **Ping Interval** field on the Failover tab.
pingFoTimeout[i]	*i* is in the range *0..pingFailoverCount-1*. The maximum time to wait for a ping responses. This field corresponds to the **Ping Timeout** field on the Failover tab.
pingFoFailureThreshold[i]=<number of pings>	*i* is in the range *0..pingFailoverCount-1*. The number of consecutive responses to pings that are required to fail before initiating a failover. This field corresponds to the **Ping Failures** field on the Failover tab.
pingFoPartition[i]=partition name	*i* is in the range *0..pingFailoverCount-1*. The partition from which to initiate the ping. This field corresponds to the **Ping Partition** field on the Failover tab.
pingFoDescription[i]=<description>	*i* is in the range *0..pingFailoverCount-1*. A description for this ping failover entry. This field corresponds to the **Description** field on the Failover tab.

Field	Explanation
enableMsgsNoLogin=true|false	This field corresponds to the **Enable Messages to Serial Port Without Logging In** checkbox on the Options tab. **true** means that the checkbox is checked.
remoteLoginID= <password>	This field corresponds to the **Password** field on theOptions tab. If the **remoteLoginID** is not blank, the list command returns its value as the hardcoded string **lv**. When you save it with this value, the backend software does not modify its actual value. Saving it with any other value causes the **remoteLoginID** to change to that value.
version= <brick version string>	No correspondence to a Brick GUI field. Informational only. Its value is not saved back into the SMS database.
certType= <certificate type>	No correspondence to a Brick GUI field. Informational only. Its value is not saved back into the SMS database.
skipRouteCheck=true|false	Setting this field to true allows you to ignore error N7049, which is a complaint about a missing return route between two partitions. The line with this name/value pair is optional. If missing for a **save brick, skipRouteCheck** defaults to **false**.
enableSnmpAgent=true|false	This field corresponds to the Enable Brick SNMP Agent checkbox on the Options tab. true means that the checkbox is checked.
snmpPort	This field corresponds to the Brick SNMP Agent Port field on the Options tab.
snmpReadCommunity	This field corresponds to the Brick Read Community field on the Options tab.
snmpSysContact	This field corresponds to the Brick sysContact field on the Options tab.
snmpSysLocation	This field corresponds to the Brick sysLocation field on the Options tab.

Example

```
lsmscmd add brick brick33
```

This command creates a new Brick named ″brick33″.

□

add brickruleset

Overview

The `add brickruleset` command adds a new Brick ruleset with the specified Brick ruleset name to the current group.

Format

The format of the `add brickruleset` command is:

`lsmscmd add brickruleset <brick ruleset name> [folder name]`

where:

- *<brick ruleset name>* is the name of the new brick ruleset.This arguement is required.
- [folder name] is the name of the folder into which you would like the Brick ruleset added. This argument is optional.

Explanation

A Brick ruleset is the set of rules that govern traffic through the bricks being administered.

Example

```
lsms add brickruleset sales
```

This command creates a brick ruleset called *sales.*

□

add clienttunnel

Overview

Creates a new Client tunnel with the given name to the SMS.

Format

```
add clienttunnel <clientTunnelName>
```

Explanation

When this command is run, a file called *<clientTunnelName>*containing a new Client tunnel configuration must exist in the *<cli_dir>/<group>/VPN/Client_Tunnels* folder.

Example 1

```
add clienttunnel pppoe1Tunnel
```

The following is a typical example of output for this command:

```
ADD CLIENT TUNNEL: OK
```

Example 2

```
add clienttunnel 13.45.43.2
```

The following is a typical example of output for this command:

```
ADD CLIENT TUNNEL:N2013: Duplicate; already exists
```

This error usually means that the value given for the localTep is already used in some other client tunnel.

□

add dependencymasks

Overview

The `add dependencymasks` command adds a new dependency mask with the specified name to the current group.

Format

The format of the `add dependencymasks` command is:

`lsmscmd add dependencymasks <dependencymask name>`

where:

- *<dependencymask name>* is the name of the new dependency mask

Explanation

A dependency mask is a feature that allows an administrator to create a rule that will not permit a matching packet through the brick until it verifies that a particular session is found in the session cache.

Example

```
lsmscmd add dependencymasks client
```

This command adds a dependency mask named *client.*

□

add domainnamegroup

Overview

The `add domainnamegroup` command adds a new domain name group with the specified domain name group name.

Format

The format of the `add domainnamegroup` command is:

`lsmscmd add domainnamegroup` *<domainnamegroupname>*

where:

- *<domainnamegroupname>* is the name of the domain name group

Explanation

A domain name group is a collection of domain names.

Example

```
lsmscmd add domainnamegroup specialdns
```

This command adds a domain name group named `specialdns`.

□

add hostgroup

Overview

The `add hostgroup` command adds a new host group with the specified name.

Format

The format of the `add hostgroup` command is:

`lsmscmd add hostgroup <hostgroup name>`

where:

- *<hostgroup name>* is the name of the new host group

Explanation

A host group is a collection of IP addresses grouped together to enable you to enter more than one address in situations where a list of host IP addresses is required.

Example

`lsmscmd add hostgroup marketing`

This command adds a host group named *marketing.*

□

add lan2lantunnel

Overview

Creates a new LAN-to-LAN tunnel with the given name to the SMS.

Format

`add lan2lantunnel [<lan2lanTunnelName>]`

where *<lan2lanTunnelName>* is the name of the tunnel.

Explanation

When this command is run, a file called *<lan2lanTunnelName>* containing a new LAN-to-LAN tunnel configuration must exist in the *<cli_dir>/<group>/VPN/Lan2Lan_Tunnels* folder.

Example 1

```
add lan2lantunnel custTunnel
```

The following is a typical example of output for this command:

```
ADD LAN2LAN TUNNEL: OK
```

Example 2

```
add lan2lantunnel 13.45.43.2_23.45.62.198
```

The following is a typical example of output for this command:

```
ADD LAN2LAN TUNNEL:N2013: Duplicate;
already exists
(This error usually means that the
values given for the localTep/remoteTep
combination or its reverse is already
used in some other LAN-to-LAN tunnel.)
```

□

add servicegroup

Overview

The `add servicegroup` command adds a new service group with the specified service group name.

Format

The format of the `add servicegroup` command is:

`lsmscmd add servicegroup <servicegroup name> [folder name]`

where:

- *<servicegroup name>* is the name of the new service group.
- *[folder name]* is the folder into which you would like the dependency mask added. This argument is optional.

Explanation

A service group is a collection of services and protocols. It is used to identify the services in a rule and perform destination port mapping when adding network address translation to a rule.

Example

```
lsmscmd add servicegroup special
```

This command adds a service group named *special*.

□

apply brick

Overview

The `apply brick` command applies any changed rulesets to their assigned ports on the specified Brick in your current group.

Format

The format of the `apply brick` command is

`lsmscmd apply brick<brick name> <cache option -clear keep>`

where:

- *<brick name>* is the name of the Brick to which you want its policy applied.
- *<cache option -clear keep>* is either `clear` (clear session cache) or `keep` (do not clear session cache)

Explanation

The *<cache>* argument is required. The default is `keep`.This means, if you do not enter this argument, the session cache for each Brick in the current group will not be cleared.

If you enter a `clear` in the command string, the session cache for each Brick in the current group will be cleared when you execute the command.

Keep in mind that clearing the cache can disrupt existing client tunnel sessions, FTP sessions, or sessions that rely on dependency masks. Note that when the cache is cleared, tunnels remain intact, but the sessions that use them are lost.

Executing this comand is equivalent to saving and applying a Brick in the SMS GUI.

Example 1

```
lsmscmd apply brick sales1 keep
```

This command applies any changed Brick rulesets to all assigned brick ports in the current group. Since the *<keep>* argument is included, the cache is not cleared (the default).

Example 2

```
lsmscmd apply brick sales2 clear
```

This command applies any changed Brick rulesets to all assigned bricks in the current group. The *<cache>* argument is set to `clear`, indicating the cache will be cleared.

□

apply brickruleset

Overview

The `apply brickruleset` command compiles and applies the security policy to any Brick ports in your current group that have older versions of the specified Brick ruleset.

Format

The format of the `apply brickruleset` command is

`lsmscmd apply brickruleset <brick ruleset name> <cache -clear keep>`

where:

- *<brick ruleset name>* is the name of the Brick ruleset you want to apply
- *<cache -clear keep>* is either `clear` (clear session cache) or `keep` (do not clear session cache)

Explanation

The *<cache option>* argument is required. The default is `keep`.This means, if you do not enter this argument, the session cache for each Brick in the current group will not be cleared.

If you enter a `clear` in the command string, the session cache for each Brick in the current group will be cleared when you execute the command.

Keep in mind that clearing the cache can disrupt existing sessions that use dependency masks.

Example 1

```
lsmscmd apply brickruleset proxyzone keep
```

This command applies the ruleset *proxyzone* to all Brick ports that have previously had this ruleset applied. Since the *<keep>* argument is included, the cache is not cleared (the default).

Example 2

```
lsmscmd apply brickruleset proxyzone clear
```

This command applies the ruleset *proxyzone* to all Brick ports that have previously had this ruleset applied. The *<cache>* argument is set to `clear`, indicating the cache will be cleared.

□

apply group

Overview

The `apply group` command compiles and applies any changed rulesets and devices to your current group.

Format

The format of the `apply group` command is:

```
lsmscmd apply group
```

Explanation

The `apply group` command looks at all devices and rulesets in the current group to see if any have changed since they were last applied. The command then compiles and applies any devices and rulesets that have changed.

Executing this command is equivalent to applying a group in the SMS GUI.

Example

```
lsmscmd apply group test
```

This command compiles all device and ruleset information for the group named ″test″ and applies the information.

□

boot brick

Overview

The `boot brick` command allows an administrator to reboot a Brick from the command line.

Format

The format of the `boot brick` command is:

`lsmscmd boot brick <brickname>`

where *<brickname>* is the name of the brick you want to reboot.

Explanation

The `boot brick` command is used to reboot a single Brick from the command line.

Note that you should alert other administrators that secure client tunnels to this Brick will be terminated, and that users will need to reestablish connections after the Brick comes back online.

Executing this command is equivalent to selecting **Reboot** from the Brick Utilities menu in the Brick Editor, or right-clicking a Brick in the SMS Navigator window and selecting **Reboot** from the pop-up menu.

Example

```
lsmscmd boot brick brick22
```

This command reboots a Brick named ″brick22.″

□

bootgroup

Overview

The `bootgroup` command reboots all Bricks in the current group.

Format

The format of the `bootgroup` command is:

```
lsmscmd bootgroup
```

Explanation

Use the `bootgroup` command to reboot all Bricks in the current group.

The `bootgroup` command can be used following the `downloadgroup` command to reboot all bricks that have been upgraded.

Note that you should alert other administrators that secure client tunnels to bricks in this group will be terminated, and that users will need to reestablish connections after the Bricks come back online.

Example

```
lsmscmd bootgroup
```

This command reboots all Bricks in the current group.

□

delete applicationfilter

Overview

The `delete applicationfilter` command deletes an application filter with the specified name.

Format

The format of the delete `applicationfilter` command is:

`lsmscmd delete applicationfilter <application filter name>`

where:

- *<application filter name>* is the name of the application filter to be deleted.

Explanation

The `delete application filter` command is used to remove obsolete or otherwise non-functional application filters.

Example

`lsmscmd delete application filter H323`

This command deletes an application filter called *H323.*

□

delete brick

Overview

The `delete brick` command deletes a Brick from the SMS database.

Format

The format of the `delete brick` command is:

`lsmscmd delete brick <brick name>`

where:

- *<brick name>*is the name of the Brick to be deleted.

Explanation

Use the `delete brick` command to delete a Brick instance from the SMS database.

Example

```
lsmscmd delete brick radbrick
```

This command deletes a Brick named ″radbrick″ from the SMS database.

□

delete brickruleset

Overview

The `delete brickruleset` command deletes a Brick ruleset with the specified name.

Format

The format of the `delete brickruleset` command is:

`lsmscmd delete brickruleset <brick ruleset name>`

where:

- `<brick ruleset name>` is the name of the Brick ruleset to be deleted.

Explanation

The `delete brickruleset` command is used to remove obsolete or otherwise non-functional rulesets.

Example

`lsmscmd delete brickruleset sales`

This command deletes a Brick ruleset called *sales.*

□

delete clienttunnel

Overview

Deletes a client tunnel with the given name from the SMS.

Format

```
delete clienttunnel <clientTunnelName>
```

Explanation

This command removes a tunnel from services permanently, deleting its configuration from the SMS.

Example

```
delete clienttunnel pppoe1Tunnel
```

The following is a typical example of output for this command:

```
DELETE CLIENT TUNNEL: OK
```

□

delete dependencymasks

Overview

The `delete dependencymasks` command deletes a dependency mask with the specified name.

Format

The format of the `delete dependencymasks` command is:

`lsmscmd delete dependencymasks <dependency mask name>`

where:

- *<dependency mask name>* is the name of the dependency mask to be deleted.

Explanation

The `delete dependencymasks` command is used to remove obsolete or otherwise non-functional dependency masks.

Example

`lsmscmd delete dependencymasks client`

This command deletes a dependency mask called *client*.

□

delete domainnamegroup

Overview

The `delete domainnamegroup` command deletes a new domain name group with the specified domain name group name.

Format

The format of the `delete domainnamegroup` command is:

`lsmscmd delete domainnamegroup` *<domainnamegroupname>*

where:

- *<domainnamegroupname>* is the name of the domain name group to be deleted.

Explanation

The `delete domainnamegroup` command is used to remove obsolete or otherwise non-functional domain name groups.

Example

```
lsmscmd delete domainnamegroup specialdns
```

This command deletes a domain name group called `specialdns`.

□

delete hostgroup

Overview

The `delete hostgroup` command deletes the host group with the specified host group name.

Format

The format of the `delete hostgroup` command is:

`delete hostgroup <hostgroup name>`

where:

- *<hostgroup name>* is the name of the host group to be deleted.

Explanation

The `delete hostgroup` command is used to remove obsolete or otherwise non-functional hostgroups.

Example

```
lsmscmd delete hostgroup marketing
```

This command deletes a host group called *marketing*.

□

delete lan2lantunnel

Overview

Deletes a LAN-to-LAN tunnel with the given name from the SMS.

Format

`delete lan2lantunnel` *`[<lan2lanTunnelName>]`*

where *`<lan2lanTunnelName>`* is the name of the tunnel.

Explanation

This command removes a tunnel from service permanently, deleting its configuration from the SMS.

Example 1

```
delete lan2lantunnel custTunnel
```

The following is a typical example of output for this command:

```
DELETE LAN2LAN TUNNEL: OK
```

□

delete servicegroup

Overview

The `delete servicegroup` command deletes a service group with the specified name.

Format

The format of the `delete servicegroup` command is:

`lsmscmd delete servicegroup <service group name>`

where:

- *<service group name>* is the name of the service group to be deleted.

Explanation

The `delete servicegroup` command is used to remove obsolete or otherwise non-functional service groups.

Example

`lsmscmd delete servicegroup special`

This command deletes a service group called *special*.

□

disable clienttunnel

Overview

Disables a Client tunnel with the given name on the SMS.

Format

```
disable clienttunnel <clientTunnelName>
```

Explanation

This command takes a Clkient tunnel out of service without deleting it outright.

Example

```
disable clienttunnel pppoe1Tunnel
```

The following is a typical example of output for this command:

```
DISABLE CLIENT TUNNEL: OK
```

□

disable lan2lantunnel

Overview

Disables a LAN-to-LAN tunnel with the given name to the SMS.

Format

```
disable lan2lantunnel <lan2lanTunnelName>
```

Explanation

This command takes a LAN-to-LAN tunnel out of service without deleting it outright.

Example

```
disable lan2lantunnel custTunnel
```

The following is a typical example of output for this command:

```
DISABLE LAN2LAN TUNNEL: OK
```

□

download brick

Overview

The `download brick` command is used to update Brick software after an SMS software upgrade.

Format

The format of the `download brick` command is:

`lsmscmd download brick <brick name> [active|standby\both]`

where:

- `<brick name>` is the name of the Brick to which you want to download the new software version.
- [active|both] refers to the case where a failover pair of Bricks is upgraded. Use the **active** option to upgrade only the active Brick of the failover pair. Use the **standby** option to upgrade only the standby Brick of the failover pair. Use the **both** option to upgrade both Bricks of the failover pair. The default option is **active**.

Explanation

The `download brick` command updates the software on a Brick after the SMS software has been updated. Periodically, Alcatel-Lucent will release patches, point releases, or major new versions of the SMS software which will be made available on CD-ROM or from a website. Brick software must be updated after such an SMS revision is installed.

Executing this command is equivalent to selecting **Software Download** from the Brick Utilities menu in the Brick Editor, or right-clicking a brick in the SMS Navigator window and selecting **Software Download** from the pop-up menu.

In the case of a failover pair of Bricks, if you use the **both** option, when the download to the active Brick is complete, issue a failover yield command or reboot the Brick, causing the standby brick to become active. A download to the newly active Brick will begin. When this second download is complete, reboot that Brick, causing a second failover, so that the Brick that was initially in the active state is returned to the active state. Both Bricks of the pair will now have the updated software.

If you use the **active** option, which is the default, the active Brick will be upgraded and you will need to reboot it to make the updated software active. When you reboot, failover will occur. The newly active Brick will still need to be upgraded at a later date.

Example

```
lsmscmd download brick brick44
```

This command updates the Brick software on a Brick named ″brick44.″

□

downloadgroup

Overview

The `downloadgroup` command is used to update Brick software on all Bricks in the current group after an SMS software upgrade.

Format

The format of the `downloadgroup` command is:

```
lsmscmd downloadgroup
```

Explanation

The `downloadgroup` command updates Brick software on all Bricks in the current group after a software update has been applied to the SMS software.

Periodically, Alcatel-Lucent will release patches, point releases, or major new versions of the SMS software which will be made available on CD-ROM or from a website. Brick software must be updated after such an SMS revision is installed.

Example

```
lsmscmd downloadgroup
```

This command updates the Brick software on all Bricks in the current group.

□

enable clienttunnel

Overview

Enables a Client tunnel with the given name to the SMS.

Format

```
enable clienttunnel <clientTunnelName>
```

Explanation

This command puts a Client tunnel back in service that had been previously disabled.

Example

```
enable clienttunnel pppoe1Tunnel
```

The following is a typical example of output for this command:

```
ENABLE CLIENT TUNNEL: OK
```

□

enable lan2lantunnel

Overview

Enables a LAN-to-LAN tunnel with the given name to the SMS.

Format

```
enable lan2lantunnel <lan2lanTunnelName>
```

Explanation

This command puts a LAN-to-LAN tunnel back in service that had been previously disabled.

Example

```
enable lan2lantunnel custTunnel
```

The following is a typical example of output for this command:

```
ENABLE LAN2LAN TUNNEL: OK
```

failover brick

Overview

The `failover brick` command initiates failover of a failover Brick pair.

Format

The format of the `failover brick` command is:

`lsmscmd failover brick <brickName> [force]`

where:

- *<brickName>* is the name of the Brick failover pair.

Explanation

A failover Brick pair is a redundant Brick installation in both Bricks share a single Brick name and IP address. One Brick is the ″active″ brick, while the second is the ″standby.″ Should the active Brick fail for any reason, the standby immediately takes over the active role. This transition from standby to active is termed ″failover.″ The `failover brick` command issued from the SMS CLI initiates failover.

The *[force]* parameter forces a less “healthy” standby Brick to become the active Brick in the pair (the “health” of a Brick is determined by the number of interfaces that are up and working).

Example

`lsmscmd failover brick brick_pair_one`

This command initiates failover of the Brick pair named brick_pair_one.

□

gotogrp

Overview

The `gotogrp` command enables an Administrator who has privileges in multiple groups to select the specified group as his or her current group.

Format

The format of the `gotogrp` command is:

`lsmscmd gotogrp <group name>`

where:

- *<group name>* is the name of the group that the Administrator wants to make his or her current group.

Explanation

Executing the `gotogrp` command is equivalent to choosing another group folder on the GUI.

Example

```
lsmscmd gotogrp sales
```

This command makes *sales* the current group for the Administrator.

□

help

Overview

The `help` command displays a brief description of the syntax of each command.

Format

The format of the `help` command is:

`lsmscmd <command category>help`

The *<command category>* argument is optional.

Issuing the `help` command without the *<command category>* argument displays a list of the entire SMS CLI command set. The `help` command can be issued without the *<command category>* argument before logging into the SMS.

Issuing the `help` command with the optional *command category* argument displays a list of all SMS CLI commands in a given command category. For example, if you enter `lsmscmd list help`, the command displays only a list of the SMS `list` commands.

Explanation

The `help` command provides a brief explanation of the syntax of each command, including the optional and required parameters. The command output also provides a brief explanation of general command syntax conventions and some command notes at the end of the command listing.

You cannot use the `help` command to display the syntax of a specific command. It can only display help for all commands or commands in a specified command category.

Example

```
lsmscmd help
```

The Help command issued without an argument returns the entire list of SMS commands, as shown below:

```
C:\isms\lmf>lsmscmd help

The various commands and their syntax are as follows.

Commands for logging in and logging out

 1> lsmslogon <admin_id> <destination_directory>
     [-p <password_admin_key_file> or -f <password> -a <admin_key>]
     [-t <logon_shell_timeout_in_secs>]
 2> lsmscmd logout [admin_id]


System Administration Commands

 3> lsmscmd help
 4> lsmscmd gotogrp <groupName>
 5> lsmscmd list current group
 6> lsmscmd list groups
 7> lsmscmd list brickstatus [-a]
 8> lsmscmd list brick <brickName>
 9> lsmscmd save brick <brickName>
 10> lsmscmd add brick <brickName>
 11> lsmscmd delete brick <brickName>
12> lsmscmd list brickruleset <brickRulesetName>
13> lsmscmd save brickruleset <brickRulesetName>
14> lsmscmd add brickruleset <brickRulesetName>
15> lsmscmd delete brickruleset <brickRulesetName>
16> lsmscmd list brickteps <brickName>
17> lsmscmd list servicegroup <servicegroupname>
18> lsmscmd save servicegroup <servicegroupname>
19> lsmscmd add servicegroup <servicegroupname>
20> lsmscmd delete servicegroup <servicegroupname>
21> lsmscmd list domainnamegroup <domainnamegroupname>
22> lsmscmd save domainnamegroup <domainnamegroupname>
23> lsmscmd add domainnamegroup <domainnamegroupname>
24> lsmscmd delete domainnamegroup <domainnamegroupname>
25> lsmscmd list applicationfilter <applicationfiltername>
26> lsmscmd save applicationfilter <applicationfiltername>
27> lsmscmd add applicationfilter <applicationfiltername>
28> lsmscmd delete applicationfilter <applicationfiltername>
29> lsmscmd list hostgroup <hostgroupname>
30> lsmscmd save hostgroup <hostgroupname>
31> lsmscmd add hostgroup <hostgroupname>
32> lsmscmd delete hostgroup <hostgroupname>
33> lsmscmd list dependencymasks <dependencymaskname>
34> lsmscmd save dependencymasks <dependencymaskname>
35> lsmscmd add dependencymasks <dependencymaskname>
36> lsmscmd delete dependencymasks <dependencymaskname>
37> lsmscmd list clienttunneldefaults
38> lsmscmd save clienttunneldefaults
39> lsmscmd list clienttunnel [<clientTunnelName>]
40> lsmscmd list unusedclientteps <brickName>
41> lsmscmd list clientlicenselimits
42> lsmscmd save clientlicenselimits
43> lsmscmd save clienttunnel <clientTunnelName>
44> lsmscmd add clienttunnel <clientTunnelName>
45> lsmscmd delete clienttunnel <clientTunnelName>
46> lsmscmd enable clienttunnel <clientTunnelName>
47> lsmscmd disable clienttunnel <clientTunnelName>
48> lsmscmd list lan2lantunneldefaults
49> lsmscmd save lan2lantunneldefaults
50> lsmscmd list lan2lantunnel [<lan2lanTunnelName>]
51> lsmscmd save lan2lantunnel <lan2lanTunnelName>
52> lsmscmd add lan2lantunnel <lan2lanTunnelName>
53> lsmscmd delete lan2lantunnel <lan2lanTunnelName>
54> lsmscmd enable lan2lantunnel <lan2lanTunnelName>
55> lsmscmd disable lan2lantunnel <lan2lanTunnelName>
56> lsmscmd apply brickRuleset <brickRulesetName> <keep|clear>
57> lsmscmd apply group
58> lsmscmd apply brick <brickName> <keep|clear>
59> lsmscmd boot brick <brickName> [active|standby]
60> lsmscmd download brick <brickName> [active|standby|both]
61> lsmscmd bootgroup [active|standby]
62> lsmscmd downloadgroup [active|both]
63> lsmscmd failover brick <brickName> [force]
64> lsmscmd refreshmac brick <brickName>
65> lsmscmd rehome brick <brickName> <LsmsIpAddress>
```

Important! Notes:

1. Parameters between '<' and '>' are required, and the parameters between '[' and ']' are optional.
2. In command 1, if no password is provided on the command line or in the password_admin_key file, the user will be prompted.
3. In command 1, if an admin_key is required (e.g., for RADIUS or SecurID), provide it on the command line or add it as the 2nd line in the password_admin_key file. If no admin_key is provided and one is required, the user will be prompted.
4. In command 1, if no timeout is given, the GUI timeout is the default timeout value used.
5. In commands 58, 60 the default value is `active`.
6. In commands 59, 61, the default value is `both`.

□

list applicationfilter

Overview

The `list applicationfilter` command displays information about application filters.

Format

The format of the `list applicationfilter` command is:

`lsmscmd list applicationfilter`*`[applicationfiltername]`*

Explanation

If the `list applicationfilter` command is entered with no argument, it lists the names of the available application filters.

If the `list applicationfilter` is executed with an *`[applicationfiltername]`*, it displays the contents of the specified application filter.

Example

```
lsmscmd list applicationfilter smtpDefault
```

The following is an example of typical output from this command:

```
foldername=
name=smtpDefault
type=SMTP
description=
useGlobally=false
smtpPassCmd[4]=data
smtpOpenRelaySvc=ORDB.org
smtpBlockOpenRelay=false
smtpBlockCmd[1]=vrfy
countSmtpAttachments=0
smtpHideBanner=true
smtpBlockAttachments=false
auditException=true
countSmtpBlockCmds=2
smtpPassCmd[2]=helo
smtpPassCmd[5]=rcpt
smtpBlockSpoofedOut=false
smtpCmdListEnabled=pass
smtpMaxDomainLength=255
smtpPassMSExchCmds=true
smtpDomainNamesValidId=
smtpDomainNamesValid=
smtpPassCmd[0]=quit
smtpPassCmd[3]=noop
smtpPassCmd[6]=rset
smtpMaxMsgLength=
smtpBlockCmd[0]=expn
countSmtpMimeTypes=0
countSmtpPassCmds=7
smtpCheckAnomalies=true
audit=true
smtpBlockMimeTypes=false
smtpPassCmd[1]=mail
```

□

list brick

Overview

The `list brick` command displays the configuration information for the specified Brick. If you supply the *<brick name>* argument, the output of the command is an ASCII file that is saved in the directory you specified at logon.

Format

The format of the `list brick` command is:

`lsmscmd list brick <brick name>`

where:

- *<brick name>* is the name of the Brick for which configuration information is to be displayed.

Explanation

The complete list of Bricks available to the current group can be obtained by omitting the *<brick name* argument. However, this list will only be echoed to the console; no file will be written to the target directory if you omit the argument.

After you issue a `list brick` command, you can open the file with any text editor, edit the entries, and issue a `save brick` command. See "save brick" (p. 2-90) later in this chapter for details on this command.

All of the configuration information for a Brick is specified in a file. The name of the file is *<brick name>* and is located on the SMS in the directory *<cli dir>/<group>/Devices/Brick*, where *<cli dir>* is given as an argument to the `lsmslogon` command, and *<group>* is the current group that you are in when executing the `add brick` command. By default, the group is **system.**

Data in the Brick configuration file is organized in a *<name>=<value>* format. Refer to the descripton of the "add brick" (p. 2-6) command for details about the contents of the configuration file.

The list command does not specify or guarantee a certain order for the lines in the file.

Example

```
lsmscmd list brick sales1
```

The following is an example of typical output from this command:

```
LIST BRICKS:OK
```

Important! The list commands create a directory structure, within the directory that you specified in the lsmslogon command, that corresponds to the SMS directory structure.

Thus, issuing the list brick command will create the directory tree /System/Devices/Bricks in your target directory.

□

list brickruleset

Overview

The `list brickruleset` command gets the list of rules that belong to the Brick ruleset. If you supply the *`brick ruleset name`* `argument`, the output of the command is an ASCII file that is saved in the directory you specified at logon.

Format

The format of the `list brickruleset` command is:

`list brickruleset <brick ruleset name>`

where:

- *`<brick ruleset name>`* is the name of the Brick ruleset for which you want to see a list of rules.

Explanation

Executing this command is equivalent to right-clicking a particular Brick zone ruleset and selecting **Edit** or **View** from the pop-up menu in the SMS Navigator. You can get a complete list of Brick rulesets available in your current group by omitting the *`<brick ruleset name>`* argument. This is equivalent to clicking the Brick Zone Rulesets folder on the GUI. Note that this list will only be echoed to the console; no file will be written to the target directory if you omit the argument.

After you issue a `list brickruleset` command, you can open the file with any text editor, edit the entries, and issue a `save brickruleset` command. See "save brickruleset" (p. 2-91) later in this chapter for details on this command.

Example 1

```
lsmscmd list brickruleset sales
```

The following is an example of typical output from this command:

```
LIST BRICK RULESET:OK
```

Example 2

```
lsmscmd list brickruleset
```

The following is an example of typical output from this command:

```
LIST BRICK RULESET:OK
1 'vpnzone'
2 'proxyzone'
3 'nocgwzone'
4 'firewall'
5 'administrativezone'
```

list brickstatus

Overview

The `list brickstatus` command displays the list of Bricks for which you have view privileges and their current status on the console, and generates a file called *brickstatus* containing the status details of each Brick. This file is created and stored in the `<cli_dir>/<group>/Status` folder. The file is overwritten each time the command is executed.

Format

The format of the `list brickstatus` command is:

`lsmscmd list brickstatus [-a]`

Explanation

When this command is executed, it displays a list of each Brick and its current state on the console (`up`, `lost`, or `unhealthy`). If the Brick is the standby Brick of a failover pair, it shows the operational state of active and standby Brick in the pair.

The Brick status information output to the *brickstatus* file by this command is equivalent to the fields shown on the All Bricks status listing of the Status Monitor on the SMS GUI, including any user-defined fields that you have configured to show on the Status Monitor listing. The *brickstatus* file contains a comma-separated list of the status details for each Brick. The first line of the file shows the name of each field/parameter.

The command displays the status and details of each Brick in the current group. To obtain details about the Bricks in another group, you can execute the `gotogrp` command first to select another group as the current group, and then execute the `list brickstatus` command (for details about the `gotogrp`, refer to the "gotogrp" (p. 2-56) command manual page in this chapter).

The `-a` option can be specified to obtain the status and details of all Bricks across all permissible groups.

Example 1

The following is a typical example of the console output of this command:

```
LIST BRICKSTATUS: OK
1 'newbrick'     up/up
2 'brick-test'    lost
```

Example 2

The following is a typical example of the *brickstatus* file generated by this command:

```
Name,IPAddress,State,CPU%,Sess%,ActiveVersion,StandbyVersion,FailoverLabels,
   PortStatus,MgmtServer,Roaming
newbrick,135.222.142.117,Up-up,,,9.2.113,,,Up:0 Down:0 Disabled:0,,
brick-test,,Lost,,,9.3.163,,,Up:0 Down:0 Disabled:0,,
```

□

list brickteps

Overview

The `list brickteps` command lists the tunnel endpoints (TEPs) of a given Brick to the console.

Format

The format of the `list brickteps` command is:

`lsmscmd list brickteps <brickName>`

where:

<brickName> is the name of a Brick in the current group. This arguement is required.

Explanation

This command helps the user know what TEPs are available for editing the localTep field of a Client tunnel configuration or the localTep or remoteTep fields of a LAN-to-LAN tunnel configuration. (For Client tunnels, the 'list unusedClientTeps' command is even more useful.)

Example

`lsmscmd list brickteps v1brick`

The following is an example of typical output from this command:

```
LIST BRICK TEPS:OK
1 '87.3.58.153, rock_zone'
2 '132.16.34.91, paper_zone'
3 '76.23.10.44, scissor_zone'
The first field in each list entry is the virtual Brick address and the second i
```

list clientlicenselimits

Overview

The `list clientlicenselimits` command lists the number of client user licenses assigned to groups and TEPs.

Example

```
lsmscmd list clientlicenselimits
```

The following is an example of typical output from this command:

```
licenseFromKey=10100
groupName[0]=group1
groupLimit[0]=10
groupName[1]=group2
groupLimit[1]=0
groupName[2]=group3
groupLimit[2]=0
groupName[3]=group4
groupLimit[3]=0
groupName[4]=group5
groupLimit[4]=0
groupName[5]=system
groupLimit[5]=5000
groupCount=6
count=7
device[0]=brick12
tepIP[0]=12.12.12.103
activeSessionCount[0]=0
policy[0]=vpnzone12ca2
enabled[0]=true
name[0]=brick12ca3
licenseLimit[0]=10
device[1]=brick12
tepIP[1]=dhcp
activeSessionCount[1]=0
policy[1]=administrativezone
enabled[1]=true
name[1]=brick12dhcp
licenseLimit[1]=10
device[2]=brick12
tepIP[2]=12.12.12.253
activeSessionCount[2]=0
policy[2]=vpnzone12
enabled[2]=true
name[2]=brick12vpn12
licenseLimit[2]=10
device[3]=brick13
tepIP[3]=13.13.13.253
activeSessionCount[3]=0
policy[3]=vpnzone13
enabled[3]=true
name[3]=brick13vpn
licenseLimit[3]=0
device[4]=brick55
tepIP[4]=55.55.55.203
activeSessionCount[4]=0
policy[4]=vpnzone55
```

```
enabled[4]=true
name[4]=brick55vpn55
licenseLimit[4]=10
device[5]=model80
tepIP[5]=dhcp
activeSessionCount[5]=0
policy[5]=administrativezone
enabled[5]=true
name[5]=model80admin
licenseLimit[5]=100
device[6]=model80
tepIP[6]=10.10.10.251
activeSessionCount[6]=0
policy[6]=vpnzone
enabled[6]=true
name[6]=model80tep
licenseLimit[6]=1000
```

□

list clienttunnel

Objective

Retrieves the specified Client tunnel configuration to a file under the *<cli_dir>/<group>/VPN/Client_Tunnels* folder.

Format

`list clienttunnel` *`[<clientTunnelName>]`*

where `clientTunnelName` is the name of the tunnel. If you leave off this argument, the names of all the Client tunnels in this group will be displayed on the console.

Explanation

Use this command to list the Client tunnel configuration of a particular tunnel to a file of the same name, or have it list all the tunnel names.

Example 1

```
lsmscmd list clienttunnel
```

The following is a typical example of output for this command:

```
LIST CLIENT TUNNEL: OK
1 '132.16.34.91'
2 '13.45.43.2'
```

Example 2

```
lsmscmd list clienttunnel 13.45.43.2
```

The following is a typical example of output for this command:

```
LIST CLIENT TUNNEL: OK
```

□

list clienttunneldefaults

Objective

The `list clienttunneldefaults` command retrieves the default Client tunnel configuration to a file called 'defaults' under the *<cli_dir>/<groups>/VPN/Client_Tunnels* folder.

Format

```
list clienttunneldefaults
```

Explanation

Use this command to view, perhaps with the intent to edit and save, the Client tunnel defaults configuration.

Example

```
lsmscmd list clienttunneldefaults
```

The following is an example of typical output from this command:

```
LIST CLIENT TUNNEL DEFAULTS:OK
```

□

list current group

Overview

The `list current group` command echoes back the group that the Administrator is currently working in.

Format

The format of the `list current group` command is:

```
lsmscmd list current group
```

Explanation

Use the `list current group` command to determine what group you are currently administering.

Example

```
lsmscmd list current group
```

The following is an example of typical output from this command:

```
LIST CURRENT GROUP:OK:
Group ='system'
```

□

list dependencymasks

Overview

The `list dependencymasks` command gets the list of parameters that belong to the specified dependency mask. If you supply the *`dependency mask name`* argument, the output of the command is an ASCII file that is saved in the directory you specified at logon.

Format

The format of the `list dependencymasks` command is:

`list dependencymasks <dependency mask name>`

where:

- *`<dependency mask name>`* is the name of the dependency mask for which you want to see a list of parameters.

Explanation

Executing this command is equivalent to right-clicking a particular dependency mask in the GUI. You can get a complete list of dependency masks available in your current group by omitting the *`<dependency mask name>`* argument. This is equivalent to clicking the Dependency Masks folder on the GUI. Note that this list will only be echoed to the console; no file will be written to the target directory if you omit the argument.

After you issue a `list dependencymasks` command, you can open the file with any text editor, edit the entries, and issue a `save dependencymasks` command. See "save dependencymasks" (p. 2-95) later in this chapter for details on this command.

Example

```
lsmscmd list dependencymasks test
```

The following is a typical example of output from this command:

```
LIST DEPENDENCYMASKS:OK
```

Important! The list commands create a directory structure, within the directory that you specified in the lsmslogon command, that corresponds to the SMS directory structure.

Thus, issuing the `list dependencymasks` command will create the directory tree */System/Policy_Components/Dependency_Masks* in your target directory.

□

list domainnamegroup

Overview

The `list domainnamegroup` command lists the domain name groups. If you supply the `domainnamegroupname` argument, the output of the command is an ASCII file that is saved in the directory that you specified at logon.

Format

The format of the `list domainnamegroup` command is:

`lsmscmd list domainnamegroup` *<domainnamegroupname>*

where:

- *<domainnamegroupname>* is the name of the domain name group whose contents you want to be listed.

□

list groups

Overview

The `list groups` command lists the names of all groups that currently exist in the SMS database.

Format

The format of the `list groups` command is:

```
lsmscmd list groups
```

Explanation

Use the `list groups` command to list the names of all groups that currently exist in the SMS database.

Example

```
lsmscmd list groups
```

□

list hostgroup

Overview

The `list hostgroup` command gets the list of IP addresses that belong to the specified host group. If you supply the *`hostgroup name`* argument, the output of the command is an ASCII file that is saved in the directory you specified at logon.

Format

The format of the `list hostgroup` command is:

list hostgroup *`hostgroup name`*

where:

- *`hostgroup name`* is the name of the host group for which you want to see a list of IP addresses.

Explanation

Executing this command is equivalent to clicking a particular host group in the GUI. You can get a complete list of host groups available in your current group by omitting the *`hostgroup name`* argument. This is equivalent to clicking the Host Groups folder on the GUI. Note that this list will only be echoed to the console; no file will be written to the target directory if you omit the argument.

After you issue a `list hostgroup` command, you can open the file with any text editor, edit the entries, and issue a `save hostgroups` command. See "save hostgroup" (p. 2-97) later in this chapter for details on this command.

Example

```
lsmscmd list hostgroup bricks
```

The following is a typical example of output for this command:

```
LIST HOSTS:OK
```

Important! The list commands create a directory structure, within the directory that you specified in the lsmslogon command, that corresponds to the SMS directory structure.

Thus, issuing the `list hostgroup` command will create the directory tree */System/Policy_Components/Host_Groups* in your target directory.

□

list lan2lantunnel

Overview

Retrieves the specified LAN-to-LAN tunnel configuration to a file under the<*cli_dir*>/<*group*>/*VPN/Lan2Lan_Tunnels* folder.

Format

`list lan21antunnel` *`[lan2lanTunnelName]`*

where *`lan2lanTunnelName`* is the name of the tunnel. If you leave off this argument, the names of all the LAN-to-LAN tunnels in this group will be displayed on the console.

Explanation

Use this command to list the LAN-to-LAN tunnel configuration of a particular tunnel to a file of the same name, or have it list all the tunnel names.

Example 1

`list lan2lantunnel`

The following is a typical example of output for this command:

```
LIST LAN2LAN TUNNEL: OK
1 '13.45.43.2_23.45.62.198'
2 'dhcp-paper@test02_87.3.58.153'
3 'pppoe1-v1zone_87.3.58.153['
```

Example 2

`list lan2lantunnel 13.45.43.2_23.45.62.198`

The following is a typical example of output for this command:

```
LIST LAN2LAN TUNNEL: OK
```

□

list lan2lantunneldefaults

Overview

The `list lan2lantunneldefaults` command retrieves the default LAN-to-LAN tunnel configuration to a file called 'defaults' under the *<cli_dir>/<group>/VPN/Lan2Lan_Tunnels* folder.

Format

```
list lan2lantunneldefaults
```

Explanation

Use this command to view, perhaps with the intent to edit and save, the LAN-to-LAN tunnel defaults configuration.

Example

```
list lan2lantunneldefaults
```

The following is a typical example of output for this command:

```
LIST LAN2LAN TUNNEL DEFAULTS: OK
```

□

list servicegroup

Overview

The `list servicegroup` command gets the protocol/srcport/destport tuple that belongs to the specified service group. If you supply the *`service group name`* argument, the output of the command is an ASCII file that is saved in the directory you specified at logon.

Format

The format of the `list servicegroup` command is:

`lsmscmd list servicegroup` *`service group name`*

where *`service group name`* is the name of the service group for which you want to see the protocol/srcport/destport information.

Explanation

Executing this command is equivalent to clicking a particular service group in the GUI. You can get a complete list of service groups available in your current group by omitting the *`service group name`* argument. This is equivalent to clicking the Service Groups folder on the GUI. Note that this list will only be echoed to the console; no file will be written to the target directory if you omit the argument.

After you issue a `list servicegroup` command, you can open the file with any text editor, edit the entries, and issue a `save hostgroups` command. See "save servicegroup" (p. 2-100) later in this chapter for details on this command.

Examples

```
lsmscmd list servicegroup bootpc
```

The following is a typical example of output for this command:

```
LIST SERVICES:OK
```

Important! The list commands create a directory structure, within the directory that you specified in the lsmslogon command, that corresponds to the SMS directory structure.

Thus, issuing the `list servicegroup` command will create the directory tree */System/Policy_Components/Service_Groups* in your target directory.

□

list unusedclientteps

Overview

The `list unusedclientteps` command lists the tunnel endpoints (TEPs) of a given Brick that are not currently being used by any Client tunnel. The listing is displayed on the console.

Format

`lsmscmd list unusedclientteps <brickName>`

where `brickName` is the name of the Brick in the current group. This argument is required.

Explanation

This command helps the user know what TEPs are available for editing the localTep field of an existing Client tunnel or of a new Client tunnel.

Example

`lsmscmd list unusedclientteps v1brick`

The following is a typical example of output for this command:

```
LIST UNUSED CLIENT TEPS: OK
1 'pppoe1 s1zone'
```

The first field in each list entry is the Virtual Brick Address (VBA) and the second is the Brick ruleset.

□

logout

Overview

The `logout` command terminates an Administrator session of the command line interface.

Format

The format of the `logout` command is:

`lsmscmd logout [admin id]`

Explanation

The `logout` command is executed by an Administrator to terminate a command line interface session.

The `[admin id]` option allows you to log out another administrator. You must be an SMS Administrator to be able to log out another administrator.

□

lsmslogon

Overview

The `lsmslogon` command enables an Administrator to log into the SMS. The SMS authenticates the login and determines the type of administrator and privileges, based on the administrator's Admin ID. Note that if you are logged in to the SMS Navigator or another CLI with the same ID, the previous session will be terminated.

Format

The format of the `lsmslogon` command on *Windows*® is:

`lsmslogon <admin_ID> <destination_directory> [-p <password_file>` or `-f <password>] [-t <logon_shell_timeout>]`

and on *Solaris* and Linux is:

`. lsmslogon <admin_ID> <destination_directory> [-p <password_file>` or `-f <password>] [-t <logon_shell_timeout>]`

where:

- `.` ("dot space") on *Solaris*® and Linux means that the command is run in the same shell. Without it, the command is run in a subshell; subsequent `lsmscmd` commands will not work.
- *<admin_ID>* is the administrator's Admin ID.
- *<destination_directory>* is the directory in which the SMS will store any zone assignment or policy files. This directory is created in the directory in which you installed the SMS software. To specify a different directory, supply the complete path.
- `-p` *<password_file>* is the pathname of a file containing the administrator's password.
- `-f` *<password>* is the administrator's password.
- `-t` *<logon_shell_timeout>* is the timeout period for the command line interface (in seconds).

Explanation

The *<admin_ID>* is the ID the administrator uses to log into the SMS graphical user interface (GUI). It is a required argument, and must be the first argument of the `lsmslogon` command.

The *<destination_directory> is also a required argument, and* must be the second argument of the `lsmslogon` command. It is the directory in which any zone assignment or policy files will be placed. You can enter a dot (.) to indicate the current directory, or the path to another directory. Note that if you enter only a directory name, without the complete path, the directory will be created relative to the current directory.

Important! The administrator must have write permission for the destination directory, or the login will fail. If the destination directory does not exist, the software will create it and give the user read/write permission.

The administrator's password is also required. There are three ways to enter it:

- Enter the password directly with the `-f` parameter.
- Create a file containing the password and enter the pathname with the `-p` parameter.
- Do neither of the above, and the system will prompt you to enter the password from the keyboard.

By default, the command line interface has a timeout equal to the SMS GUI timeout. If you wish to change the timeout period, you can enter a value in seconds with the `-t` parameter.

Example 1

`lsmslogon abc . -f abc123` (*Windows*®)

`.lsmslogon abc . -f abc123` (*Solaris*®, Linux)

In this command, the administrator's Admin ID is `abc`, the files will be stored in the current directory, and the administrator's password is `abc123`.

Example 2

`lsmslogon lsmsadm` *c:\users\files* (*Windows*®)

`. lsmslogon lsmsadm` *c:\opt\isms\files* (*Solaris*®, Linux)

In this command, the administrator's Admin ID is `lsmsadm` and the files will be stored in *c:\users\files* or *c:\opt\isms\files*, respectively. Since no password was entered, the system will prompt the administrator to enter the password.

Example 3

`lsmslogon grpadm` *c:\users\files* `-p pwdfile -t 3000` (*Windows*®)

`. lsmslogon grpadm` *c:\opt\isms\files* `-p pwdfile -t 3000` (*Solaris*®, Linux)

In this command, the administrator's Admin ID is grpadm, the retrieved files will be stored in c:\users\files or c:\opt\isms\users, respectively, and the administrator's password is found in the file pwdfile. In addition, the command line timeout has been set to 3000 seconds (50 minutes).

□

refreshmac brick

Overview

The `refreshmac brick` command is used to refresh the MAC table of a Brick.

Format

The format of the `refreshmac brick` command is:

`refreshmac brick <brickname>`

where:

- *<brickname>* is the name of the Brick for which you want to refresh the MAC table.

Explanation

The `refreshmac brick` command is only issued for Bricks which do not have the **Allow MAC Address To Move** checkbox on the Brick Editor Options tab checked.

Example

```
lsmscmd refreshmac brick_one
```

□

rehome brick

Overview

The `rehome brick` command is used in a redundant SMS configuration to reassign management of a specific Brick to the other SMS of the pair.

Format

The format of the `rehome brick` command is:

`rehome brick` *`brickname> <SMSIpaddress>`*

where:

- *`<brickname>`* is the name of the Brick you want to rehome.
- *`<SMSIpaddress>`* is the IP address of the SMS to which you want to rehome this Brick.

Explanation

In a redundant SMS configuration, each Brick is ″homed″ to one of the two available SMSs. The SMS that a Brick is homed to keeps the log records for that Brick.

Example

```
lsmscmd rehome brick brick101 10.10.10.10

CONTROL BRICKS: OK
```

This command rehomes brick101 to the SMS with the IP address 10.10.10.10.

```
lsmscmd rehome brick brick101 10.10.10.55

CONTROL BRICKS:Valid SMS IP Addresses for brick 'brick101' are:
10.10.10.10
10.10.10.5
```

The above example illustrates the response when an administrator attempts to rehome a Brick, in this case perhaps because of a typing error, to an invalid IP address. The SMS responds with a list of valid SMS IP addresses.

□

save applicationfilter

Overview

The `save applicationfilter` command saves the contents of the application filter with the specified name.

The `save applicationfilter` command is used in conjunction with the `list applicationfilter` command to make modifications to the contents and save those modifications.

Format

The format of the `save applicationfilter` command is:

`lsmscmd save appplicationfilter <applicationfiltername>`

where:

- *<applicationfiltername>* is the name of the application filter contents you want to save.

Explanation

Use the `save applicationfilter` command to save any changes to the application filter contents.

Example

```
lsmscmd save applicationfilter H323A
```

This command saves the contents of the application filter named `H323A`.

□

save brick

Overview

The `save brick` command saves a new brick configuration, or modifications to an existing brick configuration, in the SMS database.

The `save brick` command is used in conjunction with the `list brick` command to make modifications to the settings of a Brick and save those modifications.

Format

The format of the `save brick` command is:

`lsmscmd save brick <filename>`

where:

- *<filename>* is the name of the Brick configuration file for the Brick being saved. Refer to the "add brick" (p. 2-6) command for a description of the Brick configuration file.

Explanation

Use the `save brick` command to save a new Brick or to save modifications to the settings of an existing Brick.

Executing this command is equivalent to selecting **Save** from the File menu of the Brick Editor.

Example

`lsmscmd save brick brick33`

This command saves a Brick named ″brick33″.

□

save brickruleset

Overview

The `save brickruleset` command saves the contents of the current Brick ruleset with the specified ruleset name.

The `save brickruleset` command is used in conjunction with the `list brickruleset` command to make modifications to a brick ruleset and save those modifications.

Format

The format of the `save brickruleset` command is:

`save brickruleset` *`<brick ruleset name>`*

where:

- *`<brick ruleset name>`* is the name of the ruleset you want to save.

Explanation

Use the `save brickruleset` command to save any changes to a Brick ruleset.

Example

```
lsmscmd save brickruleset sales
```

This command saves a Brick ruleset named *sales*.

□

save clientlicenselimits

Overview

Saves the current configuration configuration of client license limits on groups and TEPs.

Format

```
save clientlicenselimits
```

Example

save clientlicenselimits

□

save clienttunnel

Overview

Save the specified Client tunnel configuration back to the SMS.

Format

`save clienttunnel <clientTunnelName>`

Explanation

When this command is run, a file called *<clientTunnelName>* containing a Client tunnel configuration must exist in the

<cli_dir>/<group>/VPN/Clinet_Tunnels folder.

Example

save clienttunnel 13.45.43.2

The following is a typical example of output for this command:

```
SAVE CLIENT TUNNEL: OK
```

save clienttunneldefaults

Objective

After editing the file called 'default' under the *<cli_dir>/<group>/VPN/Client_Tunnels* folder, this command saves the changes back to the SMS.

Format

```
save clienttunneldefaults
```

Explanation

Use this command to save the Client tunnel defaults configuration.

Example

```
lsmscmd save clienttunneldefaults
```

The following is a typical example of output for this command:

```
SAVE CLIENT TUNNEL DEFAULTS: OK
```

□

save dependencymasks

Overview

The `save dependencymasks` command saves the contents of the current dependency mask with the specified dependency mask name.

The `save dependencymasks` command is used in conjunction with the `list dependencymasks` command to make modifications to dependency masks and save those modifications.

Format

The format of the `save dependencymasks` command is:

save `dependencymasks` *<dependency mask name>*

where:

- *<dependency mask name>* is the name of the dependency mask you want to save.

Explanation

Use the `save dependencymasks` command to save any changes to a dependency mask.

Example

lsmscmd `save dependencymasks` client

This command saves a dependency mask named client.

□

save domainnamegroup

Overview

The `save domainnamegroup` command saves the contents of the domain name group with the specified name.

The `save domainnamegroup` command is used in conjunction with the `list domainnamegroup` command to make modifications to dependency masks and save those modifications.

Format

The format of the `save domainnamegroup` command is:

`save domainnamegroup` *<domainnamegroupname>*

where:

- *<domainnamegroupname>* is the name of the domain name group whose contents you want to save.

Explanation

Use the `save domainnamegroup` command to save any changes to a domain name group.

Example

```
lsmscmd save domainnamegroup specialdns
```

This command saves a domain name group called `specialdns`.

□

save hostgroup

Overview

The `save hostgroup` command saves the contents of the current hostgroup with the specified host group name.

The `save hostgroup` command is used in conjunction with the `list hostgroup` command to make modifications to host groups and save those modifications.

Format

The format of the `save hostgroup` command is:

save hostgroup *<hostgroup name>*

where:

- *<hostgroup name>* is the name of the host group you want to save.

Explanation

Use the `save hostgroup` command to save any changes to a host group.

Example

```
lsmscmd save hostgroup marketing
```

This command saves a host group named marketing.

□

save lan2lantunnel

Overview

Save the specified LAN-to-LAN tunnel configuration back to the SMS.

Format

```
save lan2lantunnel [<lan2lanTunnelName>]
```

where lan2lanTunnelName is the name of the tunnel.

Explanation

When this command is run, a file called *<lan2lanTunnelName>* containing a LAN-to-LAN tunnel configuration must exist in the *<cli_dir>/<group>/VPN/Lan2Lan_Tunnels* folder.

Example 1

```
save lan2lantunnel 13.45.43.2_23.45.62.198
```

The following is a typical example of output for this command:

```
SAVE LAN2LAN TUNNEL: OK
```

□

save lan2lantunneldefaults

Overview

After editing the file called *'default'* under the *<cli_dir>/<group>/VPN/Lan2Lan_Tunnels* folder, this command saves the changes back to the SMS.

Format

```
save lan2lantunneldefaults
```

Explanation

Use this command to save the LAN-to-LAN tunnel defaults configuration.

Example

```
save lan2lantunneldefaults
```

The following is a typical example of output for this command:

```
SAVE LAN2LAN TUNNEL DEFAULTS: OK
```

□

save servicegroup

Overview

The `save servicegroup` command saves the contents of the current service group with the specified service group name.

The `save servicegroup` command is used in conjunction with the `list servicegroup` command to make modifications to service groups and save those modifications.

Format

The format of the `save servicegroup` command is:

`save servicegroup <servicegroup name>`

where:

- *<servicegroup name>* is the name of the service group you want to save.

Explanation

Use the `save servicegroup` command to save any changes to a service group.

Example

```
lsmscmd save servicegroup special
```

This command saves a service group named *special.*

□

3 SMS CLI Files

Overview

Purpose

This chapter provides the information required to understand and edit, if necessary, the policy information in Alcatel-Lucent *VPN Firewall Brick*™ Security Appliance, Brick ruleset, host group, service group, dependency mask, client tunnel, and LAN-LAN tunnel files.

File commands

This chapter describes the files that are created when an Administrator executes the following commands:

- `list applicationfilter`
- `list brick`
- `list brickruleset`
- `list brickstatus`
- `list clienttunnel`
- `list clienttunneldefaults`
- `list dependencymasks`
- `list hostgroup`
- `list lan2lantunnel`
- `list lan2lantunneldefaults`
- `list servicegroup`

These files are stored in the group directory that you specified when you logged in. The list commands create a directory structure, within that directory that corresponds to the SMS directory structure.

Thus, issuing the `list brick` command will create the directory tree:

/System/Devices/Bricks

in your target directory.

You can edit these files using a standard text editor to add or update Brick ports, Brick rulesets, host groups, service groups, dependency masks, client tunnels, and LAN-LAN tunnels.

Contents

brick File

Overview

The brick file contains configuration information for a specific Brick.

The name of the file is *<brick name>* and is located on the SMS in the directory *<cli dir>/<group>/Devices/Brick*, where *<cli dir>* is given as an argument to the `lsmslogon` command, and *<group>* is the current group that you are in when executing the `add brick` command. By default, the group is **system**.

Data in the Brick configuration file is organized in a *<name>=<value>* format. To specify table data, an index is added to the name to specify the row in the table to which it applies.

Only one name/value pair exists per line. The order of each name/value pair in the file can vary.

Explanation

Refer to the configuration file description in the "add brick" (p. 2-6) command section in Chapter 2, "SMS CLI Commands" for a description of each field.

Example

The following is an example of a portion of a typical Brick file:

```
foldername=
dhcpMethod=broadcast
dhcpAddresses=*
showVLANView=false
pppoe2KeepAliveRetryCnt=5
description=
adminServerIP=135.222.142.117,135.222.142.118,135.222.142.128
useBrickAddr=false
enableMsgsNoLogin=false
timeOffsetFromSms=0.0
pppoe2ChapKey=
pppoe2MACAddr=
multicastToFirstZone=true
auditWait=false
failbackDelay=
version=9.2.113
mobile=false
macAddressB=
macAddressA=
pppoe1KeepAliveIntvl=30
promonLogsIntervalSecs=30
pingMinActive=120
pppoe1Password=
failoverPrfStshInt=auto
dhcpServers=*
pppoe2Service=
enableICM=true
brickType=brick
snmpPort=
targetFloorUtilization=65
gateway=
activationThreshold=80
name=joesbrick
snmpReadCommunity=
enableBrickFailover=true
snmpSysContact=
failoverYldTime=15
failoverLabelB=
failoverLabelA=
pppoe1MACAddr=
priorityLSMSIP=135.222.142.117,135.222.142.118,135.222.142.128
pppoe2UserId=
snmpSysLocation=
localPartition=*Default
enableSnmpAgent=false
UDFValue4=
firewallIP=135.222.142.117
```

```
UDFValue3=
UDFValue2=
UDFValue1=yes
UDFValue0=2
routeReturn=false
pppoe1ChapKey=
pppoe2KeepAliveIntvl=30
adminServerGateway=default,default,default
dynNatDelaySecs=60
primaryBrick=none
autoRefreshMac=false
failoverActvTime=4
pppoe1Service=
pppoe2Password=
stickiness=300
pppoeAsRedundantPair=false
loginBannerText=
pppoe1KeepAliveRetryCnt=5
pppoe1UserId=
remoteLoginID=
encryptPreferredLink=true
dhcpServerHostGroupName=
dhcpAddressHostGroupName=
VLANID[0]=1
VLANipAddress[0]=135.222.142.117/24
brickVLANIPCount=1
interfaceName[0]=local
aggregatePort[0]=
defaultVLANID[0]=1
receiveBitRate[0]=100M
transmitBitRate[0]=100M
enableQOS[0]=false
dhcpRequest[0]=false
interfaceMode[0]=auto
portDescription[0]=
enableJumboFrame[0]=false
mtu[0]=
ignoreHeartBeatFailures[0]=false
interfaceName[1]=ether0
aggregatePort[1]=
defaultVLANID[1]=1
receiveBitRate[1]=100M
transmitBitRate[1]=100M
enableQOS[1]=false
dhcpRequest[1]=false
interfaceMode[1]=auto
portDescription[1]=
enableJumboFrame[1]=false
mtu[1]=
```

```
ignoreHeartBeatFailures[1]=false
interfaceName[2]=ether1
aggregatePort[2]=
defaultVLANID[2]=1
receiveBitRate[2]=100M
transmitBitRate[2]=100M
enableQOS[2]=false
dhcpRequest[2]=false
interfaceMode[2]=auto
portDescription[2]=
enableJumboFrame[2]=false
mtu[2]=
ignoreHeartBeatFailures[2]=false
interfaceName[3]=ether2
aggregatePort[3]=
defaultVLANID[3]=1
receiveBitRate[3]=100M
transmitBitRate[3]=100M
enableQOS[3]=true
dhcpRequest[3]=false
interfaceMode[3]=auto
portDescription[3]=
enableJumboFrame[3]=false
mtu[3]=
ignoreHeartBeatFailures[3]=false
interfaceName[4]=ether3
aggregatePort[4]=
defaultVLANID[4]=1
receiveBitRate[4]=100M
transmitBitRate[4]=100M
enableQOS[4]=false
dhcpRequest[4]=false
interfaceMode[4]=auto
portDescription[4]=
enableJumboFrame[4]=false
mtu[4]=
ignoreHeartBeatFailures[4]=false
interfaceNumber[0]=0
policy[0]=firewall
virtualBrickAddress[0]=
dhcpTEPVBA[0]=false
matchVBAPackets[0]=false
zoneIPAddressOrRange[0]=*
zoneIPHost[0]=
allowedOutSourceIPAddressOrRange[0]=*
allowedOutSourceIPHost[0]=
localAddressmapping[0]=direct
localPresenceAddressOrRange[0]=
localPresenceHost[0]=
```

```
vpnCertificate[0]=
defaultAuthService[0]=
AuthTimeOut[0]=480
SourceIPs[0]=*
zonePriority[0]=16
maxQueueLatency[0]=500
qosParamsActive[0]=00
guarZoneRateIn[0]=
guarZoneRateOut[0]=
maxZoneRateIn[0]=
maxZoneRateOut[0]=
maxZoneConcSessTotal[0]=
maxZoneConcSessIn[0]=
maxZoneConcSessOut[0]=
setTOSDiffServBits[0]=false
separateBorrowSetting[0]=false
bitTemplate[0]=TOS
bitPatternBorrow[0]=00
bitPatternNonBorrow[0]=00
dpatActive[0]=false
dpatPort[0]=9898
enableMappingCleanup[0]=true
mappingLifetime[0]=
bvgCPUThreshold[0]=70
rtpQOSPriority[0]=3
rtpMaxQueueLatency[0]=50
dpatRTPQOSActive[0]=false
rtpQosParamsActive[0]=00
guarRtpRateIn[0]=200M
guarRtpRateOut[0]=200M
maxRtpRateIn[0]=64K
maxRtpRateOut[0]=64K
enableBPG[0]=false
bpgMappingLifetime[0]=
bpgIdleTimeout[0]=
bpgCpuThreshold[0]=
interfaceNumber[1]=1
policy[1]=
virtualBrickAddress[1]=
dhcpTEPVBA[1]=false
matchVBAPackets[1]=false
zoneIPAddressOrRange[1]=*
zoneIPHost[1]=
allowedOutSourceIPAddressOrRange[1]=*
allowedOutSourceIPHost[1]=
localAddressmapping[1]=direct
localPresenceAddressOrRange[1]=
localPresenceHost[1]=
vpnCertificate[1]=
```

```
defaultAuthService[1]=
AuthTimeOut[1]=480
SourceIPs[1]=*
zonePriority[1]=16
maxQueueLatency[1]=500
qosParamsActive[1]=00
guarZoneRateIn[1]=
guarZoneRateOut[1]=
maxZoneRateIn[1]=
maxZoneRateOut[1]=
maxZoneConcSessTotal[1]=
maxZoneConcSessIn[1]=
maxZoneConcSessOut[1]=
setTOSDiffServBits[1]=false
separateBorrowSetting[1]=false
bitTemplate[1]=TOS
bitPatternBorrow[1]=00
bitPatternNonBorrow[1]=00
dpatActive[1]=false
dpatPort[1]=9898
enableMappingCleanup[1]=true
mappingLifetime[1]=
bvgCPUThreshold[1]=70
rtpQOSPriority[1]=3
rtpMaxQueueLatency[1]=50
dpatRTPQOSActive[1]=false
rtpQosParamsActive[1]=00
guarRtpRateIn[1]=200M
guarRtpRateOut[1]=200M
maxRtpRateIn[1]=64K
maxRtpRateOut[1]=64K
enableBPG[1]=false
bpgMappingLifetime[1]=
bpgIdleTimeout[1]=
bpgCpuThreshold[1]=
interfaceNumber[2]=2
policy[2]=administrativezone
virtualBrickAddress[2]=
dhcpTEPVBA[2]=false
matchVBAPackets[2]=false
zoneIPAddressOrRange[2]=*
zoneIPHost[2]=
allowedOutSourceIPAddressOrRange[2]=*
allowedOutSourceIPHost[2]=
localAddressmapping[2]=direct
localPresenceAddressOrRange[2]=
localPresenceHost[2]=
vpnCertificate[2]=
defaultAuthService[2]=
```

```
AuthTimeOut[2]=480
SourceIPs[2]=*
zonePriority[2]=16
maxQueueLatency[2]=500
qosParamsActive[2]=0
guarZoneRateIn[2]=
guarZoneRateOut[2]=
maxZoneRateIn[2]=
maxZoneRateOut[2]=
maxZoneConcSessTotal[2]=
maxZoneConcSessIn[2]=
maxZoneConcSessOut[2]=
setTOSDiffServBits[2]=false
separateBorrowSetting[2]=false
bitTemplate[2]=TOS
bitPatternBorrow[2]=00
bitPatternNonBorrow[2]=00
dpatActive[2]=false
dpatPort[2]=9898
enableMappingCleanup[2]=true
mappingLifetime[2]=1
bvgCPUThreshold[2]=70
rtpQOSPriority[2]=3
rtpMaxQueueLatency[2]=50
dpatRTPQOSActive[2]=false
rtpQosParamsActive[2]=0
guarRtpRateIn[2]=200M
guarRtpRateOut[2]=200M
maxRtpRateIn[2]=64K
maxRtpRateOut[2]=64K
enableBPG[2]=false
bpgMappingLifetime[2]=
bpgIdleTimeout[2]=
bpgCpuThreshold[2]=
interfaceNumber[3]=3
policy[3]=vpnzone
virtualBrickAddress[3]=135.112.247.28
dhcpTEPVBA[3]=false
matchVBAPackets[3]=false
zoneIPAddressOrRange[3]=
zoneIPHost[3]=nycsales
allowedOutSourceIPAddressOrRange[3]=*
allowedOutSourceIPHost[3]=
localAddressmapping[3]=direct
localPresenceAddressOrRange[3]=
localPresenceHost[3]=
vpnCertificate[3]=
defaultAuthService[3]=RADIUS
AuthTimeOut[3]=480
```

```
SourceIPs[3]=*
zonePriority[3]=16
maxQueueLatency[3]=500
qosParamsActive[3]=0
guarZoneRateIn[3]=
guarZoneRateOut[3]=
maxZoneRateIn[3]=
maxZoneRateOut[3]=
maxZoneConcSessTotal[3]=
maxZoneConcSessIn[3]=
maxZoneConcSessOut[3]=
setTOSDiffServBits[3]=false
separateBorrowSetting[3]=false
bitTemplate[3]=TOS
bitPatternBorrow[3]=00
bitPatternNonBorrow[3]=00
dpatActive[3]=false
dpatPort[3]=9898
enableMappingCleanup[3]=true
mappingLifetime[3]=1
bvgCPUThreshold[3]=70
rtpQOSPriority[3]=3
rtpMaxQueueLatency[3]=50
dpatRTPQOSActive[3]=false
rtpQosParamsActive[3]=0
guarRtpRateIn[3]=200M
guarRtpRateOut[3]=200M
maxRtpRateIn[3]=64K
maxRtpRateOut[3]=64K
enableBPG[3]=false
bpgMappingLifetime[3]=
bpgIdleTimeout[3]=
bpgCpuThreshold[3]=
interfaceNumber[4]=4
policy[4]=
virtualBrickAddress[4]=
dhcpTEPVBA[4]=false
matchVBAPackets[4]=false
zoneIPAddressOrRange[4]=*
zoneIPHost[4]=
allowedOutSourceIPAddressOrRange[4]=*
allowedOutSourceIPHost[4]=
localAddressmapping[4]=direct
localPresenceAddressOrRange[4]=
localPresenceHost[4]=
vpnCertificate[4]=
defaultAuthService[4]=
AuthTimeOut[4]=480
SourceIPs[4]=*
```

```
zonePriority[4]=16
maxQueueLatency[4]=500
qosParamsActive[4]=00
guarZoneRateIn[4]=
guarZoneRateOut[4]=
maxZoneRateIn[4]=
maxZoneRateOut[4]=
maxZoneConcSessTotal[4]=
maxZoneConcSessIn[4]=
maxZoneConcSessOut[4]=
setTOSDiffServBits[4]=false
separateBorrowSetting[4]=false
bitTemplate[4]=TOS
bitPatternBorrow[4]=00
bitPatternNonBorrow[4]=00
dpatActive[4]=false
dpatPort[4]=9898
enableMappingCleanup[4]=true
mappingLifetime[4]=
bvgCPUThreshold[4]=70
rtpQOSPriority[4]=3
rtpMaxQueueLatency[4]=50
dpatRTPQOSActive[4]=false
rtpQosParamsActive[4]=00
guarRtpRateIn[4]=200M
guarRtpRateOut[4]=200M
maxRtpRateIn[4]=64K
maxRtpRateOut[4]=64K
enableBPG[4]=false
bpgMappingLifetime[4]=
bpgIdleTimeout[4]=
bpgCpuThreshold[4]=
zoneInterfaceCount=5
zone[0]=vpnzone
service[0]=6/443/*
proxyDescription[0]=Automatic entry for user authentication
proxyIP[0]=@ManageServer
proxyPort[0]=9011
encrypt[0]=false
thekey[0]=
reflectionType[0]=single
passNoLPA[0]=false
proxyCount=1
destinationNetwork[0]=206.191.84.0/24
gatewayIP[0]=135.222.142.117
routeDisabled[0]=false
routeDescription[0]=
verifyRoute[0]=true
routeCost[0]=0
```

```
routePingDestAddr[0]=206.191.184.7
routePingSrcAddr[0]=135.222.142.117
routePingInterval[0]=10
routePingTimeout[0]=1
routePingMaxFail[0]=3
routeCount=1
destNetworkHostGroup[0]=
icmDescription[0]=Drop and No Audit
icmName[0]=Drop_Unaud
icmService[0]=*
icmThreshold[0]=0
icmAudit[0]=no
icmDrop[0]=yes
icmHalfOpen[0]=any
icmDescription[1]=Drop and Audit
icmName[1]=Drop_Audit
icmService[1]=*
icmThreshold[1]=0
icmAudit[1]=yes
icmDrop[1]=yes
icmHalfOpen[1]=any
icmDescription[2]=ICMP
icmName[2]=ICMP
icmService[2]=icmp
icmThreshold[2]=15
icmAudit[2]=any
icmDrop[2]=no
icmHalfOpen[2]=any
icmDescription[3]=UDP
icmName[3]=UDP
icmService[3]=udp
icmThreshold[3]=25
icmAudit[3]=any
icmDrop[3]=no
icmHalfOpen[3]=any
icmDescription[4]=TCP Half-Open
icmName[4]=TCP_SYN
icmService[4]=tcp
icmThreshold[4]=45
icmAudit[4]=any
icmDrop[4]=no
icmHalfOpen[4]=yes
icmDescription[5]=TCP Full-Open
icmName[5]=TCP_Full
icmService[5]=tcp
icmThreshold[5]=100
icmAudit[5]=any
icmDrop[5]=no
icmHalfOpen[5]=no
```

```
icmDescription[6]=SCTP Half-Open
icmName[6]=SCTP
icmService[6]=sctp
icmThreshold[6]=5
icmAudit[6]=any
icmDrop[6]=no
icmHalfOpen[6]=yes
icmDescription[7]=All other
icmName[7]=Any
icmService[7]=*
icmThreshold[7]=25
icmAudit[7]=any
icmDrop[7]=no
icmHalfOpen[7]=any
icmCount=8
pingFailoverCount=0
adminServerName=<user modified>,central-c2,cs-admin

adminServerAssocLSMS=,,central-c2

certType=dss
skipRouteCheck=false
```

brickruleset File

Overview

The rules file contains all the rules in a given Brick ruleset security policy.

The rules are presented in numerical order, beginning with the first rule. Each rule begins with a line that reads

```
*** Brick Rule # ***
```

where `Brick Rule #` is the number of the rule. Each field in the rule occupies a separate line in the file under the rule number.

Format

The following shows the format of each rule in the Rules file:

```
description=
foldername=

*** Brick Rule # ***
ruleNumber=
ruleDescription=
disabled=
sourceIP=*
destinationIP=
service=
direction=
act=
dropAction=
sessionTimeout=
depMask=
auditSession=
alarmCode=
natSourceIP=
natSourceType=
natDestinationIP=
natDestinationType=
destinationPortMapping=
maxUseTotal=
maxUseConcurrent=
authorizeReturnChannel=
vpn=
synFloodType=
synFloodTimeout=
synFloodCount=
vlanID=
allowIcmpReplies=
qosActive=
rulePriority=
maxQueueLatency=
qosParamsActive=
guarSessBitRateIn=
guarSessBitRateOut=
guarRuleBitRateIn=
guarRuleBitRateOut=
maxSessBitRateIn=
maxSessBitRateOut=
maxSessPktRateIn=
maxSessPktRateOut=
maxRuleBitRateIn=
maxRuleBitRateOut=
maxRulePktRateIn=
maxRulePktRateOut=
```

```
maxNewSessRateIn=
maxNewSessRateOut=
setTOSDiffServBits=
separateBorrowSetting=
bitTemplate=
bitPatternBorrow=
bitPatternNonBorrow=
alarmNewSessRate=
alarmRuleBitRate=
alarmRulePktRate=
statInterval=
todActive=
startTime=
endTime=
daysOfWeek=
timeSource=
toSDiffServMatch=
tcpStrict=false
auditSessionException=
strongTCPSeqNumbers=
tTCPOptions=
nonStandardOptions=
enforceTCPTimestamp=
brickmatch=
rbrFwdAddress=
rbrRevAddress=
rbrFwdRouteBox=
rbrFwdRouteSrcPort=
rbrFwdRouteDstPort=
rbrRevRouteBox=false
sctpActive=true
sctpStrict=true
sctpAllowHostNames=
sctpAllowUnrecChunkTypes=
sctpForwardAllow=
sctpReverseAllow=
sctpForwardAddr=*
sctpReverseAddr=*
sctpPPIDs=0,IUA - 1,M2UA - 2,M3UA - 3,SUA - 4,M2PA - 5,V5UA - 6,H.248 - 7,BICC/Q
```

Explanation

The following table describes each field in a rule:

Field	Explanation
`description`	An optional textual description of the entire ruleset. It can contain up to 80 characters. This field accepts lower case characters, numbers, and certain special characters.
`foldername`	This field indicates the path to the folder/subfolder where the named entity is located (i.e., foldername= folder1/subfolder1). If this field is left blank, the named entity is located in its respective root folder.
`ruleNumber`	The number of the rule. It can be a number from 1-65529. The rule number is actually determined by the position of the rule in the file. If the position changes, and a "save dependencymasks" (p. 2-95) command is executed, the rule's number will change accordingly. Rule 0 should never be edited.
`ruleDescription`	A description of the rule. This field corresponds to the **Description** field in the Brick Zone Rule Editor, Basic tab.
`disabled`	A value of **True** disables the rule; a value of **False** enables the rule. The default is **True**. This field corresponds to the **Rule Active** field on the Brick Zone Rule Editor, Basic tab.

Field	Explanation
`sourceIP`	The IP address of the source host. It can be an asterisk (wildcard), a single IP address, a host group, or a user group. If you enter a host group, the host group must also be in the HostGroups file to be valid. If you enter a user group, you must prefix the name with a ~(e.g., ~group1). This field corresponds to the **Source** field on the Brick Zone Rule Editor, Basic tab.
`destinationIP`	The IP address of the destination host. It can be an asterisk (wildcard), a single IP address, a host group, a user group, or a Virtual Brick Address (VBA). If you enter a host group, the host group must also be in the HostGroups file to be valid. If you enter a user group, you must prefix the name with a ~(e.g., ~group1). This field corresponds to the **Destination** field on the Brick Zone Rule Editor, Basic tab.
`service`	The protocol, destination port and source port. It can be an asterisk (wildcard), a choice from the drop-down menu, or a service group name. This field corresponds to the **Service or Group** field on the Brick Zone Rule Editor, Basic tab

Field	Explanation
`direction`	The direction of the packet flow relative to the Brick zone ruleset. It can be In To Zone, Out Of Zone, or Both. This field corresponds to the **Direction** field on the Brick Zone Rule Editor, Basic tab.
`act`	The action to be taken if the source host, destination host and service in the rule match that of the packet. It can be Drop, Pass, Proxy, VPN, or VPN Proxy. Default is Drop. This field corresponds to the **Action** field on the Brick Zone Rule Editor, Basic tab.
`dropAction`	Refers to rules that have Drop as their action. Indicates the type of action to be taken when a session is dropped by the Brick. The choices are: None (the default), ICMP All, Reset TCP Ignore Others (for dropped TCP sessions, the Brick spoofs an RST packet to the source only, for non-TCP sessions, no notification of any type is sent), Reset TCP, ICMP Others (for dropped TCP sessions, the Brick spoofs an RST packet to the source only, for non-TCP sessions, an ICMP 3/13 message is sent) This field corresponds to the **Drop Action** box on the Brick Zone Rule Editor, Basic tab.
`sessionTimeout`	The number of seconds of inactivity before an entry is removed from the session cache. It can be a number from 1-99,999. Default is 300. This field corresponds to the **Session Timeout** field on the Brick Zone Rule Editor, Advanced tab.

Field	Explanation
`depmask`	The name of a dependency mask. This field corresponds to the **Dependency Mask** field on the Brick Zone Rule Editor, Advanced tab.
`auditSession`	This field corresponds to the **Audit Session** field on the Brick Zone Rule Editor, Basic tab.
`alarmCode`	A code associated with an alarm. The alarm is triggered when a packet matching the rule arrives at the Brick. It can be a number from 1-65535, or a blank. This field corresponds to the **Alarm Code** field on the Brick Zone Rule Editor, Advanced tab.
`natSourceIP`	Used for network address translation. It is the address that the source host will be mapped to. It can be a single IP address, host group, VBA, or virtual_fw_addr. This field corresponds to the **Source Address Mapping** box on the Brick Zone Rule Editor, Address Translation tab.

Field	Explanation
`natSourceType`	Determines the type of source address mapping to be performed. It can be Direct, Pool or Local: • Direct causes the Brick to map source addresses on a one-to-one basis. It is the default. • Pool causes the Brick to map source addresses in a round robin fashion. • Local activates local presence feature which creates a pool of local addresses to use for client-LAN VPNs. (If the type is Local, the natSource field should be blank). • Dynamic causes the Brick to map all sessions from the same private source IP address to an IP address from a per-zone pool of public IP addresses. This field corresponds to the Source Address Mapping **Type** field on the Brick Zone Rule Editor, Address Translation tab.
`natDestinationIP`	Used for network address translation. It is the address that the destination host will be mapped to. It can be a Virtual Brick address or a host group. This field corresponds to the **Destination Address Mapping** box on the Brick Zone Rule Editor, Address Translation tab.

Field	Explanation
natDestinationType	Determines the type of destination address mapping to be performed. It can be Direct, Pool or Local: • Directly causes the Brick to map destination addresses on a one-to-one basis. It is the default. • Pool causes the brick to map destination addresses in a round robin fashion. • Local activates the local presence feature which creates a pool of local addresses to use for client-LAN VPNs. (If the type is Local, the natDestinationIP field should be blank). This field corresponds to the Destination Address Mapping **Type** field on the Brick Zone Rule Editor, Address Translation tab.
destinationPortMapping	The port(s) that will be used for destination port mapping. It can be a single port, a ranges of ports, or blank. This field corresponds to the **Destination Port Mapping** field on the Brick Zone Rule Editor, Address Translation tab.
maxUseTotal	Specifies the maximum number of times a rule can be invoked. The rule is disabled after the limit is reached. This field corresponds to the **Max Use Total** field on the Brick Zone Rule Editor, Advanced tab.
maxUseConcurrent	Specifies the maximum number of sessions authorized by the rule that can be active at one time. The rule becomes disabled when the limit is reached, and remains disabled until the count falls below the limit. This field corresponds to the **Max Use Concurrent** field on the Brick Zone Rule Editor, Advanced tab.

Field	Explanation
`authorizeReturnChannel`	Determines whether the initial packet of a session will create forward and reverse channels in cache with the same action, so that a separate rule is not needed to create a return channel. It can be True or False. Default is True. This field corresponds to the **Authorize Return Channel** checkbox on the Brick Zone Rule Editor, Advanced tab.
`vpn`	Determines whether packets authorized by this rule will be encrypted inside the Brick zone ruleset, outside the Brick zone ruleset, or both. It can be External, Internal, or Both. This field corresponds to the **Virtual Private Network** field on the Brick Zone Rule Editor, Advanced tab.
`synFloodType`	The type of SYN Flood protection for this rule. This field corresponds to the **SYN Flood Protection Type** field on the Brick Zone Rule Editor, Advanced tab.
`synFloodTimeout`	The timeout period after which the Brick sends a reset to the destination host. SYN Flood protection must be enabled on the rule for this timeout to be in effect. This field corresponds to the **SYN Flood Reset Timeout** field on the Brick Zone Rule Editor, Advanced tab.
`vlanID`	The VLAN identifier. The VLAN ID in the packets must match this VLAN ID for the rule to match a session. This field corresponds to the **VLAN ID** field on Brick Zone Rule Editor, Basic tab.

Field	Explanation
`allowIcmpReplies`	If enabled, allows ICMP messages containing the same 5-tuple — protocol, source address, destination address, source port (if any) and destination port (if any) — to be passed back to the other side of the Brick. This field corresponds to the **Allow ICMP Replies** checkbox on Brick Zone Rule Editor, Advanced tab.
`qosActive`	A value of `True` indicates that Bandwidth Management guarantees/limits are in effect. A value of `False`indicates that Bandwidth Management parameters are not being applied. The default is `False`.
`rulePriority`	This parameter controls which rule class(es) - session, rule, zone, physical port level - receive any available excess bandwidth once their guarantees are satisfied. This field corresponds to the **Rule Priority** field on the Brick Zone Rule Editor, Bandwidth tab.
`maxQueueLatency`	This parameter controls the maxium amount of time a packet will be queued in the Brick, in milliseconds. This field corresponds to the **Maximum Queue Latency (ms)** field on the Brick Zone Rule Editor, Bandwidth tab.
`guarSessBitRateIn` , `guarSessBitRateOut`, `maxSessionBitRateIn`, `maxSessBitRateOut`, `maxRuleBitRateIn`, `maxSessBitRateOut`, `maxSessPktRateIn`, `maxPktRateOut`, `maxRuleBitRateIn`, `maxRuleBitRateOut`, `maxRuleBitRateIn`, `maxRuleBitRateOut`, `maxRulePktRateIn`, `maxRulePktRateOut`, `maxNewSessRateIn`, `maxNewSessRateOut`	These fields are used to set the bandwidth guarantee and limit rates for sessions and rules at the bit and packet level. These fields correspond to the Limits and Guarantees fields on the Brick Zone Rule Editor, Bandwidth tab.

Field	Explanation
`setTOSDiffServBits`	A value of `True` indicates that the TOS/DiffServ bits are being utilized to prioritize IP traffic. A value of `False` indicates that TOS/DiffServ parameters are not being utilized. The default value is `False`.
`separateBorrowSetting`	A value of `True` indicates a TOS/DiffServ byte pattern is being used as matching criteria for the rule to be triggered. A value of `False` indicates that a TOS/DiffServ byte pattern match is not being utilized. The default value is `False`.
`bitTemplate`, `bitPatternBorrow`, `bitPatternNonBorrow`, `alarmNewSessRate`, `alarmruleBitRate`, `alarmRulePktRate`, `statInterval`, `TosDiffServMatch`	These fields are used to set the TOS/DiffServ and associated Rule Bandwidth Exceeded Alarm trigger parameters. These fields correspond to the TOS/DiffServ and Alarm When Traffic Exceeded fields on the Brick Zone Rule Editor, Bandwidth tab.
`todActive`	A value of `True` indicates that the Time of Day Restrictions feature is being applied to a rule. A value of `False` indicates the TOD feature is not being applied. The default value is `False`. This field corresponds to the **Time-of-Day Active** checkbox on the Brick Zone Rule Editor, Basic tab.
`startTime` `, endTime, daysofWeek, timeSource`	These fields are used to set the Time of Day Restrictions parameters for a rule. These fields correspond to the TOD feature fields on the Brick Zone Rule Editor, Basic tab.

Field	Explanation
`tcpStrict`	A value of `True` indicates that Strict TCP State Enforcement is being applied on a rule. A value of `False` indicates that Strict TCP Enforcement is not in effect. The default value is `True` for new rules in existing zones, all rules in new zones, and all rules in all zones for new installations.
`auditSessionException` `, strongTCPSeqNumbers, tTCPOptions, nonStandardOptionsenforceTCPTimestamp`	These fields are used to set up parameters for TCP validation. All of the fields accept a `True` or `False` value. These fields correspond to the TCP Validation fields on the Brick Zone Rule Editor, Basic tab.
`brickmatch`	Indicates whether the rule is specific to one or more Bricks. This field corresponds to the **Brick Match** field on the Brick Zone Rule Editor, Basic tab.
`rbrFwdAddress` `, rbrRevAddress, rbrFwdRouteBox, rbrFwdRouteSrcPort, rbrFwdRouteDstPort, rbrRevRouteBox`	These fields are used to set parameters for the Rules-Based Routing feature. The valid values for `rbrFwdRouteBox` are `Always Route to All Hosts` (the default), `Route to osts that Only Respond to Ping`, `Route to Hosts that Only Respond to Syn`
`sctpActive`	A value of `True` indicates that Stream Control Transport Protocol (SCTP) processing is active on a rule. A value of `False` indicates that SCTP processing is not being applied to a rule. The default value is `False`. This field corresponds to the **Enable SCTP Processing (for this rule only)** checkbox on the Brick Zone Rule Editor, SCTP tab.

Field	Explanation
`sctpStrict` `, sctpAllowHostNames, sctpAllowUnrecChunkTypes, sctpForwardAllow, sctpForwardAddr, sctpReverseAddr, sctpPPIDs`	These fields are used to specify parameters for SCTP processing on a rule. Valid values for the `sctpForwardAllow` and `sctpReverseAllow` fields are `deny` (the default) or `allow`. These fields correspond to the SCTP Processing options on the Brick Zone Rule Editor, SCTP tab.

Example

The following is an example of a fragment of a typical Brick ruleset file:

```
*** Brick Rule 1 ***
ruleNumber=0
ruleDescription=
disabled=false
sourceIP=*
destinationIP=*
service=*
direction=both
act=drop
dropAction=none
sessionTimeout=300
depMask=
auditSession=basic
alarmCode=
natSourceIP=
natSourceType=
natDestinationIP=
natDestinationType=
destinationPortMapping=
maxUseTotal=
maxUseConcurrent=
authorizeReturnChannel=true
vpn=
synFloodType=none
synFloodTimeout=
synFloodCount=
vlanID=*
allowIcmpReplies=false
qosActive=false
rulePriority=
maxQueueLatency=500
qosParamsActive=3FFF
guarSessBitRateIn=
guarSessBitRateOut=
guarRuleBitRateIn=
guarRuleBitRateOut=
maxSessBitRateIn=
maxSessBitRateOut=
maxSessPktRateIn=
maxSessPktRateOut=
maxRuleBitRateIn=
maxRuleBitRateOut=
maxRulePktRateIn=
maxRulePktRateOut=
maxNewSessRateIn=
maxNewSessRateOut=
setTOSDiffServBits=false
```

```
separateBorrowSetting=true
bitTemplate=TOS
bitPatternBorrow=
bitPatternNonBorrow=
alarmNewSessRate=
alarmRuleBitRate=
alarmRulePktRate=
statInterval=
todActive=false
startTime=00:00:00
endTime=23:59:59
daysOfWeek=127
timeSource=local
toSDiffServMatch=
tcpStrict=false
auditSessionException=basic
strongTCPSeqNumbers=false
tTCPOptions=false
nonStandardOptions=false
enforceTCPTimestamp=true
brickmatch=
rbrFwdAddress=
rbrRevAddress=
rbrFwdRouteBox=Always Route to All Hosts
rbrFwdRouteSrcPort=
rbrFwdRouteDstPort=
rbrRevRouteBox=false
sctpActive=true
sctpStrict=true
sctpAllowHostNames=false
sctpAllowUnrecChunkTypes=false
sctpForwardAllow=deny
sctpReverseAllow=deny
sctpForwardAddr=*
sctpReverseAddr=*
sctpPPIDs=0,IUA - 1,M2UA - 2,M3UA - 3,SUA - 4,M2PA - 5,V5UA - 6,H.248 - 7,BIC
```

```
*** Brick Rule 2 ***
ruleNumber=200
ruleDescription=allow bricks to send audit data to the LSMS and
  request downloads
disabled=false
sourceIP=brickRemoteAddresses
destinationIP=LSMS
service=brick_to_SMS_Services
direction=in
act=pass
dropAction=
sessionTimeout=300
depMask=
auditSession=basic
alarmCode=
natSourceIP=brickLocalAddresses
natSourceType=direct
natDestinationIP=
natDestinationType=
destinationPortMapping=
maxUseTotal=
maxUseConcurrent=
authorizeReturnChannel=true
vpn=
synFloodType=timeout_reset
synFloodTimeout=3
synFloodCount=1000
vlanID=*
allowIcmpReplies=false
qosActive=true
rulePriority=15
maxQueueLatency=500
qosParamsActive=3000
guarSessBitRateIn=
guarSessBitRateOut=
guarRuleBitRateIn=
guarRuleBitRateOut=
maxSessBitRateIn=
maxSessBitRateOut=
maxSessPktRateIn=
maxSessPktRateOut=
maxRuleBitRateIn=
maxRuleBitRateOut=
maxRulePktRateIn=
maxRulePktRateOut=
maxNewSessRateIn=80
maxNewSessRateOut=80
```

```
setTOSDiffServBits=false
separateBorrowSetting=true
bitTemplate=TOS
bitPatternBorrow=
bitPatternNonBorrow=
alarmNewSessRate=
alarmRuleBitRate=
alarmRulePktRate=
statInterval=
todActive=false
startTime=00:00:00
endTime=23:59:59
daysOfWeek=127
timeSource=local
toSDiffServMatch=
tcpStrict=false
auditSessionException=basic
strongTCPSeqNumbers=false
tTCPOptions=false
nonStandardOptions=false
enforceTCPTimestamp=true
brickmatch=
rbrFwdAddress=
rbrRevAddress=
rbrFwdRouteBox=Always Route to All Hosts
rbrFwdRouteSrcPort=
rbrFwdRouteDstPort=
rbrRevRouteBox=false
sctpActive=false
sctpStrict=true
sctpAllowHostNames=false
sctpAllowUnrecChunkTypes=false
sctpForwardAllow=deny
sctpReverseAllow=deny
sctpForwardAddr=*
sctpReverseAddr=*
sctpPPIDs=0,IUA - 1,M2UA - 2,M3UA - 3,SUA - 4,M2PA - 5,V5UA - 6,H.248 - 7,BIC
```

brickstatus File

Overview

The brickstatus file is a comma-separated list of the status details of each Brick for which an Administrator has view privileges.

The first line of the file shows the name of each field/parameter.

Explanation

The following table describes each field in a brickstatus file:

Field	Explanation
`Name`	The name of the Brick.
`IPAddress`	The IP address of Brick.
State	The current state of the Brick. Possible values are `up`, `lost`, or `unhealthy`. If the Brick is the standby Brick of a failover pair, it shows the operational state of the active and standby Brick in the pair.
`CPU%`	The percentage of the Brick device CPU currently in use.
`Sess%`	The percentage of the Brick device session cache currently in use.
`ActiveVersion`	If the Brick is a standalone, this is the version of the Brick device operating system. If the Brick device is part of a failover pair, this is the version of the active Brick operating system.
`StandbyVersion`	If the Brick is part of a failover pair, this is the version of the standby Brick operating system.
`FailoverLabels`	If this Brick device is part of a failover pair, the label consists of the last two octets of each Brick device MAC address, or the values configured by the administrator on the Failover tab of the Brick Editor. The label also indicates which Brick device is active and which is standby. If this Brick device is not configured as part of a failover pair, the failover label is *Not Configured*.
`PortStatus`	The number of ports up and down
`MgmtServer`	The name of the SMS to which this Brick is currently homed

Field	Explanation
`Roaming`	Indicates whether this Brick is ″roaming″ from its priority 1 SMS: • No means it is currently connected to SMS/CS other than priority 1 SMS/CS • Yes means it is currently connected to its priority 1 SMS/CS

Example

The following is an example of a typical brickstatus file:

```
Name,IPAddress,State,CPU%,Sess%,ActiveVersion,StandbyVersion,
   FailoverLabels,PortStatus,MgmtServer,Roaming
joesbrick,135.222.142.117,Lost,,,9.2.113,,,Up:0 Down:0 Disabled:0,,
radbrick,,Lost,,,9.3.163,,,Up:0 Down:0 Disabled:0,,
```

□

client license limits File

Overview

Retrieves the client license limits configuration to a file.

Format

The following shows the format of the client license limits file.

```
licenseFromKey=
groupCount=
groupName[i]=
groupLimit[i]=
count=
device[i]=
tepIP[i]=
activeSessionCount[i]=
policy[i]=

enabled[i]=
name[i]=
licenseLimit[i]=
```

Explanation

The following table describes each field in the client license limits file:

Field	Explanation
licenseFromKey	This field shows the total number of client licenses on the SMS based on the installed Feature Option keys. Note: licenseFromKey is not modified by saving this file.
groupCount	This field shows the number of Groups configured on the SMS.
groupName[i]	i is in the range of 0...groupCount-1. This field contains the name of the Group.

Field	Explanation
groupLimit[i]	i is in the range of 0...groupCount-1. This field contains the number of client licenses that are allocated to this group. The sum of the licenses allocated to all the groups must be less than or equal to licenseFromKey.
count	This field shows the number of client tunnel endpoints in the current group.
device[i]	i is in the range of 0...count-1. This field contains the Brick name of the TEP.
tepIP[i]	i is in the range of 0...count-1. This field contains the IP address of the TEP.
activeSessionCount[i]	i is in the range of 0...count-1. This field contains the number of currently active client users connected to the TEP.
policy[i]	i is in the range of 0...count-1. This field contains the name of the zone assigned to the TEP.
enabled[i]	i is in the range of 0...count-1. This field is true if the TEP is enabled or false if it is disabled.
name[i]	i is in the range of 0...count-1. This field contains the name of the TEP.
licenseLimit[i]	i is in the range of 0...count-1. This field contains the number of client licenses allocated to this TEP. The sum of the licenses assigned to all the TEPs in a group must be less than or equal to groupLimit for that group.

Example

The following is an example of a typical client license limits file.

```
licenseFromKey=10100
groupName[0]=group1
groupLimit[0]=10
groupName[1]=group2
groupLimit[1]=0
groupName[2]=group3
groupLimit[2]=0
groupName[3]=group4
groupLimit[3]=0
groupName[4]=group5
groupLimit[4]=0
groupName[5]=system
groupLimit[5]=5000
groupCount=6
count=7
device[0]=brick12
tepIP[0]=12.12.12.103
activeSessionCount[0]=0
policy[0]=vpnzone12ca2
enabled[0]=true
name[0]=brick12ca3
licenseLimit[0]=10
device[1]=brick12
tepIP[1]=dhcp
activeSessionCount[1]=0
policy[1]=administrativezone
enabled[1]=true
name[1]=brick12dhcp
licenseLimit[1]=10
device[2]=brick12
tepIP[2]=12.12.12.253
activeSessionCount[2]=0
policy[2]=vpnzone12
enabled[2]=true
name[2]=brick12vpn12
licenseLimit[2]=10
device[3]=brick13
tepIP[3]=13.13.13.253
activeSessionCount[3]=0
policy[3]=vpnzone13
enabled[3]=true
name[3]=brick13vpn
licenseLimit[3]=0
device[4]=brick55
tepIP[4]=55.55.55.203
activeSessionCount[4]=0
policy[4]=vpnzone55
```

```
enabled[4]=true
name[4]=brick55vpn55
licenseLimit[4]=10
device[5]=model80
tepIP[5]=dhcp
activeSessionCount[5]=0
policy[5]=administrativezone
enabled[5]=true
name[5]=model80admin
licenseLimit[5]=100
device[6]=model80
tepIP[6]=10.10.10.251
activeSessionCount[6]=0
policy[6]=vpnzone
enabled[6]=true
name[6]=model80tep
licenseLimit[6]=1000
```

client tunnel defaults File

Overview

Retrieves the default client tunnel configuration to a file.

Format

The following shows the format of the client tunnel defaults file:

```
hostGroup2=
heartBeatInterval=
missedHeartbeats=
idleTimeout=
groupKey=
receiveAnyProposals=
primaryDNS=
primaryWINS=
secondaryDNS=
secondaryWINS=
clientFirewall=
disableFirewall=
allowPasswordSave=
dhGroup=
isakmpEncryptionType=
isakmpAuthType=
ipsecProtocol=
ipsecEncryptionType=
ipsecAuthType=
ipsecSaLifetimeKBytes=
ipsecSaLifetimeSec=
ikeV2ipsecSaLifetimeKBytes=
ikeV2ipsecSaLifetimeSec=
enablePerfectFwdSecrecy=
enableCompression=
phase1GroupID=
transportMethod=
udpEncapPorts=
encapType=
ikeV1AuthMethod=
ikeV2AuthMethod=
ikeV2PresharedKey=
ikeV2IDType=
ikeV2ID=Virtual Brick Address
ikeV2CertIDType=IP Address
ikeV2EAPSendIDRequest=
allowVpnCerts=
remoteUserIDField=
trafficProtocol1=
localPorts1=
remotePorts1=
enableSA2=
ipsecProtocol2=
ipsecEncryptionType2=
ipsecAuthType2=
hostIPs2=
trafficProtocol2=
```

```
localPorts2=
remotePorts2=
remoteCA[n]=
count=
```

Explanation

The following table describes each field in the client tunnel defaults file:

Field	Explanation
`heartBeatInterval`	The Alcatel-Lucent IPSec Client is programmed to send out a keepalive/heartbeat message at regularly scheduled intervals to verify that it still has network connectivity to the other end of the tunnel. The Brick device that receives the message generates a message back to the client. The default is 300 (seconds). The valid range is 0-172800. An entry of zero (0) disables keepalive/heartbeat messages.*Note: If the Keepalive Interval is set to a value less than 30 seconds, it can adversely impact Brick performance as the number of IPSec clients increases.*
`missedHeartbeats`	This field indicates the number of missed heartbeat messages that the Brick and IPSec Client will allow before determining that the other end is not responding and the tunnel is taken down. The default is 3 (missed heartbeat messages). The valid range is 3-999.
`idleTimeout`	A client tunnel will time out after a specified period of time if there is no activity in the tunnel in either direction. The default is 30 minutes. The valid range is 1-2880 minutes.
`userGroupID`	Field is not currently used.
`userGroupKeyword`	Field is not currently used.

Field	Explanation
groupKey	A default group key is generated randomly by the system. If you are not using digital certificates to authenticate client users, the key will be used by all IKEv1 clients users in the group when they set up a tunnel from their PCs to the tunnel endpoint. You can change the key, which must contain between 8 and 20 characters. Valid characters include a - z, A - Z, 0 - 9, and the special characters : ; | + ? [2] ( ) < > ^ % $ # &
receiveAnyProposals	If this field is set to false, the client parameter and policy settings must match the TEP settings exactly for the tunnel to come up.If this field is set to true, the parameter and policy settings configured for the TEP are the preferred settings, but the Brick accepts any combination of settings that the client proposes, provided the Brick supports those options.
primaryDNS primaryWINS secondaryDNS secondaryWINS	If your environment includes DNS and/or WINS servers, you can enter the the IP addresses of these servers in the appropriate fields. The default in each field is 0.0.0.0.
clientFirewall	This field determines whether packets to and from the client that are *not* going through the tunnel will be passed or dropped. There are three allowed values: • *pass* (allows the packets through the Brick) • *drop* (allows *no* packets through the Brick) • *client* (sessions started on the Client will be allowed out, but no *new* sessions allowed in; supported by v3.1 of the Client and above) If you leave the default asterisk in the **Hosts Behind Tunnel** field when setting up a client tunnel, all traffic will automatically go through the tunnel. In this case, it does not matter what you enter in this field. The value of this field automatically overrides the firewall setting in the Alcatel-Lucent IPSec Client, if the two settings are different.
useEnhancedFirewall	Field is not currently used. Set to false.
disableFirewall	Entering true in this field will disable the built-in firewall. This feature only works if using Alcatel-Lucent IPSec Client V6.0.1 or higher.

Field	Explanation
allowPasswordSave	This field is a convenience for the Alcatel-Lucent IPSec Client user. By default, this field is true. This means client users have the option of saving their password the first time they enable a tunnel, so that they do not have to enter it again each time they enable the tunnel. If the value is set to false, client users will not have this option and will have to enter their password each time they enable a tunnel.
dhGroup	This field sets the Diffie-Hellman Group. The choices are: Group 1, Group 2, Group 5, Group 14, Group 15, Group 16. The default is Group 2.
isakmpEncryptionType	This field sets the encryption type for the IKE SA proposal. The options are TRIPLE DES CBC (default), DES CBC, AES CBC 128, AES CBC 192, and AES CBC 256.
isakmpAuthType	This field sets the authentication type for the IKE SA proposal. The valid values are: HMAC SHA1 (the default), AES XCBC (valid only for the IKEv2 client TEP setting), ANY NOT NULL, and HMAC MD5.
ipsecProtocol	This field sets the protocol for the IPSec SA Proposal. The default is ESP-50, but this can be changed to AH-51. ESP-50 provides both encryption and authentication for every packet, while AH-51 only provides authentication.
ipsecEncryptionType	This field sets the encryption type for the first IPSec SA Proposal. The options are TRIPLE DES CBC (default), DES CBC, AES CBC 128, AES CBC 192, AES CBC 256, and NULL (meaning Null Encryption).
ipsecAuthType	This field sets the authentication type for the IPSec SA Proposal. The valid values are: HMAC SHA1 (the default), AES XCBC (valid only for the IKEv2 client TEP setting), ANY NOT NULL, and HMAC MD5.

Field	Explanation

`ipsecSaLifetimeKBytes`
`ipsecSaLifetimeSec`
`ikeV2ipsecSaLifetimeKBytes`
`ikeV2ipsecSaLifetimeSec`
	The Security Association has a lifetime specified in kilobytes and seconds (set for IKEv1 and IKEv2 client TEPs, respectively). The defaults are 14400 seconds (4 hours) and 5,000,000 kilobytes (approximately T1 speed for 8 hours). You can change the lifetime in seconds to any value between 120 -157,680,000 seconds (between 2 minutes and 5 years). You can change the lifetime in kilobytes to any value between 1000 - 10,000,000 kilobytes.
	You can set the value of this field to 0 to disable SA expiration.
	The Security Association will expire after the *first* of the above two lifetimes is reached. The session will then have to re-key.

`enablePerfectFwdSecrecy`	By default, this value is false, If it is true, a second Diffie-Hellman key exchange will take place during processing. This can improve security, but it also can impact re-keying performance.
`enableCompression`	The compression feature only applies when the tunnel endpoint is a Brick or another device that supports LZS compression. If the device is a Brick, it must be equipped with an encryption accelerator card (either a Model 50, 150, 350, 500, 700 VPN, 1100A, or 1200). For Bricks with an encryption card, this feature should be enabled. Allowed values for this field are true and false. This feature is supported in v3.1 and above of the Acatel-Lucent IPSec Client.
`phase1GroupID`	The phase1GroupID is only used by non-Lucent IP. Sec Client programs. It is used in conjunction with Group Key (see below) for the first phase of the IKE negotiation process. If you are using the Alcatel-Lucent IPSec Client, you can ignore this field. The default is *gatewaygroupID*. If you are using a non-Lucent client, you can keep the default or change it. Whatever value you assign as the Group ID, you have to use it when configuring the non-Alcatel-Lucent client.

Field	Explanation
transportMethod udpEncapPorts encapType	These 3 fields define the allowed IPSec transport methods. Values for transportMethod are: pureipsec, udpencap, or both. Set to pureipsec for Pure IPSec (IP type 50/51), set to udpencap for IKEv1 UDP Encapsulation or IKEv2 NAT Traversal, and set to both if both Pure IPSec and UDP Encapsulation (IKEv1 and/or IKEv2) are allowed. Values for encapType are: lucent, natt, or both. Set to lucent for Pure IPSec or IKEv1 UDP Encapsulation, set to natt for IKEv2 NAT Traversal, and set to both if both IKEv1 UDP Encapsulation and IKEv2 NAT Traversal are allowed. The udpEncapPorts field contains a single port, comma separated list (no spaces), or a range of port numbers to be used for IKEv1 UDP Encapsulation. NAT Traversal automatically uses the standard port 4500 so it does not need to be included in the udpEncapPorts field.
ikeV1AuthMethod	This field specifies the IKEv1 Gateway authentication method. Set the value to key if the TEP should use the preshared key defined in the groupKey field for IKEv1 client authentications. Set the value to radius if the TEP should obtain the preshared key from RADIUS using the ″Per User Preshared Key (UMA)″ feature. If the value is set to radius, you must specify the IKEv1 Preshared Key RADIUS Attribute Code in the RADIUS response attributes for the RADIUS Authentication Service assigned to the TEP.
ikeV2AuthMethod	This field specified the IKEv2 Gateway authentication method. Set the value to key if the TEP should use the preshared key defined in the ikeV2PresharedKey field for IKEv2 client authentications. Set the value to cert if clients will use X.509 certificate authentication.
ikeV2PresharedKey	A default preshared key is generated randomly by the system. If you are not using digital certificates to authenticate client users, the key will be used by all IKEv2 clients users in the group when they set up a tunnel from their PCs to the tunnel endpoint. You can change the key, which must contain between 8 and 20 characters. Valid characters include a - z, A - Z, 0 - 9, and the special characters : ; | + ? ² ( ) < > ^ % $ # &

Field	Explanation
ikeV2IDType	This field specifies the ID Type to be used by the Gateway for IKEv2 client negotiations when the ikeV2AuthMethod is key. The allowed values are IP Address, Email Address, and Domain Name.
ikeV2ID	This field contains the Gateway IKEv2 ID value of the type specified in the ikeV2IDType field. This field only needs to be populated if the ikeV2AuthMethod is key. For certificate authentications, the ID value is automatically taken from the certificate. The special value ″Virtual Brick Address″ may be used when the ikeV2IDType is IP Address.
ikeV2CertIDType	This field specifies the ID Type to be used by the Gateway for IKEv2 client authentications when the ikeV2AuthMethod is cert. The allowed values are IP Address, Email Address, Domain Name, and Distinguished Name. For certificate authentication to work, the specified ID Type field must have a value in the certificate assigned to the TEP.
ikeV2EAPSendIDRequest	This field defines how the Brick device obtains the Client EAP Identity. Set to true to send an EAP Identity Request to the Client. Set to false to use the Client IKE ID.
allowVpnCerts	Set this field to true to allow IKEv2 clients to authenticate using X.509 Certificates. A VPN Certificate must be assigned to the TEP if you set this field to true. You must also assign a VPN Authentication Service to the TEP to specify the attribute checking to be done on client certificates.
remoteUserIDField	This field defines the attributes from the client's VPN certificate that should be used as the userID during authentication.Set to email to use the Email Address attributes, or dn to use the Domain Name attribute.
trafficProtocol1	The protocol for IPSec SA1. Allowed values are: * , icmp, sctp, tcp, udp, or an integer in the range 1-255.
localPorts1	The local ports for IPSec SA1. Allowed values are: *, an integer in the range 0-65535, or a low-high range of integers from 0-65535.
remotePorts1	The remote ports for IPSec SA1. Allowed values are: *, an integer in the range 0-65535, or a low-high range of integers from 0-65535.

Field	Explanation
enableSA2	Set to true to enable IPSec SA2 or false to disable it.
ipsecProtocol2	The IpSec protocol for SA2. Allowed values are: ESP50 or AH-51.
ipsecEncryptionType2	The Encryption Type for SA2. Allowed values are: TRIPLE DES CBC, DES CBC, AES CBC 128, AES CBC 192, AES CBC 256, and NULL (meaning Null Encryption).
ipsecAuthType2	The Authentication Type for SA2. Allowed values are: HMAC SHA1, AES XCBC, ANY NOT NULL, HMAC MD5.
hostGroup2	The name of the host group for SA2. Blank if a value is specified in the hostIPs2 field.
hostIPs2	Set this field to * if SA2 applies to all IP addresses. Otherwise, set this field to blank and specify a host group in the hostGroup2 field.
trafficProtocol2	The protocol for IPSec SA2. Allowed values are: *, icmp, sctp, tcp, udp, or an integer in the range 1-255.
localPorts2	The local ports for IPSec SA2. Allowed values are: *, an integer in the range 0-65535, or a low-high range of integers from 0-65535.
remotePorts2	The remote ports for IPSec SA2. Allowed values are: *, an integer in the range 0-65535, or a low-high range of integers from 0-65535.
remoteCA[n]	This field contains the distinguished name (certificate Subject attribute) of a Certificate Authority that signs certificates for remote VPN clients that are allowed to connect to this client tunnel endpoint.
count	The number of remoteCA[] fields that are present in this configuration file.

Example

The following is an example of a typical client tunnel defaults file:

```
hostGroup2=
heartBeatInterval=300
missedHeartbeats=3
idleTimeout=30
groupKey=v4TCGS2RD5vbCbARh6Ju
receiveAnyProposals=true
primaryDNS=0.0.0.0
primaryWINS=0.0.0.0
secondaryDNS=0.0.0.0
secondaryWINS=0.0.0.0
clientFirewall=client
disableFirewall=false
allowPasswordSave=true
dhGroup=Group 2
isakmpEncryptionType=TRIPLE DES CBC
isakmpAuthType=HMAC SHA1
ipsecProtocol=ESP-50
ipsecEncryptionType=TRIPLE DES CBC
ipsecAuthType=HMAC SHA1
ipsecSaLifetimeKBytes=5000000
ipsecSaLifetimeSec=14400
ikeV2ipsecSaLifetimeKBytes=5000000
ikeV2ipsecSaLifetimeSec=14400
enablePerfectFwdSecrecy=false
enableCompression=false
phase1GroupID=gatewaygroupid
transportMethod=both
udpEncapPorts=501
encapType=natt
ikeV1AuthMethod=key
ikeV2AuthMethod=key
ikeV2PresharedKey=v4TCGS2RD5vbCbARh6Ju
ikeV2IDType=IP Address
ikeV2ID=Virtual Brick Address
ikeV2CertIDType=IP Address
ikeV2EAPSendIDRequest=true
allowVpnCerts=false
remoteUserIDField=email
trafficProtocol1=*
localPorts1=*
remotePorts1=*
enableSA2=false
ipsecProtocol2=ESP-50
ipsecEncryptionType2=NULL
ipsecAuthType2=HMAC SHA1
hostIPs2=*
trafficProtocol2=*
```

```
localPorts2=*
remotePorts2=*
remoteCA[0]=CN=TestCA1,OU=VPN Firewall,O=Alcatel-Lucent,L=Holmdel,ST=
  New Jersey,C=US
remoteCA[1]=CN=TestCA2,OU=VPN Firewall,O=Alcatel-Lucent,L=Holmdel,ST=
  New Jersey,C=US
count=2
```

□

client tunnel File

Overview

Retrieves the specified client tunnel configuration to a file.

Format

The following shows the format of the client tunnel file:

```
localTep=
brick=
authService=
authTimeout=
hostGroup=
hostGroup2=
name=
hostIPs=
licenseLimit=
enabled=
useDefaultParameters=
heartBeatInterval=
missedHeartbeats=
idleTimeout=
groupKey=
receiveAnyProposals=
primaryDNS=
primaryWINS=
secondaryDNS=
secondaryWINS=
clientFirewall=
disableFirewall=
allowPasswordSave=
useDefaultPolicy=
dhGroup=
isakmpEncryptionType=
isakmpAuthType=
ipsecProtocol=
ipsecEncryptionType=
ipsecAuthType=
ipsecSaLifetimeKBytes=
ipsecSaLifetimeSec=
ikeV2ipsecSaLifetimeKBytes=
ikeV2ipsecSaLifetimeSec=
enablePerfectFwdSecrecy=
enableCompression=
phase1GroupID=
transportMethod=
udpEncapPorts=
debugLevel=
debugSourceIP=
debugUserID=
ikeV1Allowed=
ikeV2Allowed=
encapType=
useDefaultIKEv1=
useDefaultIKEv2=
```

```
useDefaultRemoteClientID=
ikeV1AuthMethod=
ikeV2AuthMethod=
ikeV2PresharedKey=
ikeV2IDType=
ikeV2ID=
ikeV2CertIDType=
ikeV2EAPSendIDRequest=true
allowVpnCerts=
remoteUserIDField=
enablePDGAccounting=
defaultDMSAPN=
pdgMCCMNC=
pdgIntervalMins=
pdgIntervalBytes=
waitForAccountingStart=
enableLawfulIntercept=
trafficProtocol1=
localPorts1=
remotePorts1=
enableSA2=
ipsecProtocol2=
ipsecEncryptionType2=
ipsecAuthType2=
hostIPs2=
trafficProtocol2=
localPorts2=
remotePorts2=
remoteCA[n]=
count=
skipOverlapCheck=
```

Explanation

The following table describes each field in the client tunnel file:

Field	Explanation
`localTep`	This field contains two pieces of information separated by a comma and a space: the Virtual Brick Address of the TEP and the name of the zone assigned to the TEP.
`brick`	Enter the name of the Brick containing the TEP.

Field	Explanation
authService	Enter the name of the Authentication Service used to authenticate client users that connect to the TEP.
authTimeout	Enter the amount of time (in minutes) that client users will be authenticated. When the authentication times out, users will be disconnected. Allowed values are 1 to 2628000 minutes (5 years).
hostGroup	This field specifies the hosts behind the tunnel endpoint. If you want all outbound traffic from the client to go through the tunnel, leave this field blank and set the hostIPs field to astsrisk (*). Otherwise, enter the name of a host group containing specific IP addresses. If you enter a host group, make sure the **clientFirewall** field is set properly. The **clientFirewall** field determines whether traffic to other hosts (traffic that does not go through the tunnel)will be passed or dropped by the Brick.
name	Enter a name for this TEP in this field.
hostIPs	If this field is set to *, all outbound traffic from the client will automatically go through the tunnel. Otherwise, a host group must be specified in the hostGroup field with specific IP addresses that should be routed through the tunnel.
licenseLimit	This field sets the maximum number of active client sessions that are allowed for this TEP.
enabled	Set this field to true to enable the TEP. If this field is set to false, clients will not be allowed to connect to this tunnel endpoint.
useDefaultParameters	Set this field to true if the fields on the Parameters tab for this TEP should be updated with the values from the group Client Defaults when the Client Defaults are updated.

Field	Explanation
`heartBeatInterval`	The Alcatel-Lucent IPSec Client is programmed to send out a keepalive/heartbeat message at regularly scheduled intervals to verify that it still has network connectivity to the other end of the tunnel. The Brick device that receives the message generates a message back to the client. The default is 300 (seconds). The valid range is 0-172800. An entry of zero (0) disables keepalive/heartbeat messages.*Note: If the Keepalive Interval is set to a value less than 30 seconds, it can adversely impact Brick performance as the number of IPSec clients increases.*
`missedHeartbeats`	This field indicates the number of missed heartbeat messages that the Brick and IPSec Client will allow before determining that the other end is not responding and the tunnel is taken down. The default is 3 (missed heartbeat messages). The valid range is 3-999.
`idleTimeout`	A client tunnel will time out after a specified period of time if there is no activity in the tunnel in either direction. The default is 30 minutes. You can change this to any 1-minute period between 1 and 2880 minutes.
`groupKey`	A default group key is generated randomly by the system. If you are not using digital certificates to authenticate client users, the key will be used by all IKEv1 client users in the group when they set up a tunnel from their PCs to the tunnel endpoint. You can change the key, which must contain between 8 and 20 characters. Valid characters include a - z, A - Z, 0 - 9, and the special characters : ; | + ? ″ ( ) < > ^ % $ # &

Field	Explanation
primaryDNS primaryWINS secondaryDNS secondaryWINS	If your environment includes DNS and/or WINS servers, you can enter the the IP addresses of these servers in the appropriate fields. The default in each field is 0.0.0.0.
clientFirewall	This field determines whether packets to and from the client that are *not* going through the tunnel will be passed or dropped. There are three options: • *Pass All* (allows the packets through the Brick device) • *Drop All* (allows **no** packets through the Brick) • *Pass if Client Initiated* (sessions started on the Client will be allowed out, but no **new** sessions allowed in; supported by v3.1 of the Client and above) The valid values for this field are: pass, drop, or client. If you leave the default asterisk in the **Hosts Behind Tunnel** field when setting up a client tunnel, all traffic will automatically go through the tunnel. In this case, it does not matter what you enter in this field. *Note:* The value you enter in this field automatically overrides the firewall setting in the Alcatel-Lucent IPSec Client, if the two differ.
disableFirewall	Entering true in this field will disable the built-in firewall. This feature only works if using Alcatel-Lucent IPSec Client V6.0.1 or higher. *Note:* Disabling the firewall also removes the ″Allow Multi-session Protocol″ feature from the client's GUI.

Field	Explanation
allowPasswordSave	This field is a convenience for the Alcatel-Lucent IPSec Client user. By default, this field is true. This means client users have the option of saving their password the first time they enable a tunnel, so that they do not have to enter it again each time they enable the tunnel. If the value is set to false, client users will not have this option and will have to enter their password each time they enable a tunnel.
useDefaultPolicy	Set this field to true if the fields on the Policy tabfor this TEP should be updated with the values from the group Client Defaults when the Client Defaults are updated.
dhGroups	This field sets the Diffie-Hellman Group. The choices are: Group 1, Group 2, Group 5, and Group 14. The default is Group 2.
isakmpEncryptionType	This field sets the encryption type for the IKE SA proposal. The options are TRIPLE DES CBC (default), DES CBC, AES CBC 128, AES CBC 192, and AES CBC 256.
isakmpAuthType	This field sets the authentication type for the IKE SA proposal. The valid values are: HMAC SHA1 (the default), AES XCBC (valid only for the IKEv2 client TEP setting), ANY NOT NULL, and HMAC MD5.
ipsecProtocol	This field sets the protocol for the IPSec SA Proposal. The default is ESP-50, but this can be changed to AH-51. ESP-50 provides both encryption and authentication for every packet, while AH-51 only provides authentication.

Field	Explanation
ipsecEncryptionType	This field sets the encryption type for the first IPSec SA Proposal. The valid values are TRIPLE DES CBC (default), DES CBC, AES CBC 128, AES CBC 192, and AES CBC 256, and NULL (meaning Null Encryption).
ipsecAuthType	This field sets the authentication type for the IPSec SA Proposal. The valid values are: HMAC SHA1 (the default), AES XCBC (valid only for the IKEv2 client TEP setting), ANY NOT NULL, and HMAC MD5.
ipsecSaLifetimeKBytes ipsecSaLifetimeSec ikeV2ipsecSaLifetimeKBytes ikeV2ipsecSaLifetimeSec	The Security Association has a lifetime specified in kilobytes and seconds (for IKEv1 and IKEv2 client TEPs, respectively). The defaults are 14400 seconds (4 hours) and 5,000,000 kilobytes (approximately T1 speed for 8 hours). You can change the lifetime in seconds to any value between 120 -157,680,000 seconds (between 2 minutes and 5 years). You can change the lifetime in kilobytes to any value between 1000 - 10,000,000 kilobytes. You can set the value of this field to 0 to disable SA expiration. The Security Association will expire after the *first* of the above two lifetimes is reached. The session will then have to re-key.
enablePerfectFwdSecrecy	By default, this value is false, If it is true, a second Diffie-Hellman key exchange will take place during processing. This can improve security, but it also can impact re-keying performance.

Field	Explanation
`enableCompression`	The compression feature only applies when the tunnel endpoint is a Brick or another device that supports LZS compression. If the device is a Brick, it must be equipped with an encryption accelerator card (either a Model 50, 150, 350, 500, 700 VPN, 1100A, or 1200). For Bricks with an encryption card, this feature should be enabled. Allowed values for this field are true and false. This feature is supported in v3.1 and above of the Alcatel-Lucent IPSec Client.
`phase1GroupID`	The phase1GroupID is only used by non Alcatel-Lucent IPSec Client programs. It is used in conjunction with Group Key (see above) for the first phase of the IKE negotiation process. If you are using the Alcatel-Lucent IPSec Client, you can ignore this field. The default is gatewaygroupID. If you are using a non-Lucent client, you can keep the default or change it. Whatever value you assign as the Group ID, you have to use it when configuring the non-Lucent client.

Field	Explanation

`transportMethod`
`udpEncapPorts`
`encapType`
	These 3 fields define the allowed IPSec transport methods. Values for transportMethodare: pureipsec, udpencap, or both. Set to pureipsec for Pure IPSec (IP type 50/51), set to udpencap for IKEv1 UDP Encapsulation or IKEv2 NAT Traversal, and set to both if both Pure IPSec and UDP Encapsulation (IKEv1 and/or IKEv2) are allowed. Values for encapType are: lucent, natt, or both. Set to lucent for Pure IPSec or IKEv1 UDP Encapsulation, set to natt for IKEv2 NAT Traversal, and set to both if both IKEv1 UDP Encapsulation and IKEv2 NAT Traversal are allowed. The udpEncapPorts field contains a single port, comma separated list (no spaces), or a range of port numbers to be used for IKEv1 UDP Encapsulation. NAT Traversal automatically uses the standard port 4500 so it does not need to be included in the udpEncapPorts field.

`debugLevel`
`debugSourceIP`
`debugUserID`
	The debugLevel field controls the level of debugging for the TEP. When tunnel debugging is enabled, the Brick writes debug messages in the VPN log, identified by zone, tunnel endpoint name, remote TEP (client IP), and User ID. The available choices are 0 (debugging off), 1, 2, and 3 (most verbose). Enter the IP address of the remote client machine in the `debugSourceIP` field. Enter a User ID in the `debugUserID` field. Valid values for a User ID are upper/lowercase letters, 0-9, and certain special characters (?~!@$%`&-_+=[]). Spaces are allowed. An asterisk (*) can be used as a wildcard character to specify a partial User ID.

`ikeV1Allowed`	Set to true to allow IKEv1 clients to authenticate to this TEP.
`ikeV2Allowed`	Set to true to allow IKEv2 clients to authenticate to this TEP.

Field	Explanation
useDefaultIKEv1	Set this field to true if the fields on the IKEv1 Gateway tab for this TEP should be updated with the values from the group Client Defaults when the Client Defaults are updated.
useDefaultIKEv2	Set this field to true if the fields on the IKEv2 Gateway tab for this TEP should be updated with the values from the group Client Defaults when the Client Defaults are updated.
useDefaultRemoteClientID	Set this field to true if the fields on the Remote Client ID tab for this TEP should be updated with the values from the group Client Defaults when the Client Defaults are updated.
ikeV1AuthMethod	This field specifies the IKEv1 Gateway authentication method. Set the value to key if the TEP should use the preshared key defined in the groupKey field for IKEv1 client authentications. Set the value to radius if the TEP should obtain the preshared key from RADIUS using the ″Per User Preshared Key (UMA)″ feature. If the value is set to radius, you must specify the IKEv1Preshared Key RADIUS Attribute Code in the RADIUS response attributes for the RADIUS Authentication Service assigned to the TEP.
ikeV2AuthMethod	This field specified the IKEv2 Gateway authentication method. Set the value to key if the TEP should use the preshared key defined in the ikeV2PresharedKey field for IKEv2 client authentications. Set the value to cert if clients will use X.509 certificate authentication.

Field	Explanation
ikeV2PresharedKey	A default preshared key is generated randomly by the system. If you are not using digital certificates to authenticate client users, the key will be used by all IKEv2 clients users in the group when they set up a tunnel from their PCs to the tunnel endpoint. You can change the key, which must contain between 8 and 20 characters. Valid characters include a - z, A - Z, 0 - 9, and the special characters : ; | + ? [2] ( ) < > ^ % $ # &
ikeV2IDType	This field specifies the ID Type to be used by the Gateway for IKEv2 client negotiations when the ikeV2AuthMethod is key, The allowed values are IP Address, Email Address, and Domain Name.
ikeV2ID	This field contains the Gateway's IKEv2 ID value of the type specified in the ikeV2IDType field. This field only needs to be populated if the ikeV2AuthMethod is key. For certificate authentications, the ID value is automatically taken from the certificate. The special value ″Virtual Brick Address″ may be used when the ikeV2IDType is IP Address.
ikeV2CertIDType	This field specifies the ID Type to be used by the Gateway for IKEv2 client authentications when the ikeV2AuthMethod is cert. The allowed values are IP Address, Email Address, Domain Name, and Distinguished Name. For certificate authentication to work, the specified ID Type field must have a value in the certificate assigned to the TEP.
ikeV2EAPSendIDRequest	This field defines how the Brick obtains the Client EAP Identity. Set to true to send an EAP Identity Request to the Client. Set to false to use the Client IKE ID.

Field	Explanation
allowVpnCerts	Set this field to true to allow IKEv2 clients to authenticate using X.509 Certificates. A VPN Certificate must be assigned to the TEP if you set this field to true. You must also assign a VPN Authentication Service to the TEP to specify the attribute checking to be done on client certificates.
remoteUserIDField	This field defines the attributes from the client's VPN certificate that should be used as the userID during authentication. Set to email to use the Email Address attributes, or dn to use the Domain Name attribute.
enablePDGAccounting	Set this field to true to enable the PDG Accounting feature. The default value is false.
defaultDMSAPN	This field contains the string that should be used as the Dual Mode Service Access Point Name if it is not included in the IKE authentication request sent by the Dual Mode Handset. The DMS-APN is used in the Called-Station-Id field in RADIUS authentication and accounting messages.
pdgMCCMNC	This field contains the Mobile Country Code and Mobile Network Code of the network the Brick belongs to. It is used in the 3GPP-GGSN-MCC-MNC field in RADIUS authentication and accounting messages.
pdgIntervalMins	The Brick device will send accounting updates to RADIUS at the interval configured in this field. The default value is 30.
pdgIntervalBytes	The Brick device will send accounting updates to RADIUS whenever the tunnel traffic volume (input+output bytes) reaches the configured value or a multiple of the value. The default is 0, which means the Brick device will not send accounting updates based on traffic volume.

Field	Explanation
waitForAccountingStart	This field is currently not used. The value should be true.
enableLawfulIntercept	Set this field to true to enable the PDG Lawful Intercept feature. Otherwise, set it to false.
remoteCA[n]	This field contains the distinguished name (certificate Subject attribute) of a Certificate Authority that signs certificates for remote VPN clients that are allowed to connect to this client tunnel endpoint.
count	The number of remoteCA[] fields that are present in this configuration file.
skipOverlapCheck	Set this field to true if you received error N7028, which indicates that the Hosts Behind Tunnel for this TEP overlap with hosts behind another tunnel, but you want to save this TEP anyway.
trafficProtocol1	The protocol for IPSec SA1. Allowed values are: * , icmp, sctp, tcp, udp, or an integer in the range 1-255.
localPorts1	The local ports for IPSec SA1. Allowed values are: *, an integer in the range 0-65535, or a low-high range of integers from 0-65535.
remotePorts1	The remote ports for IPSec SA1. Allowed values are: *, an integer in the range 0-65535, or a low-high range of integers from 0-65535.
enableSA2	Set to true to enable IPSec SA2 or false to disable it.
ipsecProtocol2	The IpSec protocol for SA2. Allowed values are: ESP50 or AH-51.
ipsecEncryptionType2	The Encryption Type for SA2. Allowed values are: TRIPLE DES CBC, DES CBC, AES CBC 128, AES CBC 192, AES CBC 256, and NULL (meaning Null Encryption).
ipsecAuthType2	The Authentication Type for SA2. Allowed values are: HMAC SHA1, AES XCBC, ANY NOT NULL, HMAC MD5.

Field	Explanation
hostGroup2	The name of the host group for SA2. Blank if a value is specified in the hostIPs2 field.
hostIPs2	Set this field to * if SA2 applies to all IP addresses. Otherwise, set this field to blank and specify a host group in the hostGroup2 field.
trafficProtocol2	The protocol for IPSec SA2. Allowed values are: *, icmp, sctp, tcp, udp, or an integer in the range 1-255.
localPorts2	The local ports for IPSec SA2. Allowed values are: *, an integer in the range 0-65535, or a low-high range of integers from 0-65535.
remotePorts2	The remote ports for IPSec SA2. Allowed values are: *, an integer in the range 0-65535, or a low-high range of integers from 0-65535.

Example

The following is an example of a typical client tunnel file:

```
localTep=135.112.247.28, vpnzone
brick=joesbrick
authService=RADIUS
authTimeout=480
hostGroup=nycsales
hostGroup2=
name=nytola
hostIPs=
licenseLimit=0
enabled=true
useDefaultParameters=true
heartBeatInterval=300
missedHeartbeats=3
idleTimeout=30
groupKey=v4TCGS2RD5vbCbARh6Ju
receiveAnyProposals=true
primaryDNS=0.0.0.0
primaryWINS=0.0.0.0
secondaryDNS=0.0.0.0
secondaryWINS=0.0.0.0
clientFirewall=client
disableFirewall=false
allowPasswordSave=true
useDefaultPolicy=true
dhGroup=Group 2
isakmpEncryptionType=TRIPLE DES CBC
isakmpAuthType=HMAC SHA1
ipsecProtocol=ESP-50
ipsecEncryptionType=TRIPLE DES CBC
ipsecAuthType=HMAC SHA1
ipsecSaLifetimeKBytes=5000000
ipsecSaLifetimeSec=14400
ikeV2ipsecSaLifetimeKBytes=5000000
ikeV2ipsecSaLifetimeSec=14400
enablePerfectFwdSecrecy=false
enableCompression=false
phase1GroupID=gatewaygroupid
transportMethod=both
udpEncapPorts=501
debugLevel=0
debugSourceIP=
debugUserID=
ikeV1Allowed=true
ikeV2Allowed=true
encapType=natt
useDefaultIKEv1=true
useDefaultIKEv2=true
```

```
useDefaultRemoteClientID=true
ikeV1AuthMethod=key
ikeV2AuthMethod=key
ikeV2PresharedKey=v4TCGS2RD5vbCbARh6Ju
ikeV2IDType=IP Address
ikeV2ID=Virtual Brick Address
ikeV2CertIDType=IP Address
ikeV2EAPSendIDRequest=true
allowVpnCerts=false
remoteUserIDField=email
enablePDGAccounting=false
defaultDMSAPN=
pdgMCCMNC=
pdgIntervalMins=30
pdgIntervalBytes=0
waitForAccountingStart=true
enableLawfulIntercept=false
trafficProtocol1=*
localPorts1=*
remotePorts1=*
enableSA2=false
ipsecProtocol2=ESP-50
ipsecEncryptionType2=
ipsecAuthType2=HMAC SHA1
hostIPs2=*
trafficProtocol2=*
localPorts2=*
remotePorts2=*
remoteCA[0]=CN=TestCA1,OU=VPN Firewall,O=Alcatel-Lucent,L=Holmdel,ST=
  New Jersey,C=US
remoteCA[1]=CN=TestCA2,OU=VPN Firewall,O=Alcatel-Lucent,L=Holmdel,ST=
  New Jersey,C=US
count=2
skipOverlapCheck=false
```

hostgroups File

Overview

The HostGroups file contains the fields for a host group in a given group's security policy.

Each file begins with a line that reads

```
***HOST GROUP***
```

Format

The following shows the format of the HostGroups file:

```
*** HOST GROUP ***
ipAddressOrRange=
hostDescription=
nestedHostGroupName=
foldername=
useGlobally=false
description=
name=
```

Explanation

The following table describes each field in a host group:

Field	Explanation
`ipAddressOrRange`	The IP addresses in the host group. It can be a single IP address, a list of IP addresses, or a range of IP addresses. Subnet masks are allowed. This field corresponds to the **Host Addresses** field on the Host Group Editor.
`hostDescription`	This optional field is used to store a brief description of the host(s) associated with the IP address(es) in the host group. This field corresponds to the **Host Description** field on the Host Group Entry window.

Field	Explanation
nestedHostGroupName	This field indicates the name(s) of any host group(s) nested within this host group.
foldername	This field indicates the path to the folder/subfolder where the named entity is located (i.e., foldername=folder1/subfolder1). If this field is left blank, the named entity is located in its respective root folder.
useGlobally	This field indicates whether this host group can be used globally across groups. Valid values for this field are true or false. By default, this field is set to false. This field corresponds to the **Display and Use Globally** checkbox on the Host Group Editor.
description	This field contains an optional description of the host group. They can contain from 1-80 characters. This field corresponds to the **Description** field on the Host Group Editor.
name	This field specifies the host group name. It corresponds to the **Name** field on the Host Group Editor. The name can contain up to 44 characters, and can consists of upper and lower case characters, numbers, and certain special characters.

Example

The following is an example of a typical HostGroups file:

```
*** HOST GROUP ***
ipAddressOrRange=135.112.248.28-135.112.248.45
hostDescription=nyc sales department servers
nestedHostGroupName=
foldername=
useGlobally=false
description=servers for nyc sales department logs
name=nycsales
```

□

lan2lan tunnel defaults File

Overview

Retrieves the default LAN-to-LAN tunnel configuration to a file.

Format

The following shows the format of the lan2lan tunnel defaults file:

```
preSharedkey=
startDate=
endDate=
sendAllProposals=
receiveAnyProposals=
customerName=
email=
phone=
comment=
ipsecProtocol=
ipsecEncryptionType=
ipsecAuthType=
ipsecSaLifetimeSec=
ipsecSaLifetimeKBytes=
enablePerfectFwdSecrecy=
enableCompression=
dhGroup=
isakmpEncryptionType=
isakmpAuthType=
isakmpSaLifetimeSec=
transportMethod=
udpEncapPorts=
heartBeatInterval=
probeInterval=
probesPerReport=
roundTripThreshold=
pktLostWaitTime=
```

Explanation

The following table describes each field in the lan2lan tunnel defaults file:

Field	Explanation
`preSharedkey`	A key is automatically generated by the SMS. You can change this key if you wish, but it must contain 8 to 20 characters. This key is used by both tunnel endpoints, if an IKE negotiation is needed. This can happen if two Bricks are managed by different SMS or if a Brick is setting up a tunnel with another vendor's device. If you select this option, you have to obtain and install a certificate on the workstation running the application. See the chapter on *Digital Certificates* in the *SMS Policy Guide.*

`startDate`
and
`enDate`
	These dates determine the time period during which this tunnel is operable.
	The default is a 99-year time period, beginning with the current date. You can change this.

`receiveAnyProposals`
and
`sendAllProposals`
	These two values are true by default. The purpose is to enhance interoperability.
	When these values are true, the ISAKMP and IPSec parameters will be negotiated at a possibly lower security level than you specified to allow devices configured differently to still serve as one tunnel endpoint.
	However, if you want to ensure that only devices sharing your ISAKMP and IPSec parameters can serve as a tunnel endpoint, set either or both values to false.

`customerName`
`email`
`phone`
`comment`
	If one of the endpoints is administered by another individual, you can endter information about that person in these fields.
	This data is purely informational and not used in tunnel negotiations.

Field	Explanation
ipsecProtocol	This field sets the protocol for the IPSec SA Proposal. The default is ESP-50, but this can be changed to AH-51. ESP-50 provides both encryption and authentication for every packet, while AH-51 only provides authentication.
ipsecEncryptionType	This field sets the encryption type for the IPSec SA Proposal. The options are TRIPLE DES CBC (default), DES CBC, AES CBC 128, AES CBC 192, and AES CBC 256.
ipsecAuthType	This field sets the authentication type for the IPSec SA Proposal. The default is HMAC SHA1, but you can change this to HMAC MD5.
ipsecSaLifetimeSec	This Security Association has a lifetime specified in seconds. The default is 14,400 seconds (6 hours). You can change the lifetime in seconds to any value between 120 and 172,860 seconds (between 2 minutes and 48 hours).
secSaLifetimeKBytes	This Security Association has a lifetime specified in kilobytes. The default is 10,000,000 kilobytes. To change this, enter a number between 61000 and 10,000,000 kilobytes. *NOTE:* The Security Association will expire after the *first* of two lifetimes is reached. However, no session will be permitted to timeout before one minute, even if one of the above two lifetimes is reached first.
enablePerfectFwdSecrecy	By default, this value is false. If it is true, a new Diffie-Hellman key exchange will take place at every rekey interval, thereby increasing rekey time and the load on the Brick. This can improve security, but it can also affect performance.

Field	Explanation
`enableCompression`	This field applies only to LAN-LAN tunnels between a Brick with an encryption accelerator card and any device that supports LZS compression. By default, it is false. If it is true, traffic through the tunnel will be compressed. The advantage of compression is that it means less data has to be sent over the wires, which may help conserve bandwidth and speed up transmission. The disadvantage is that it requires extra processing (to compress and decompress) on either end of the tunnel — which has performance implications at the tunnel endpoints.
`dhGroup`	The default is Diffie-Hellman Group 1, but you can change this to Group 2. Group 2 provides more security than the Group 1, but rekey time may be better using Group 1.
`isakmpEncryptionType`	This field sets the encryption type for the IKE SA proposal. The options are TRIPLE DES CBC (default), DES CBC, AES CBC 128, AES CBC 192, and AES CBC 256.
`isakmpAuthType`	This field sets the authentication type for the IKE SA proposal. The default is HMAC SHA1, but you can change this to HMAC MD5.
`isakmpSaLifetimeSec`	This Security Association has a lifetime specified in seconds. The default is 86400 seconds (24 hours). You can change the lifetime in seconds to any value between 120 and 172, 860 seconds (between 2 minutes and 48 hours).
`transportMethod`	This field determines the transport method. The default is pure IPSec (IP type 50/51), but you can change this to UDP Encapsulated (IP type 17).
`udpEncapPorts`	If the transport method is set to UDP Encapsulated, the default port is set to port 501. You can change this port.

Field	Explanation
heartBeatInterval	The Brick will send heartbeat messages through the tunnel at regular intervals. This field allows you to set the interval (in seconds). The default is 30 seconds. Enter a value of zero (0) to disable keepalive/heartbeat messages. The heart beat is used to determine the status of the tunnel that is displayed in the LAN-LAN Tunnel Viewer and the Status Overview portion of the Status Monitor.
probeInterval	The default is a 30 second probe interval.
probesPerReport	The default is 10 probes per report.
roundTrThreshold	The default round tr delay threshold is 1000 miliseconds.
pktLostWaitTime	The default packet lost timeout period is 3000 miliseconds.

Example

The following is an example of a typical lan2lan tunnel defaults file:

```
preSharedkey=FyaffaTfxgbpyWqzTycx
startDate=2002-06-26 00:00:00.0
endDate=2101-06-26 00:00:00.0
sendAllProposals=false
receiveAnyProposals=false
customerName=
email=
phone=
comment=
ipsecProtocol=ESP-50
ipsecEncryptionType=TRIPLE DES CBC
ipsecAuthType=HMAC SHA1
ipsecSaLifetimeSec=14400
ipsecSaLifetimeKBytes=10000000
enablePerfectFwdSecrecy=false
enableCompression=false
dhGroup=Group 1
isakmpEncryptionType=TRIPLE DES CBC
isakmpAuthType=HAMC SHA1
isakmpSaLifetimeSec=86400
transportMethod=pureipsec
udpEncapPorts=501
heartBeatInterval=39
probeInterval=30
probesPerReport=19
roundTripThreshold=1000
pktLostWaitTime=3000
```

lan2lan tunnel File

Overview

Retrieves the specified LAN-to-LAN tunnel configuration to a file.

Format

The following shows the format of the lan2lan tunnel file:

```
localTep=
remoteTep=
e1Brick=
e1Group=
e2Brick=
e2Group=
localHostGroup=
remoteHostGroup=
endpointType=
useDefaultSLA=
heartBeatInterval=
description=
e12e2ah_AuthKey=
ipsecAuthType=
ipsecProtocol=
e22e1esp_AuthKey=
unmanagedIP=
probeInterval=
email=
e12e2ah_spi=
isakmpAuthType=
useDefaultPolicy=
e12e2manualProtocol=
enableCompression=
preSharedkey=
comment=
remotePhase1ID=
vpnType=
localPhase1ID=
remoteVpnCA=
e12e2esp_AuthType=
e22e1esp_EncryptionKey=
e22e1ah_AuthKey=
receiveAnyProposals=
probesPerReport=
initiator=
customerName=
ipsecSaLifetimeKBytes=
unmanagedDeviceName=
e2PresharedKey=
e2IDType=
e22e1esp_spi=
remoteHostIPs=
e1AuthMethod=
e12e2esp_spi=
useDefaultParameters=
roundTripThreshold=
```

```
name=
e12e2ah_AuthType=
e12e2esp_EncryptionType=
endDate=
e1IDType=
isakmpEncryptionType=
isakmpSaLifetimeSec=
dstSLA=
enableSLA=
enableTunnel=
enablePerfectFwdSecrecy=
e22e1esp_EncryptionType=
e12e2esp_AuthKey=
encapType=
phone=
udpEncapPorts=
remoteDistinguishedName=
debugLevel=
srcSLA=
e22e1esp_AuthType=
ipsecSaLifetimeSec=
e22e1ah_spi=
ipsecMode=
e22e1ah_AuthType=
e2AuthMethod=
localHostIPs=
e22e1manualProtocol=
transportMethod=
pktLostWaitTime=
sendAllProposals=
e12e2esp_EncryptionKey=
ipsecEncryptionType=
dhGroup=
authByDistinguishedName=
startDate=
skipOverlapCheck=
```

Explanation

The following table describes each field in the lan2lan tunnel file:

Field	Explanation
enableTunnel	Set this field to true to enable the tunnel.
name	Enter a name for the tunnel in this field.
description	Enter a description for the tunnel in this field.

Field	Explanation
vpnType	Set this field to auto for IKEv1 tunnels, autoV2 for IKEv2 tunnels, and manual for Manual Key tunnels.
initiator	Set this field to true when Endpoint 2 is the initiator. If Endpoint 1 is the initiator, set the field to false.
debugLevel	The debugLevel field controls the level of debugging for the tunnel. When tunnel debugging is enabled, the Brick writes debug messages in the VPN log, identified by zone, tunnel endpoint name and remote TEP. The available choices are 0 (debugging off), 1, 2, and 3 (most verbose).
localTep	This field contains two pieces of information for Endpoint 1, separated by a comma and a space: the Virtual Brick Address of the TEP and the name of the zone assigned to the TEP.
remoteTep	This field contains two pieces of information for Endpoint 2, separated by a comma and a space: the Virtual Brick Address of the TEP and the name of the zone assigned to the TEP.
e1Brick	This field contains the name of the Endpoint 1 Brick.
e1Group	This field contains the name of the Group of the Endpoint 1 Brick.
e2Brick	This field contains the name of the Endpoint 2 Brick. If Endpoint 2 is not a Brick, this field is blank.
e2Group	This field contains the name of the Group of the Endpoint 2 Brick. If Endpoint 2 is not a Brick, this field is blank.
localHostIPs localHostGroup	These fields are used to specify the host IP addresses behind Endpoint 1. Use localHostIPs to specify asterisk (*) for all hosts, a single IP address, a range or an address with subnet mask. For a list of IP Addresses, ranges, or addresses with subnet masks, create a host group and specify the name of the host group in the localHostGroup field. Only fill one of these fields and leave the other blank.

Field	Explanation
remoteHostIPs remoteHostGroup	These fields are used to specify the host IP addresses behind Endpoint 2. Use remoteHostIPs to specify asterisk (*) for all hosts, a single IP address, a range or an address with subnet mask. For a list of IP addresses, ranges, or addresses with subnet masks, create a host group and specify the name of the host group in the remoteHostGroup field. Only fill one of these fields and leave the other blank.
endpointType	This field specifies the Endpoint 2 type. Allowed values are: device (endpoint is a Brick), ip (endpoint is not a Brick or is a Brick that is managed by another SMS), or other (endpoint is mobile and will be identified By Name rather than By IP Address).
unmanagedIP	If endpointType is ip, this field contains the IP Address of Endpoint 2, otherwise this field is blank.
unmanagedDeviceName	If endpointType is other, or if endpointType is device and it is a mobile TEP (dhcp, pppoe1, or pppoe2), this field contains the IKE ID of Endpoint 2; otherwise, this field is blank.
localPhase1ID	If preshared key authentication is used, this field contains the IKE ID for Endpoint 1; otherwise, it contains the word certificate.
remotePhase1ID	If preshared key authentication is used, this field contains the IKE ID for Endpoint 2. If X.509 certificate authentication is used, and Endpoint 2 is a Brick, this field contains the word certificate; otherwise, it contains the IKE ID of Endpoint 2.
e1AuthMethod e2AuthMethod	These fields are set to key for preshared key authentication or cert for X.509 certificate authentication. Both fields must be set to the same value.
e1IDType e2IDType	These fields set the IKE ID Type for Endpoint 1 and Endpoint 2. For preshared key authentication the allowed values are: IP Address, Domain Name, or Email Address (IKEv2 only). For IKEv1 mobile endpoints or if endpointType is other, the ID Type must be Domain Name. For X.509 certificate authentication the allowed values are: Distinguished Name, IP Address, Domain Name (IKEv2 only), or Email Address (IKEv2 only).

Field	Explanation
preSharedkey	This field contains the key for IKEv1 preshared key authentication. The key must contain between 8 and 20 characters. Valid characters include a - z, A - Z, 0 - 9, and the special characters : ; | + ? ² ( ) < > ^ % $ # &
e2PresharedKey	This field contains the key for IKEv2 preshared key authentication. The key must contain between 8 and 20 characters. Valid characters include a - z, A - Z, 0 - 9, and the special characters : ; | + ? ² ( ) < > ^ % $ # &
remoteDistinguishedName	This field contains the Endpoint 2 Distinguished Name for X.509 certificate authentication. It is a semi-colon delimited field using the following format: CN=commonName;O=orgName;OU=orgUnit;L= locality;ST=state;C=country
authByDistinguishedName	This field is set to true if X.509 certificate authentication is being used and the ID Type is Distinguished Name.
remoteVpnCA	This field contains the Distinguished Name of the CA Certificate used by Endpoint 2 for X.509 certificate authentication.
useDefaultParameters	Set this field to true if the fields on the Parameters tab for this tunnel should be updated with the values from the group LAN-LAN Defaults when the LAN-LAN Defaults are updated.
customerName email phone comment	If one of the endpoints is administered by another individual, you can enter information about that person in these fields. This data is purely informational and not used in tunnel negotiations.
startDate endDate	These dates determine the time period during which this tunnel is operable. The default is a 99-year time period, beginning with the current date. You can change these dates.

Field	Explanation
heartBeatInterval	For IKEv1 tunnels, the Brick sends heartbeat/keepalive messages through the tunnel at regular intervals. This field allows you to set the interval (in seconds). The default is 30 seconds. Enter a value of zero (0) to disable keepalive/heartbeat messages. For IKEv2 tunnels, this is the Dead Peer Detection interval which is set by sending IKEv2 messages rather than packets through the tunnel itself. The heartbeat is used to determine the status of the tunnel that is displayed in the LAN-LAN Tunnel Viewer and the Status Overview portion of the Status Monitor.
receiveAnyProposals sendAllProposals	The purpose of these fields is to enhance interoperability. When they are set to true, the IKE SA parameters and IPSec parameters will be negotiated at a possibly lower security level than you specified, to allow devices configured differently to still serve as one tunnel endpoint. However, if you want to ensure that only devices sharing your IKE SA parameters and IPSec parameters can serve as a tunnel endpoint, set either or both of these fields to false.
transportMethod udpEncapPorts encapType	These 3 fields define the tunnel IPSec transport method. Values for transportMethod are: pureipsec or udpencap. Set to pureipsec for Pure IPSec (IP type 50/51), set to udpencap for IKEv1 UDP Encapsulation or IKEv2 NAT Traversal. Values for encapType are: lucent or natt. Set to lucent for Pure IPSec or IKEv1 UDP Encapsulation, set to natt for IKEv2 NAT Traversal. The udpEncapPorts field contains the port number to be used for IKEv1 UDP Encapsulation. NAT Traversal automatically uses the standard port 4500 so it does not need to be included in the udpEncapPorts field.
useDefaultPolicy	Set this field to true if the fields on the Policy tab for this tunnel should be updated with the values from the group LAN-LAN Defaults when the LAN-LAN Defaults are updated.
dhGroup	This field sets the Diffie-Hellman Group. The choices are: Group 1, Group 2, Group 5, and Group 14. The default is Group 5.

Field	Explanation
isakmpEncryptionType	This field sets the encryption type for the IKE SA proposal. The options are TRIPLE DES CBC (default), DES CBC, AES CBC 128, AES CBC 192, and AES CBC 256.
isakmpAuthType	This field sets the authentication type for the IKE SA proposal. The default is HMAC SHA1, but you can change this to HMAC MD5.
isakmpSaLifetimeSec	This Security Association has a lifetime specified in seconds. The default is 86400 seconds (24 hours). You can change the lifetime in seconds to any value between 60-172,860 seconds (between 1 minute and 48 hours).
ipsecProtocol	This field sets the protocol for the IPSec SA Proposal. The default is ESP-50, but this can be changed to AH-51. ESP-50 provides both encryption and authentication for every packet, while AH-51 only provides authentication.
ipsecEncryptionType	This field sets the encryption type for the IPSec SA Proposal. The options are TRIPLE DES CBC (default), DES CBC, AES CBC 128, AES CBC 192, and AES CBC 256.
ipsecAuthType	This field sets the authentication type for the IPSec SA Proposal. The default is HMAC SHA1, but you can change this to HMAC MD5.
ipsecSaLifetimeKBytes	The Security Association has a lifetime specified in seconds and kilobytes. The defaults are 14400 seconds (4 hours) and 10,000,000 kilobytes. You can change the lifetime in seconds to any value between 60 -86400 seconds (between 1 minute and 24 hours). You can change the lifetime in kilobytes to any value between 1000 - 10,000,000 kilobytes. The Security Association will expire after the first of the above two lifetimes is reached. The session will then have to re-key.
enablePerfectFwdSecrecy	By default, this value is false, If it is true, a second Diffie-Hellman key exchange will take place during processing. This can improve security, but it also can impact re-keying performance.

Field	Explanation
enableCompression	The compression feature only applies to LAN-LAN tunnels between a Brick with an encryption accelerator cards and any device that supports LZS compression. By default this field is false. If set to true, traffic through the tunnel will be compressed. The advantage of compression is that it means less data has to be sent over the wires, which may help conserve bandwidth and speed up transmission. The disadvantage is that it requires extra processing (to compress and decompress) on either end of the tunnel, which has performance implications at the tunnel endpoints.
useDefaultSLA	Set this field to true if the fields on the SLA tab for this tunnel should be updated with the values from the group LAN-LAN Defaults when the LAN-LAN Defaults are updated.
enableSLA	Set this field to true to enable the SLA Probe feature for this tunnel.
srcSLA dstSLA	Set the probe source and destination IP Addresses. For Brick endpoints, the keyword TEP may be used to indicate that the Virtual Brick Address of the dnpoint should be used.
probeInterval	This field sets the probe interval in seconds. Allowed values are 1-21,600.
probesPerReport	This field sets the number of probes per report. Allowed values are 1-86,400.
roundTripThreshold	This field sets the probe maximum round trip delay in milliseconds. Allowed values are 10-30,000.
pktLostWaitTime	This field sets the probe packet lost timeout value in milliseconds. Allowed values are 10-30,000.
e12e2manualProtocol	This field sets the protocol for Endpoint 1 to Endpoint 2 traffic for manual key tunnels. Allowed values are ESP or AH.
e12e2esp_spi	This field sets the ESP SPI for Endpoint 1 to Endpoint 2 traffic for manual key tunnels. When creating new tunnels this field can be set to Auto and the Brick will assign a value. The SPI should be a hex value in the range: 100-FFFF.

Field	Explanation
e12e2esp_ EncryptionType	This field sets the ESP encryption type for Endpoint 1 to Endpoint 2 traffic for manual key tunnels. Allowed values are NULL, DES CBC, TRIPLE DES CBC, AES CBC 128, AES CBC 192, and AES CBC 256.
e12e2esp_EncryptionKey	This field sets the ESP encryption key for Endpoint 1 to Endpoint 2 traffic for manual key tunnels.[1].
e12e2esp_AuthType	This field sets the ESP authentication type for Endpoint 1 to Endpoint 2 traffic for manual key tunnels. Allowed values are NULL, HMAC MD5, and HMAC SHA1.
e12e2esp_AuthKey	This field sets the ESP authentication key for Endpoint 1 to Endpoint 2 traffic for manual key tunnels.[2].
e12e2ah_spi	This field sets the AH SPI for Endpoint 1 to Endpoint 2 traffic for manual key tunnels. When creating new tunnels this field can be set to Auto and the Brick will assign a value. The SPI should be a hex value in the range: 100-FFFF.
e12e2ah_AuthType	This field sets the AH authentication type for Endpoint 1 to Endpoint 2 traffic for manual key tunnels. Allowed values are HMAC MD5 and HMAC SHA1.
e12e2ah_AuthKey	This field sets the AH authentication key for Endpoint 1 to Endpoint 2traffic for manual key tunnels.[3].
e22e1manualProtocol	This field sets the protocol for Endpoint 2 to Endpoint 1 traffic for manual key tunnels. Allowed values are ESP or AH.
e22e1esp_spi	This field sets the ESP SPI for Endpoint 2 to Endpoint 1 traffic for manual key tunnels. When creating new tunnels this field can be set to Auto and the Brick assigns a value. The SPI should be a hex value in the range: 100-FFFF.
ipsecMode	This field sets the IPSec Mode for LAN-LAN tunnels. Allowed values are tunnel or transport.
e22e1esp_ EncryptionType	This field sets the ESP encryption type for Endpoint 2 to Endpoint 1 traffic for manual key tunnels. Allowed values are NULL, DES CBC, TRIPLE DES CBC, AES CBC 128, AES CBC 192, and AES CBC 256.
e22e1esp_EncryptionKey	This field sets the ESP encryption key for Endpoint 2 to Endpoint 1 traffic for manual key tunnels.[4].

Field	Explanation
e22e1esp_AuthType	This field sets the ESP authentication key for Endpoint 2 to Endpoint 1 traffic for manual key tunnels.[5]
e22e1ah_spi	This field sets the AH SPI for Endpoint 2 to Endpoint 1 traffic for manual key tunnels. When creating new tunnels this field can be set to Auto and the Brick assigns a value. The SPI should be a hex value in the range: 100-FFFF.
e22e1ah_AuthType	This field sets the AH authentication type for Endpoint 2 to Endpoint 1 traffic for manual key tunnels. Allowed values are HMAC MD5 and HMAC SHA1.
e22e1ah_AuthKey	This field sets the AH authentication key for Endpoint 2 to Endpoint 1 traffic for manual key tunnels.[6]
skipOverlapCheck	Set this field to true if you got error N7028, which indicates that the Hosts Behind Tunnel for this tunnel overlap with hosts behind another tunnel, but you want to save this tunnel anyway.

Notes:

1. For the e12e2esp EncryptionKey field, the key contains hex characters and should be the proper length based on the encryption type as shown in Table 3-1, “e12e2esp EncryptionKey Field Values” (p. 3-85).
2. For the e12e2esp AuthKey field, the key contains hex characters and should be the proper length based on the authentication type as shown in Table 3-2, “e12e2esp AuthKey Field Values” (p. 3-85).
3. For the e12e2ah AuthKey field, the key contains hex characters and should be the proper length based on the authentication type as shown in Table 3-3, “e12e2ah AuthKey Field Values” (p. 3-85).
4. For the e22e1esp EncryptionKey field, the key contains hex characters and should be the proper length based on the encryption type as shown in Table 3-4, “e22e1esp EncryptionKey Field Values” (p. 3-85).
5. For the e22e1esp AuthKey field, the key contains hex characters and should be the proper length based on the authentication type as shown in Table 3-5, “e22e1esp AuthKey Field Values” (p. 3-86).

6. For the `e22e1ah AuthKey` field, the key contains hex characters and should be the proper length based on the authentication type as shown in Table 3-6, “e22e1ah AuthKey Field Values” (p. 3-86).

Table 3-1 `e12e2esp EncryptionKey Field Values`

Encryption Type	Field Length
DES CBC	16
TRIPLE DES CBC	48
AES CBC 128	32
AES CBC 192	48
AES CBC 256	64

Table 3-2 e12e2esp AuthKey Field Values

Authentication Type	Field Length
HMAC MD5	32
HMAC SHA1	40

Table 3-3 e12e2ah AuthKey Field Values

Authentication Type	Field Length
HMAC MD5	32
HMAC SHA1	40

Table 3-4 `e22e1esp EncryptionKey Field Values`

Encryption Type	Field Length
DES CBC	16
TRIPLE DES CBC	48
AES CBC 128	32
AES CBC 192	48
AES CBC 256	64

Table 3-5 `e22e1esp AuthKey Field Values`

Authentication Type	Field Length
HMAC MD5	32
HMAC SHA1	40

Table 3-6 e22e1ah AuthKey Field Values

Authentication Type	Field Length
HMAC MD5	32
HMAC SHA1	40

Example

The following is an example of a typical lan2lan tunnel file:

```
localTep=135.112.247.28, vpnzone
remoteTep=dhcp, nocgwzone
e1Brick=joesbrick
e1Group=system
e2Brick=radbrick
e2Group=system
localHostGroup=nycsales
remoteHostGroup=SNMP_Managers
endpointType=device
useDefaultSLA=true
heartBeatInterval=30
description=
e12e2ah_AuthKey=
ipsecAuthType=HMAC SHA1
ipsecProtocol=ESP-50
e22e1esp_AuthKey=
unmanagedIP=
probeInterval=30
email=
e12e2ah_spi=
isakmpAuthType=HMAC SHA1
useDefaultPolicy=true
e12e2manualProtocol=
enableCompression=false
preSharedkey=56fT$D#+C5tyq7
comment=
remotePhase1ID=datapoint
vpnType=auto
localPhase1ID=Virtual Brick Address
remoteVpnCA=
e12e2esp_AuthType=
e22e1esp_EncryptionKey=
e22e1ah_AuthKey=
receiveAnyProposals=true
probesPerReport=10
initiator=true
customerName=
ipsecSaLifetimeKBytes=10000000
unmanagedDeviceName=datapoint
e2PresharedKey=56fT$D#+C5tyq7
e2IDType=Domain Name
e22e1esp_spi=
remoteHostIPs=
e1AuthMethod=key
e12e2esp_spi=
useDefaultParameters=true
roundTripThreshold=1000
```

```
name=nytola
e12e2ah_AuthType=
e12e2esp_EncryptionType=
endDate=2106-04-09 00:00:00.0
e1IDType=IP Address
isakmpEncryptionType=TRIPLE DES CBC
isakmpSaLifetimeSec=86400
dstSLA=TEP
enableSLA=false
enableTunnel=true
enablePerfectFwdSecrecy=false
e22e1esp_EncryptionType=
e12e2esp_AuthKey=
encapType=lucent
phone=
udpEncapPorts=501
remoteDistinguishedName=;;;;;C=US
debugLevel=0
srcSLA=TEP
e22e1esp_AuthType=
ipsecSaLifetimeSec=14400
e22e1ah_spi=
ipsecMode=tunnel
e22e1ah_AuthType=
e2AuthMethod=key
localHostIPs=
e22e1manualProtocol=
transportMethod=pureipsec
pktLostWaitTime=3000
sendAllProposals=true
e12e2esp_EncryptionKey=
ipsecEncryptionType=TRIPLE DES CBC
dhGroup=Group 5
authByDistinguishedName=true
startDate=2007-04-09 00:00:00.0
skipOverlapCheck=false
```

□

servicegroups File

Overview

The ServiceGroups file contains the fields for a service group in a given group's security policy.

Each service group begins with the following line:

```
* * * SERVICE GROUP * * *
```

Each service group field occupies a separate line in the file.

Format

The following shows the format of each service group in the ServiceGroups file:

```
*** SERVICE GROUP ***
protocol=udp/69/*
timeout=
disableFilters=false
svcDescription=
applicationFilterName=TFTP
nestedServiceGroupName=
foldername=
useGlobally=false
description=TFTP with monitoring
name=TFTP_App
```

Explanation

The table below describes each field in a service group:

Field	Explanation
protocol	A tuple consisting of: the protocol name (TCP, UDP, or ICMP), or an asterisk (wildcard), the source port, and the destination port. This field corresponds to the **Protocol**, **Source Port or Range**, and **Destination Port or Range** fields on the Service Editor.

Field	Explanation
`timeout`	This field corresponds to the **Session Timeout** field on the Service Editor. It allows you to specify a timeout value which overrides the rule session timeout setting. This field defines the time that a session of the specified service type may be idle before timing out. This setting can simplify the rule structure by eliminating the need to have different rules for different timeouts.
`disableFilters`	This field corresponds to the **Disable all filtering including built-in** checkbox on the Service Editor and may be set to `true` or **false**. When set to **true**, it disables any application filtering of traffic for the specified protocol, including the built-in filtering performed on certain protocols/ports by the Brick device. This option applies to the FTP, TFTP, IKE (udp) and EUA (udp) traffic protocols. Built-in application filtering of traffic is normally performed by the Brick on the following protocols/ports: • FTP - tcp/21 • TFTP - udp/69 • IKE - udp/500 and udp/4500 • EUA - udp/911/9020 (for example, dstport=911 and srcport=9020)
`svcDescription`	This field corresponds to the **Description** field on the Service Editor. It allows an administrator to enter any descriptive text (from 1-80 characters).
`applicationFilterName`	This field corresponds to the **Application Filter** field on the Service Editor. It allows you to specify an application filter to be applied on the selected protocol.
`nestedServiceGroupName`	This field corresponds to the **Nested Service Group** field when the **Select Nested Service Group** radio button is selected on the Service Editor. It allows you to specify the name of a nested service group to be incorporated within this service group.

Field	Explanation
foldername	This field indicates the path to the folder/subfolder where the named entity is located (i.e., foldername=folder1/subfolder1). If this field is left blank, the named entity is located in its respective root folder.
useGlobally	This field corresponds to the **Display and Use Globally** checkbox on the Service Group Editor and may be set to **true** or **false**. When set to **true**, it defines the named service group as a global service group.
description	Any remarks the administrator chooses to enter (from 1-80 characters). This field corresponds to the **Description** field on the Service Group Editor.
name	This field corresponds to the **Name** field on the Service Group Editor and allows you to specify a name for the service group.

Example

The following is an example of a typical ServiceGroup file:

```
*** SERVICE GROUP ***
protocol=tcp/21/*
timeout=
disableFilters=false
svcDescription=
applicationFilterName=ftpDefault
nestedServiceGroupName=
useGlobally=false
description=ftp service
name=ftp
```

□

dependency masks File

Overview

The depmasks file contains all the fields for a dependency mask in a given group's security policy.

Each dependency mask file begins with a line that reads

```
***DEPENDENCY MASKS***
```

Each field in the dependency mask occupies a separate line in the file.

Format

The following shows the format of each dependency mask in the dependency masks file:

```
*** DEPENDENCY MASKS ***
description=
destinationIP=
service=
direction=
action=
alarmCode=
hitCount=
```

Explanation

The following table describes each field in a dependency mask:

Field	Explanation
description	Any remarks the administrator chooses to enter. They can contain from 1-80 characters. This field corresponds to the **Descrtion** field on the Dependency Masks Editor.

Field	Explanation
`sourceIP`	The IP address of the source host. It can be a single IP address, a host group name, the keywords SOURCE or DESTINATION, or an asterisk (wildcard). This field corresponds to the **Source IP Addr. or Group** field on the Dependency Masks Editor.
`destinationIP`	The IP address of the destination host. It can be a single IP address, a host group name, the keywords SOURCE or DESTINATION, or an asterisk (wildcard). This field corresponds to the **Destination IP Addr. or Group** field on the Dependency Masks Editor.
`service`	The protocol, destination port and source port. It can be an asterisk (wildcard), a choice from the drop-down menu, or a Service Group name. This field corresponds to the **Service or Group** field on the Dependency Masks Editor.
`direction`	The direction of packet flow relative to the Brick zone ruleset.
`act`	Determines whether the dependency mask applies to passed sessions, dropped sessions, or any sessions. This field corresponds to the **Action** box on the Dependency Masks Editor.
`alarmCode`	A code associated with an alarm. The dependency mask will only apply to sessions authorized by rules with this alarm code. It can be a number or a blank. It is strongly recommended that a numeric value be used instead of a blank in this field to minimize performance degradation with use of this feature. This field corresponds to the**Alarm Code** field on the Dependency Masks Editor.
`hitCount`	Specifies the minimum number of occurrences that must be found in the session cache for a match to take place. It can be a number from 1-65535. This field corresponds to the **Hit Count** field on the Dependency Masks Editor.

Example

The following is an example of a typical dependency masks file:

```
*** DEPENDENCY MASKS ***
description=dep mask for sales
sourceIP=SOURCE
destinationIP=DESTINATION
service=tcp
direction=
act=drop
alarmCode=
hitCount=1
```

4 SMS CLI Error Codes

Overview

Purpose

This chapter explains the error codes that are returned when an SMS command is unsuccessfully executed.

Successful Execution

If a command is executed successfully, an exit code of zero is returned, and the following message is displayed (i.e., sent to `stdout`).

<command_name>:OK

where *<command_name>* is the name of the command that was executed successfully.

Unsuccessful Execution

If an error occurs in the execution of a command, an exit code of one (1) is returned, and the following message is displayed (in other words, sent to `stdout`):

<command_name>:*<error_code>*:*<error_message>*

where

The command syntax is as follows:

- *<command_name>* is the name of the command that was executed unsuccessfully.
- *<error_code>* is the code that identifies the error.
- *<error_message>* is a brief explanation of the error.

Examples

In the following example, an administrator has logged onto the system, and issued a `gotogroup` command for group ″abc,″ which does not exist. A `gotogroup` command is then issued for group ″group1,″ which does exist, and is successful.

```
$ lsmscmd gotogroup abc
GOTOGROUP:[B6000]Group 'abc' does not exist
$ lsmscmd gotogroup group1
GOTOGROUP:OK
$lsmscmd logout
LOGOUT:OK
```

Contents

Codes

Error code table

The table below shows each error code, the message associated with it, and a brief explanation. The acronym **CLI** stands for ″command line interface.″

Error Code	Error Message	Explanation
M1002	Another login with the given adminID is in progress. Please trylogging in later.	Another administrator with the same Admin ID is in the process of logging in.
M2000	Unable to retrieve current domain.	Indicates that the CLI client is not able to connect to the CLI server.
M2001	Parameters received from servlet could not be parsed properly.	Parameters received from servlet could not be parsed properly. Occurs at the time of logging in.
M2002	Error while reading from the client.	Protocol error in data from the CLI client.
M3000	Socket connection with the client broke while receiving data.	Socket connection between the CLI server and the client broke while the CLI server was receiving data.
M3001	Connection to SMS server failed; contact the SMS system administrator to check the configuration file or the SMS services.	Indicates that the CLI server may not be listening on the right port for connections from the CLI client.
M4000	The supplied destination directory does not have a directory named ’%1’ and unable to create the same.	%1 indicates the name of a directory.
M4001	The current user does not have write permissions for the supplied destination directory,%1.	The SMS writes to files in the destination directory. If the user does not have write permissions to the destination directory that has been supplied, this error message results.

Error Code	Error Message	Explanation
M4002	File%1 does not exist in the specified path.	For certain commands, (Example: save policy), the SMS reads from certain files in the destination directory as detailed in this document. If the file(s) does not exist, this error results.
M4003	The supplied destination directory%1 does not exist and unable to create the same.	Create the given destination directory, and try to issue the SMS command again. This error normally occurs during lsmslogon, and may occur if a destination-directory name is provided with one of the SMS commands.
N1000	Administrator does not have permission for operation.	The administrator does not have the privilege to issue the command.
N2200	No leaf called %1 in table %2.	No leaf with the filename %1 could be found. %2 is the path to file %1.
M7000	The following data/format problems exist.\n %1	%1 gives the details of the data/format errors in the CLI file.
M7001	A session with supplied uid, %1, is currently active.	This error message is given at the time of logon. Unlike the GUI, if a session with a given userID is active through the command-line, then a second logon attempt through the command-line is blocked.
M7002	Connection with the SMS services could not be established. Please Check if the SMS services are running and retry after starting them.	Please check if the SMS services are running and retry after starting them.
M7004	Unidentified protocol message sent by the client.	Protocol message used to communicate with the command-line server is in improper format. (The user should not be seeing this error if the commands lsmslogon or lsmslogon are being used)

Error Code	Error Message	Explanation
M7005	A session with the supplied session ID is not active.	Each active session is identified by a sessionID. The administrator should first log in, and then try to issue the SMS commands.
M7006	Incorrect usage — refer to documentation.	Usage of lsmscmd or lsmslogon is imcorrect. Refer to Chapter 2, “SMS CLI Commands”
	Invalid command — refer to documentation.	The issued command was not recognized as part of the SMS command set. Check for misspellings or other incorrect entries. Refer to Chapter 2, “SMS CLI Commands”
	Incomplete command — refer to documentation.	This message is returned when the user types ″lsmscmd″ with no command following. Refer to Chapter 2, “SMS CLI Commands”

5 Audit Trail Archive Files

Overview

Purpose

For Sarbanes-Oxley (SOX) audit compliance, the SMS provides detailed auditing of configuration changes. Any time that an administrator adds, deletes, or modifies an object, the event is recorded in the Audit Trail log and a copy of the object is saved in an archive file for the number of days specified in the Configuration Assistant Audit Trail options. Archive files can be compared to see what has changed from one version to the next. For objects that have an SMS Command Line Interface (CLI), the contents of these archive files can be used to restore a previous version of the object.

This can be a helpful function if you only need to recover one or two entities to the SMS database. While you can always perform an SMS ″restore″, the drawback is that you must restore the entire database.

To verify whether you have ″Detailed Policy Auditing″ enabled, check the setting in the SMS Configuration Assistant. For assistance with the Configuration Assistant, please refer to the *Using the Configuration Assistant* chapter in the *SMS Administration Guide*.

Contents

Creation of Archived Entities

Overview

A directory called *archive* is automatically created in the *root* directory of your SMS installation (default choices are *c:\isms\lmf* for *Microsoft® Windows®* and *Microsoft®Vista®* or */opt/isms* for *Solaris®* or Linux).

Whenever an object is added, modified, or deleted via the Navigator or SMS CLI, a copy of the object's new configuration is written in the archive directory. When an object is modified, a copy of the object's configuration before the modification is also written if it does not already exist.

Archive files are stored in a hierarchical directory structure based on object type. Objects that belong to an administrator are stored under a directory with that administrator's login ID. Under that directory are changes to the administrator's configuration and directories for object types such as alarms and reports. Objects that belong to a group are stored under a directory with that group's name. Under that directory are changes to the group's configuration and directories for object types such as Bricks, policy components, tunnels, and user authentication components. Archive files for changes to SMS and Compute Servers are stored in a directory called *SMS*.

When the archive copy is saved, it is given a unique file name in the following format:

< name>_<date>_<time>.txt

The fields in the file name are:

- Name - object name
- Date - date that the object was modified (YYYYMMDD)
- Time - time that the object was modified (HHMMSS)

Each archive file contains a comment header that identifies the following:

- Object Type
- Object Name
- Group Name (if any)
- Administrator that modified the Object
- Date/Time that the object was modified

The remainder of the file contains name/value pairs that describe the object configuration. For objects that have an SMS Command Line Interface (CLI), the file format is compatible with those commands so that the file can be used to restore a previous version of the object. To restore an object, use the procedure described in the section "To Recover an Archived Entity's Configuration" (p. 5-4).

Archived configuration of removed entities

When an entity (such as a Brick, zone ruleset, host group, or service group.) is deleted from the SMS, a copy of the entity's configuration before it was deleted is saved in a text file in the appropriate sub-folder under the archive directory, as described in the "Overview" (p. 5-2) section.

□

To Recover an Archived Entity's Configuration

Task

Complete the following steps to recover the archived configuration of an entity:

1 *Locate the desired file* and verify its contents. Go to the ″archive″ directory, and proceed to the proper sub-folder and identify the file that you wish to restore. You may edit the file as needed.

2 *Run the ″validateHash″ tool* to ensure that the file has not been altered since it was saved.

When the archive file is created, it is saved with a hash value. Execute this utility if you need to verify that the file contents are unchanged since the file was saved.

In order to run the tool, you must be in the SMS Installation directory. The command format is:

`local/bin/validateHash <archive file name> <hash value>`

Run an Audit Trail report covering the time that the object was modified. Copy and paste the archive file name and archive file hash value from the report to the `validateHash` command and execute the command to verify the file contents.

3 *Copy the item to the admin's login directory* for SMS Command Line Interface (CLI) functions and rename it. When an admin logs into the SMS CLI, you'll recall from Chapter 2 that the format of the command is:

`lsmslogon <admin ID> <destination_directory> [-p <password file> or -f password]`

Rename the archive file to the "entity name", stripping off the date, time, and .txt suffix.

4 *Save the archived entity* to the SMS database with the appropriate SMS CLI command. Remember, if you have restored a Brick or a Brick zone ruleset, you may also need to ″apply″ the entity in order to activate the change on the Brick.

END OF STEPS

□

6 Database Utilities

Overview

Purpose

There are a number of simple database utilities that can be found under the SMS installation directory (`\users\isms\lmf` on *Windows*®, `\isms\lmf` on *Vista*™, or `/opt/isms/lmf` on *Solaris*®) in the local/bin folder. Some of the tools are present for support personnel, while others may be run by administrators.

All of the commands must be executed from the command line or a terminal window while in the SMS installation directory. For instance, if a *Windows*® administrator wanted to run `dbsetup`, he would open a DOS window, ″cd″ to \users\isms\lmf and enter:

local\bin\dbsetup

In this chapter, only administrator commands will be described. `Do not attempt` to run any of the other utilities.

Contents

allowSecondarySetup

Description

In a redundant SMS configuration, the Primary SMS must always be installed first. When the secondary SMS is initially installed, a default certificate is used to encrypt communication between the databases. At the conclusion of the secondary installation, a random certificate is generated for subsequent communication between the databases.

In the event that the database must be restored on the secondary SMS (copied from the primary SMS), the certificate on the secondary is temporarily reset to the default. In order for the secondary to copy the database from the primary, the `allowSecondarySetup` command must be run on the primary. At the conclusion of the secondary restore, a new random certificate is created.

□

backup

Description

This utility is used for database backup. For more information, please review the *SMS Administration Guide.*

□

changeInactiveBrickVersion

Description

This utility is used to change the Alcatel-Lucent *VPN Firewall Brick*™ Security Appliance software version internally in the SMS database for staged Bricks that have not yet been activated. This utility must be run for each inactive Brick after a software upgrade to R8.0 or R9.0 in order to be able to manually enable the IKE on the Brick feature.

local/bin/changeInactiveBrickVersion brickName

□

changeIP

Description

This utility is used to change the IP address of the SMS in the database after installation. For more information, please review the *Changing the IP Address of the SMS* section in the *SMS Administration Guide.*

changeName

Description

This tool allows an adminsitrator to change the name of the SMS in the database after installation.

- Stop SMS Services
- From the SMS installation directory, run :
  local/bin/changeName <new SMS name>
- Start SMS Services

□

cleanse

Description

This tool compacts the existing database and reduces the disk space utilization by the database. It should be used only if the database grows to a large size and there is an inexplicable slowdown or performance problems in the SMS.

Important! Contact Alcatel-Lucent Customer Technical Support to run this tool if you think it is necessary to do so. Do not attempt to run this tool by yourself without contacting the Customer Technical Support team first.

□

dbsetup

Description

When run on a Primary SMS server, the *dbsetup* command can be used to reinstall a clean (empty) database or to set up the database after a restore of a designated backup database is completed.

When run on a Secondary SMS server, the *dbsetup* command manually synchronizes its database by making an exact copy of the Primary SMS database. This must be done after performing a database restore on the Primary SMS , or if the Primary and Secondary SMS(s) have not been communicating for more than a week.

The *dbsetup* command has a Database Verification feature which checks database integrity on a Primary SMS server. The Database Verification feature compares the database before and after an upgrade and lists the changes made during an upgrade pointing to potential database corruption issues. It takes a snapshot of the database before the upgrade process begins and checks for corruption as well as makes note of all changes made during upgrade. If an upgrade leaves the database in an inconsistent state, this feature will flag all inconsistencies. A list of all changes made during the upgrade is also provided.

The *dbsetup* command must be executed in the following database installation/restore scenarios:

- On a Primary SMS server that is running R8.0.275 or earlier, the *dbsetup* command is run on the Primary SMS server after a restore of the backup database is completed
- A clean (empty) version of the database is installed on an SMS server without re-installing the SMS
- A manual resynchronization of the Secondary SMSdatabase after performing a database restore on the Primary SMSserver or if the Primary and Secondary SMS servers have not been communicating for more than a week

In cases where the Primary SMS database has been restored from backup, or a clean (empty) version of the database is installed, *dbsetup* must be run on the Secondary SMS(s) to resynchronize their database(s) with the Primary SMS database.

To set up the database on a Primary SMS after a restoring the database from a backup:

1. Stop the SMS services.
2. Use the *restore* utility to revert to a designated backup database (see the *restore* command description below) or recreate the objects in the SMS database (Bricks, rulesets, and so forth) manually.
   If the Primary SMS server is running R8.0.275 or earlier, go to Step 3. If the Primary SMS server is running a release later than R8.0.275, *dbsetup* is run automatically when the restore utility is invoked. In this case, skip Step 3.

3. From the SMS installation directory, run: `/local/bin/dbsetup`
4. Start the SMS services.

To install a “clean” (empty) version of the database on an SMS server, do the following:

1. Stop the SMS Services.
2. Remove the <*installdir*>/db/LSMS folder.
3. From the SMS installation directory, run: `local/bin/dbsetup`
4. Start the SMS Services.

To manually resynchronize the database on the Secondary SMS after performing a database restore on the Primary SMS or if the Primary and Secondary SMS(s) have not been communicating for more than a week, do the following:

1. On the Primary SMS, run the *allowSecondarySetup* utility.
2. On the Secondary SMS, stop the SMS Services.
3. On the Secondary SMS, from the SMS installation directory, run: `local/bin/dbsetup`
4. On the Secondary SMS, start the SMS Services.

□

restore

Description

This utility is used for database restore. For more information, please review the *Backing Up and Restoring Data* chapter in the *SMS Administration Guide*.

□

validateHash

Description

With the ″Detailed Policy Auditing″ checkbox enabled in the Configuration Assistant, a record is kept of all changes to Bricks, Brick zone rulesets, host groups, service groups, application filters and dependency masks. These files are preserved in the ″archive″ folder under the SMS installation directory. Each file is saved with a randomly generated hash value. If necessary, the files can be restored with the appropriate SMS (command line interface) commands.

This tool may be run prior to restoring a file with an SMS ″CLI″ command to verify that its contents have not been altered.

local/bin/validateHash `<archive file name> <hash value>`

To obtain the hash value, first check the date time stamp on the archive file name. In the Event Log, under the ″History″ tab, bring up the time that the object was modified and highlight the hash value. The value may then be pasted on the command line with the rest of the validateHash command.

□

7 SMS Service Status

Overview

Purpose

Another tool that is available for SMS Administrators is ″SMS Service Status″. This utility presents a graphical representation of the resource usage of all eight individual SMS processes as well as a summary total of all the processes.

This tool can be used to monitor CPU and memory usage. The ″Maximum Heap″ column corresponds to the value set in the SMS Configuration Assistant under the option ″Tunable Parameters″. Depending on the ″Used Heap″ value as observed over the long term, you may elect to increase or decrease the Max Heap value in the Configuration Assistant.

While the utility does not have the ability to present a ″historical″ view of past resource usage, you may elect to keep the SMS Service Status window up for an extended period and use the tool to observe patterns of resource usage.

For more information on the SMS Configuration Assistant, please refer to the *Using the Configuration Assistant* chapter in the *SMS Administration Guide.*

Contents

Displaying SMS Service Status

Overview

There are two different means to display the SMS Service Status.

1. *From the local SMS* — On a *Windows*®or *Vista*™ platform, proceed to **Start** → **Programs** → **Alcatel-Lucent Security Management Server** → **Utilities** and select **SMS Status**.
   If you are on a local *Solaris*® SMS, proceed to the SMSinstallation directory (default location is */opt/isms/lmf*) and enter:
   ./StartLSMS Status
   Or, from the *Solaris*® menu, navigate to **Alcatel-Lucent Security Mangement Server** → **Utilities** and choose **SMS Status**.
2. *From the SMS Navigator or the SMS Remote Navigator* — Proceed to the Utilities menu, select **System Utilities,** and then select **SMS Service Status**.

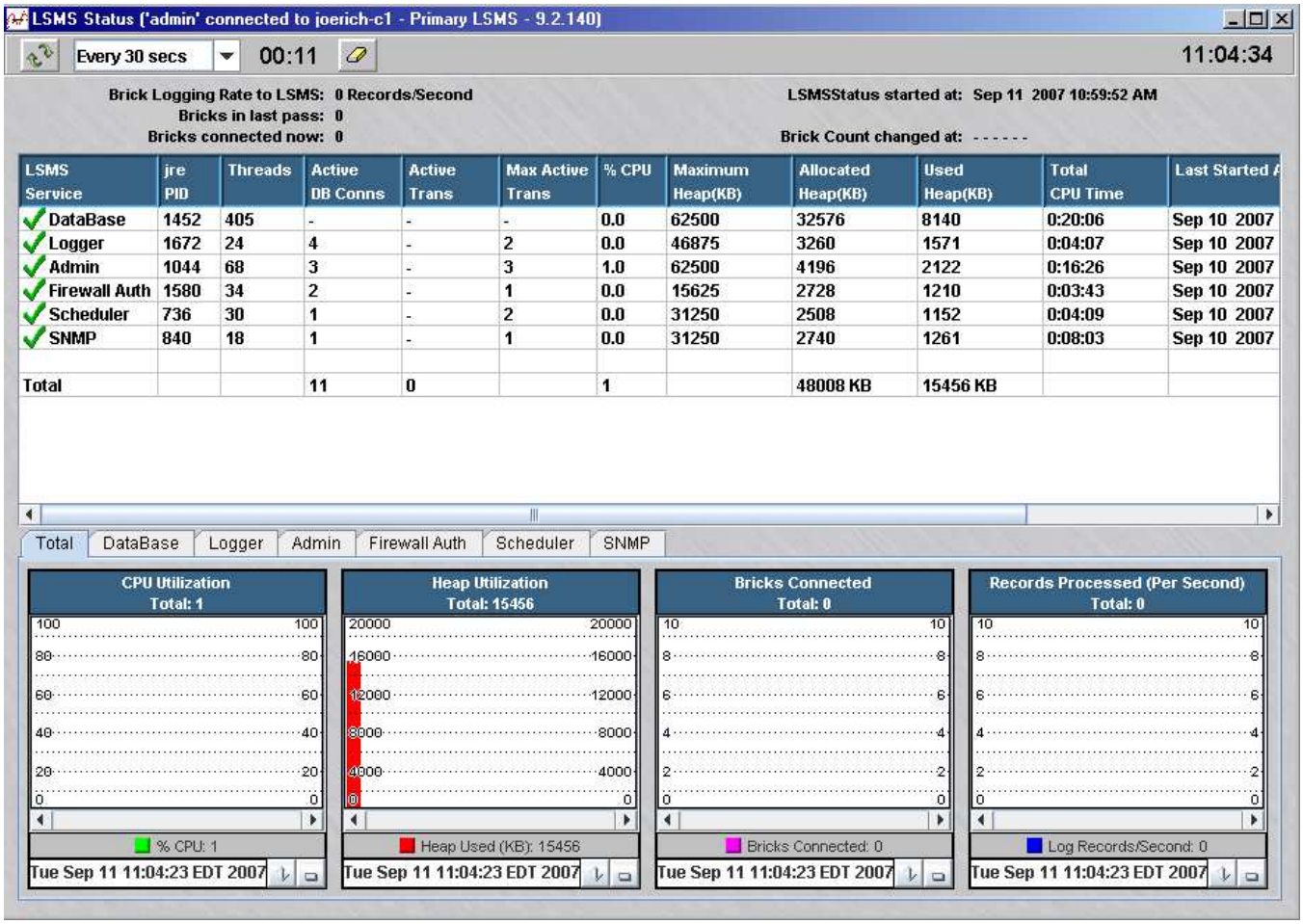
□

Summary View

Service status view

There are two slightly different presentations available from the SMS Service Status. When first displayed, the user is shown is the summary view as listed in Figure 7-1, “SMS Service Status — Total” (p. 7-3):

Figure 7-1 SMS Service Status — Total



In either presentation, the top half of the screen is always the same. Each SMS service is listed along with its relevant statistics. By default, the display is updated every 30 seconds, but the refresh interval can be modified via the pull-down in the upper left corner of the display.

When the ″Total″ tab is chosen in the lower half of the display, the following statistics are shown graphically:

- CPU Utilization — The total amount of CPU taken by all the SMS services.
- Heap Utilization — The total memory heap used by all of the SMS services.
- Bricks Connected — The total numbers of Alcatel-Lucent *VPN Firewall Brick*™ Security Appliances connected to the SMS.
- Records Processed per second — The average number of log records processed per second by all the Bricks.

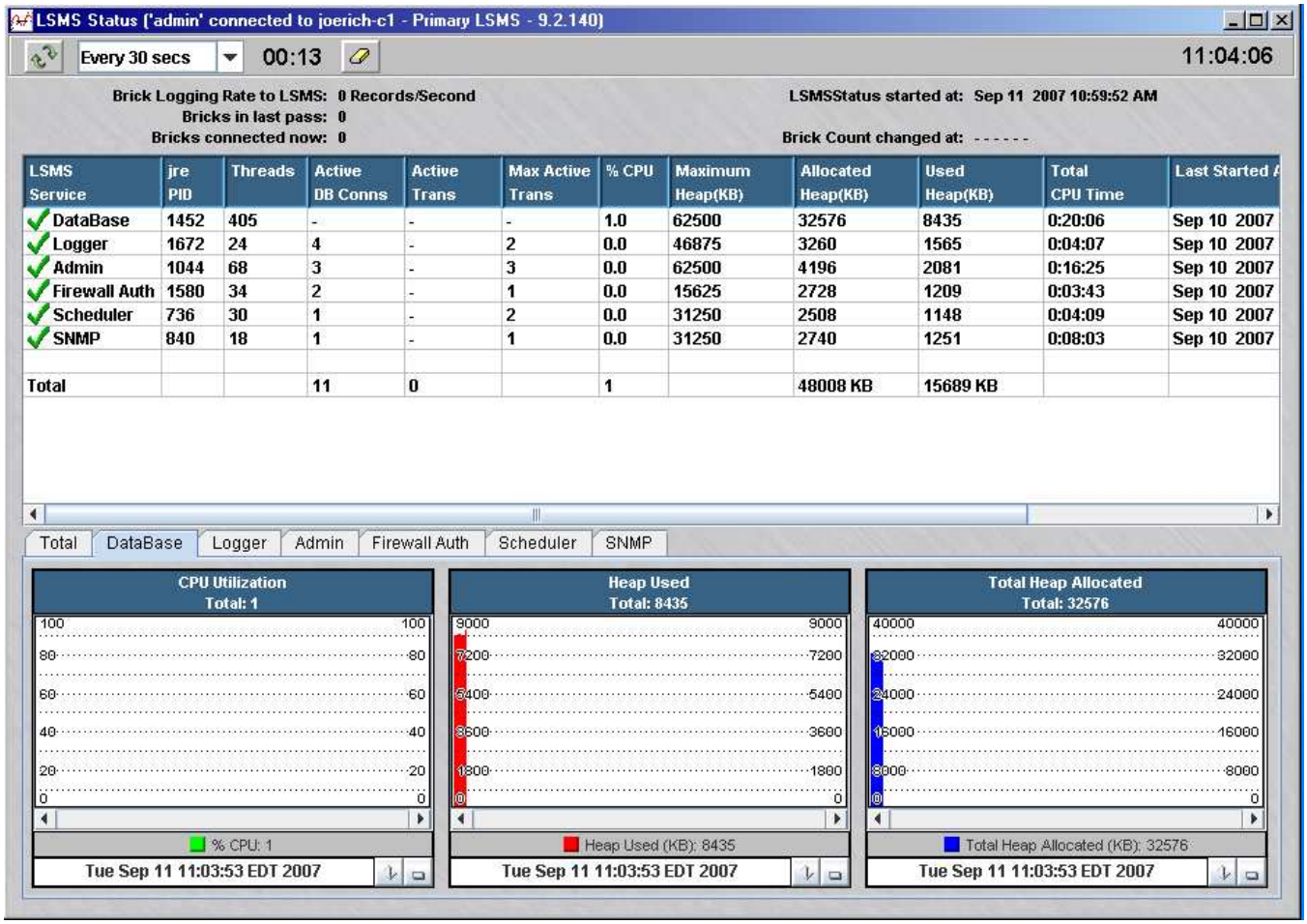
□

Individual Service View

Individual service statistics

At any time, the administrator can opt to select any other tab for any of the individual SMS services. As mentioned above, the top half of the screen always lists the statistics for each service. However, as you can see below, the graphs presented in the lower half of the display are slightly different than the summary view, as shown in Figure 7-2, “SMS Status — Single” (p. 7-5).

Figure 7-2 SMS Status — Single



For each individual SMS service, graphs are shown for CPU Utilization, Heap Used and Total Heap Allocated.

□

8 Troubleshooting Resources

Overview

Purpose

This chapter is intended to acquaint the user with the tools that are available for troubleshooting problems with the SMS and the Alcatel-Lucent *VPN Firewall Brick*™ Security Appliance.

The following areas will be discussed:

- Online help and documentation
- Log Files and reports
- Brick problems
- VPN tunnel problems

Contents

Online Help and Documentation

Overview

Once you have logged into the SMS Navigator or SMS Remote Navigator, there is a ″Help″ menu selection available on nearly every screen. In that list, you can choose to view:

- Product Manuals - All of the manuals are available in Acrobat's ″pdf″ format. Free Acrobat Reader software can be obtained at www.adobe.com
- Contents - A listing of all help topics on the system, including an ″Index″ and ″Search″ mechanism similar to those found in Windows help.
- Error Codes - A list of all Brick and SMS error codes that are reported in the Event Log in the SMS Logviewer or the Administrative Events Report, along with explanations and / or suggested recovery actions.

□

Log Files and Reports

SMS LogViewer

One of the keys in quickly diagnosing any problem is to review the data from the Bricks that is being recorded in the log files on the SMS.

The user may examine the system events from the SMS LogViewer or by running a report. The LogViewer can be run locally on the SMS or from the GUI on an SMS Remote Navigator. The user can run the LogViewer locally or remotely in ″real time″ mode while an admin logged into the local SMS standalone host can also review earlier ″historical″ system events.

On a *Windows*® or *Vista*™ SMS, go to **Start > Programs > Alcatel-Lucent Security Management Server > Utilities > Logs**. When the LogViewer window is shown, log in with your SMS administrator or group administrator ID and password, and choose the desired log.

On a *Solaris*® SMS, you can bring up the LogViewer from the *Solaris*® menu. Go to **Alcatel-Lucent Security Management Server > Utilities > LogViewer**. When the LogViewer window is shown, log in with your SMS administrator or group administrator ID and password, and choose the desired log.

If you are logged in via the SMS Navigator or the SMS Remote Navigator, go to the ″Utilities″ menu bar, select System Utilities, and then SMS LogViewer. Click on the preferred log.

You may view the following SMS logs:

- *Event Log* - This log records a number of error conditions as well as routine administrative events and VPN tunnel transactions. This is a vital tool for configuration and maintenance issues with Bricks and VPN tunnels.
- *Session Log* - This log contains Brick session records, which record network activity through each of the device interfaces as well as whether a packet was ″passed″ through a Brick or ″dropped″. This is also a very important tool to track the path of a packet if your Brick is not communicating with the SMS, a VPN tunnel will not come up, or similar situation.
- *User Authentication Log* - This log records all user login attempts. (Administrator logins are recorded in the Event Log).
- *Proactive Monitoring Log* - This log records statistical information about the SMSs and the Bricks that it is managing.
- *VPN Logs* - These logs contains events and alarms logged about VPN tunnels.

The user may also configure filters and / or use the ″Find″ option on the LogViewer to more closely monitor specific events. For more information on the logs, please review the *SMS Reports, Alarms and Logs Guide*, which is available under ″Help″ on the SMS Navigator.

Reports

Once logged into the SMS Navigator or the SMS Remote Navigator, the user can run a number of different reports. The reports are displayed in a browser. While real-time events may only be observed on the SMS LogViewer, historical data can be reviewed from the LogViewer or from a report. Filters can also be used to make the reports as concise as possible.

There are five different reports that can be run. For more information on reports, please review the *Reports, Logs and Alarms Guide,* which is available under ″Help″ on the SMS Navigator.

□

Brick Problems

Troubleshooting a Brick

The Brick is an extremely flexible device. It may be configured to act as a bridge or as a router and perform as a pure firewall or as a VPN tunnel endpoint. You may wish to review the *SMSTechnical Overview* document or the *SMS Administration Guide* for more information on Brick functionality.

In today's complex internetworking environments, it is always helpful to have a detailed picture of your network topology available when troubleshooting. The Brick may appear to be having a problem, when the actual cause may be due to a failure or misconfiguration of another network element.

The Status Monitor on the SMS provides a variety of information about all of your Bricks, as well as detailed information on each single brick. For example, you can see if the Brick is ″UP″ (communicating with the SMS), to which SMS the Brick is homed, packet throughput, or other data. The Status Monitor may be accessed from menu bar on the SMS Navigator, or you may log into it directly. For more information, refer to the *Using the Status Monitor* chapter in the *SMS Administration Guide*.

While the logs on the SMS can provide useful messages for troubleshooting Brick problems, it is often critical to observe what is happening on the device itself. In order to monitor Brick activity first hand, a console connection must be set up to the Brick. There are a variety of means available to establish a console connection as outlined in Chapter 9, "Introduction to the Alcatel-Lucent *VPN Firewall Brick*™ CLI" in this Guide.

Once a console connection is established to the Brick, the user may enter any of the Brick commands as described in the Brick Command Line Interface portion of this guide. Of particular interest when troubleshooting the Brick is the ″trace packet″ commands. This family of commands can be used to monitor some or all session activity through a specific port. For more information on the use of trace commands, please refer to Chapter 12, "Alcatel-Lucent *VPN Firewall Brick*™ Security Appliance Trace Commands" in this Guide.

Finally, the admin may also execute from the Brick console ″ping″ and ″traceroute″ commands to and from Bricks or hosts of interest. Please consult the *Maintaining an Alcatel-Lucent VPN Firewall Brick® Security Appliance Configuration* chapter in the *SMS Administration Guide* for more information on the use of `ping` and `traceroute` in Brick troubleshooting.

□

VPN Tunnel Problems

Troubleshooting tunnel problems

When troubleshooting LAN-LAN or Alcatel-Lucent IPSec Client - LAN tunnel problems, it is important to gather as many clues as possible from both the SMS and the Bricks. The most common cause of VPN tunnel failure is a misconfiguration on the SMS or a routing problem between the tunnel endpoints on the Bricks. In rare cases, it may be necessary to reboot the Brick(s) or restart the SMS services.

In order to eliminate routing or connectivity issues in your configuration, you may want to try a simple case first. Create and add a basic ruleset to each Brick to allow, say, ″pings″ to pass through to hosts behind each Brick. If that test is successful, you have confirmed that the problem must be strictly VPN related.

On the SMS, here are some of the items that the administrator can review:

- Rule Configuration - When configuring a Brick, a user must define a Virtual brick Address (VBA) in the Policy Assignment tab for a Brick zone ruleset to be incorporated as part of a tunnel. In addition, you must have at least one rule in the Brick zone ruleset where the ″Action″ field is set to ″VPN″.
- Tunnel Status - For a LAN-LAN tunnel, proceed to the LAN-LAN Tunnel Viewer in the VPN folder within the group where your tunnel is configured. Check that the value of the ″Enabled″ column is ″Yes″; if not, open the LAN-LAN Tunnel Editor and check off the ″Enable Tunnel″ box on the Main tab. Also verify that the ″Status″ of the tunnel is ″Up″.
  For a client tunnel, the admin can confirm whether a given user’s IPSec tunnel is up by checking under VPN > Client Tunnel Endpoints. Highlight the tunnel in question and right click and choose the ″Show Tunnels″ option.
- Event Log - As indicated earlier in this chapter, the Event Log portion of the SMS LogViewer can provide a number of helpful details on VPN tunnel issues. However, by default the system only records a subset of the potential VPN messages in the Event Log. To gather the greatest breadth of detail on VPN messages, you must proceed to the SMS Configuration Assistant. Under the ″VPN Debugging″ parameter, set the audit level to ″3″.
  After resolving your VPN issue, you may wish to reset to audit level to ″0″ or ″1″ to preserve system resources.
  For more information on the SMS Configuration Assistant, please refer to the *Using the Configuration Assistant* chapter in the *SMS Administration Guide*.

On the Brick console, you may wish to review:

- display policy <zone> - Verify that all of the rules (and changes) have been downloaded to the Brick. You may need to ″save & apply″ the ruleset from the SMS.
- displays sa <zone> - Check that there are active security associations (SAs) for your tunnel. If there are no SAs, there may be a tunnel, Brick, or zone ruleset misconfiguration on the SMS, or the Brick was not able to receive its SAs from the SMS for some reason.
- display hostgroups <zone> - Verify that the desired hostgroup is present and that it lists all of the hosts configured for this group on the SMS. If not, you may wish to apply the Brick or the LAN-LAN tunnel.
- trace commands - You can run ″trace packet″ commands to observe the packet activity directly on the Brick.

Please reviews Chapters 9 and 10 elsewhere in this guide for more information on helpful commands to use in the Brick console.

□

9 Introduction to the Alcatel-Lucent *VPN Firewall Brick*™ CLI

Overview

Purpose

The Brick command line interface (CLI) provides a way to issue commands directly to a Brick for query purposes or for troubleshooting. Some methods of establishing a connection to the Brick console are always available, while others can only be established if the Brick and the SMS are communicating.

There are a total of five ways to create a connection to the Brick console. Two of the methods may only be used if the Brick and the SMS are communicating (in other words, the Brick is ″UP″ in the Status Monitor), while the remaining techniques do not depend on whether the Brick connection to the SMS is up.

Each method provides similar functionality on the Brick; the administrator can simply select the most convenient choice for the circumstances, as follows:

1. Remote Console Connection from the Navigator — From the SMS Navigator or the SMS Remote Navigator, an SMS administrator (or Group Administrator with ″Full″ device privileges) can highlight a Brick, right click the mouse, and choose the ″Open Brick Console″ option. A separate console window is opened and described in further detail on the next page.
2. Remote Console Connection from the Command Line — From the local SMS host only, an SMS administrator (only) opens a terminal window or a DOS window. After navigating to the SMS installation directory, the user runs `brickcon` (*Windows*®or *Vista*®) or `brickcon.sh` (*Solaris*®) and completes the login sequence as described in the sections “Remote Console Connection via the Navigator” (p. 9-3) and “Remote Console Connection from *Solaris*®” (p. 9-8). The commands are entered and executed within the window that you used to run `brickcon`. There are three other methods available to connect to the Brick console. If you use any of these alternatives, it does not matter if the SMS and Brick are communicating.

3. Local Connection - Anyone with physical access to the Brick can connect a monitor and keyboard to the appropriate ports on the back of the Brick. As soon as the Brick and the monitor are both powered up, the Brick console is displayed and commands may be entered. No password is required, unless it is enabled on the Brick configuration.
4. Remote Dial-in Connection - Connect an external modem to the serial port on a Brick and dial into the Brick from a remote computer equipped with a modem and a terminal emulation program such as HyperTerminal. After establishing a connection to the modem through Hyperterm, you must login to the Brick with the Serial Port Access password (defined on the ″Options″ tab of the Brick) to create a connection to the Brick console.
5. Local Serial Port Connection - Connect a computer equipped with a terminal emulation program such as HyperTerminal to the serial port on the Brick. Similar to the remote dial-in connection, once you connect to the port through Hyperterm, you must login to the brick with the Serial Port Access password (defined on the ″Options″ tab of the Brick) to create a connection to the Brick console.
   The first three methods are described in this chapter. For an explanation of the remote dial-in connection and local serial port connection, refer to Appendix A, “Set up a Remote Dial-In Connection” and Appendix B, “Set up a Direct Serial Port Connection”, respectively.

Contents

Remote Console Connection via the Navigator

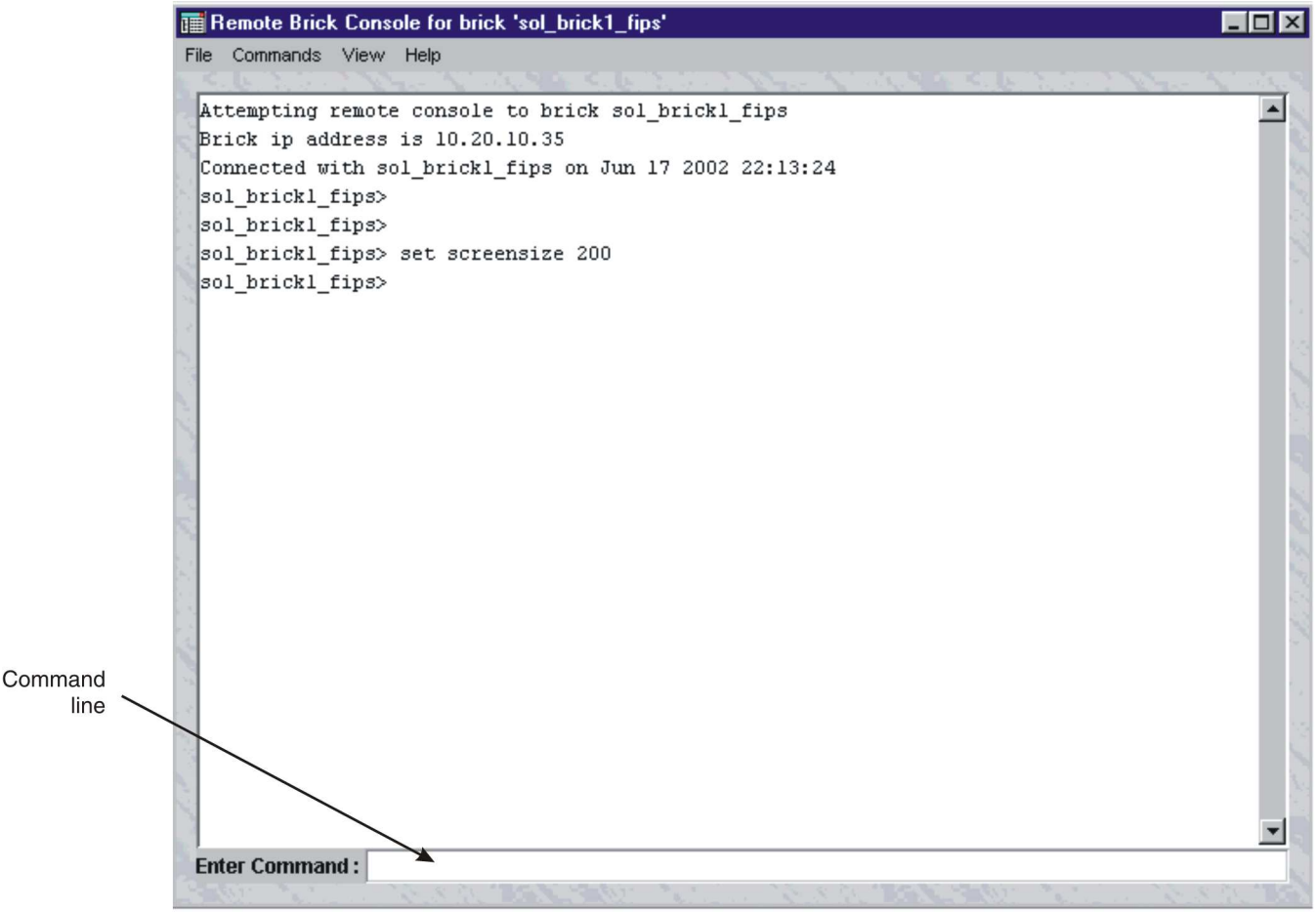
Task

To open a console window on a Brick from the SMS interface, follow the steps below:

1 With the Navigator window displayed, click the appropriate **Bricks** folder to display the Bricks in the folder.

2 Right-click the Brick you want and select **Open Brick Console** from the pop-up menu. The Brick Console window will appear. It is shown in .

Figure 9-1 Brick Console Window



3 To execute a command, you can do either of the following:

- Enter the command in the command line at the bottom of the window
- Select the command by clicking **Commands** in the menu bar at the top of the window, and selecting the command from the Command menu. (If you do not see the command you are looking for, note that several of the options in the Commands menu contain submenus.)

END OF STEPS

□

Remote Console Connection from the Command Line

Overview

The remote console connection from the command line feature allows SMS Administrators (only) to create a Brick console connection from the local SMS host.

Note that the SMS must be able to communicate with the Brick to which you are attempting to open a Remote Console session. If the link between the Brick and the SMS is down, you will need to use a direct connection, a local serial port connection, or a dial-up connection to access the Brick CLI.

Only SMS Administrators may use the Remote Console feature. Group Administrators do not have permission to access this feature.

Only *one* instance of the remote console application may connect to a Brick at a time. However, you can run multiple instances of the remote console simultaneously from the SMS host to different Bricks. Also, multiple SMS Administrators can be logged in, each in their own remote console session.

If another SMS Administrator attempts to connect to a Brick that is already supporting a remote console session, the new remote console session overrides the existing session, and the existing session is immediately disconnected from the Brick.

The first remote console user is informed that they were disconnected due to a new remote console session to that same Brick. The first user will also be informed of the SMS Admin ID of the new remote console session that caused them to be disconnected. The new remote console session will also report to the second user the fact that their session just overrode an existing remote console session, and the SMS Admin ID of the first remote console session.

A remote console session on a particular SMS can only connect to Bricks managed by that SMS. The remote console cannot connect to Bricks managed by another SMS.

The connection from the SMS to a Brick uses a TCP connection on a TCP destination port already in use from the SMS to the Brick. This port is preconfigured in the ″SMS to Brick Services″ service group.

If there are one or more Bricks between the SMS and the Brick to which the user intends to connect, appropriate rules must exist in all intervening Brick zone rulesets on those bricks such that the TCP connection may pass through these Bricks to get to the intended Brick.

When a remote console session is connected to a Brick, all keyboard input, commands executed, and responses generated at any one of the three console interfaces (serial/dial-in, local, or remote) will be echoed to all other interfaces.

□

Remote Console Connection from *Windows*® or *Vista*®

Task

1 From the *Windows*® or *Vista*® command line, change the directory to the SMS installation directory (default option is *C:\\users\\isms\\lmf* for *Windows*® or *C:\\isms\\lmf* for *Vista*®).

2 Issue the command `brickcon`

Result The following prompt is displayed:

```
Please enter admin ID:
```

3 Enter your admin ID and press Enter.

Result The following prompt is displayed:

```
Please enter password:
```

4 Enter the password for this administrator ID and press Enter.

Result The remote console will display the prompt

```
The bricks on your system are:
```

followed by a list of Brick names accessible from this SMS.

The following prompt is displayed:

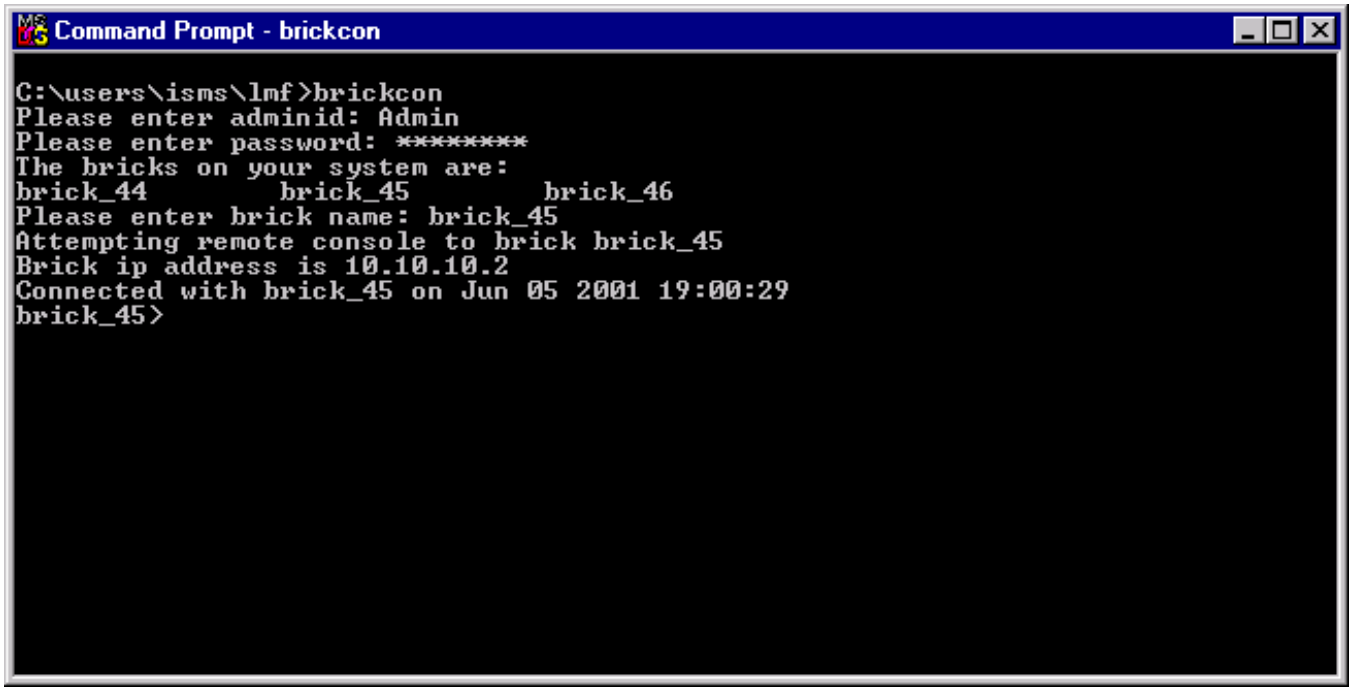
```
Please enter brick name:
```

5 Enter the name of the Brick you want to open a remote console session to and press Enter.

Result The remote console attempts to connect to the Brick you specified.

6 If the connection attempt is successful, the remote console displays the IP address of the Brick and the date and time the connection was established. The command line prompt changes to the name of the Brick to which you are connected. Refer to Figure 9-2, “Windows® Brick Remote Console Session” (p. 9-7) for a sample *Windows*® Brick remote console session.

Figure 9-2 Windows® Brick Remote Console Session



7 If the connection attempt is not successful, the remote console application returns the prompt:

`Unable to find the brick <brickname> in the system.`

You can also issue the `brickcon` command with all, or some, of its arguments on a single line. The complete syntax of the `brickcon` command is:

`brickcon <brickname>`
`<lsms_admin_id>`
`<password> [s=script_pathfile] o=output_patfile]`

Where the optional argument *s=script_pathfile* is the path and file name of a script file the Remote Console will execute, and the optional argument *o=output_patfile* is the path and name of an output file to which the remote console will write its output.

Note that if you issue the entire command in a single line in this manner, you will be typing your password in the clear.

END OF STEPS

□

Remote Console Connection from *Solaris*®

Task

1. From the command line, change the directory to the SMS installation directory (default option is */opt/isms/lmf*).

2. Issue the command `brickcon.sh`

3. You will receive the prompt:

   ```
   Please enter admin ID:
   ```

4. Enter your admin ID and press Enter.

5. You will receive the prompt:

   ```
   Please enter password:
   ```

   Enter the password for this administrator ID and press Enter.

6. The remote console will display the prompt

   ```
   The bricks on your system are:
   ```

   followed by a list of brick names accessible from this SMS.

7. You will receive the prompt:

   ```
   Please enter brick name:
   ```

8. Enter the name of the Brick you want to open a remote console session to and press Enter. The remote console attempts to connect to the specified Brick.

9. If the connection attempt is successful, the remote console displays the IP address of the Brick and the date and time the connection was established. The command line prompt changes to the name of the Brick to which you are connected.

10 If the connection attempt is not successful, the remote console application returns the prompt:

```
Unable to find the brick <brickname> in the system.
```

You can also issue the brickcon command with all, or some, of its arguments on a single line. the complete syntax of the brickcon command is:

```
brickcon <brickname> <lsms_admin_id>
<password> [s=script_pathfile] o=output_patfile]
```

Where the optional argument script_pathfile is the path and file name of a script file the Remote Console will execute, and the optional argument output_pathfile is the path and name of an output file to which the remote console will write its output.

Note that if you issue the entire command in a single line in this fashion, you will be typing your password in the clear.

END OF STEPS

□

To Set up a Local Connection

Introduction

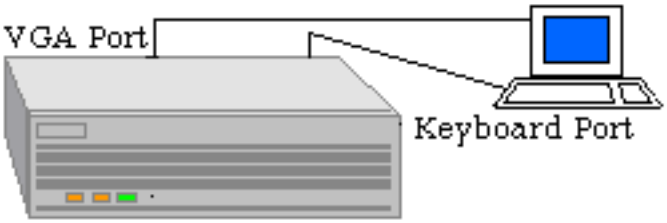
Another way to access the Brick CLI is to set up a local connection. Using a standard monitor cable, connect a monitor and keyboard to the monitor and keyboard ports on the back of a Brick.

A local connection makes it possible to observe the Brick status even if the SMS is lost.

As illustrated in Figure 9-3, “Local Connection” (p. 9-10), a keyboard and monitor are connected directly to the ports on the back of the Brick.

Note that in this configuration, since you have a direct local connection, the `login` and `logout` commands are not applicable.

Figure 9-3 Local Connection



Procedure

To set up a local connection, do the following:

1. Connect the keyboard and monitor to the keyboard and monitor ports on the back of the Brick. The location of these ports depends on the model of the brick. Refer to the *User’s Guide* of the respective Brick model for a description.

2. Turn on the monitor. The Brick prompt appears.

END OF STEPS

□

Command List Introduction

Overview

Once connected and logged in (local connections do not need to login), commands are issued to a Brick to perform tracing or display statistics such as port status, contents of a Brick zone ruleset security policy, and related information.

All commands, Brick zone ruleset names, and identifiers are case-insensitive. The only case-sensitive text is the Remote Password that is created in the Brick Editor.

Command categories

To see a complete listing of all commands online, enter `help` at the command prompt.

Some of the commands can be grouped as follows:

- `display` commands
  These commands provide information that is relevant to the Brick, such as the policy, host group definition, or session cache of a given Brick zone ruleset.
- `set` commands
  These commands manipulate specific settings that control the viewing of the output, such as screen size, baud rate, status of real-time printing.
- `trace audit` and `trace packet` commands
  These commands control how audit records and real-time incoming and outgoing packets are filtered and displayed.
- `clear` commands
  These commands are used to delete one or more sessions in a specified zone.
- `misc` commands
  Other commands provide miscellaneous functions such as rebooting the Brick, disabling brick zone rulesets on the Brick, and refreshing the MAC table.

General Commands

After logging into a Brick, some general commands that can be used are as follows:

<Ctrl> C	Terminates viewing real-time output. Can be used if the display is overwhelmed with too much output.
<Esc> key	Re-enables the viewing of real-time output.
<Tab> key	Use to cycle through a Brick zone ruleset or keyword list.
Spacebar or *<Enter>* key	Use to complete a partially-entered command.

When viewing non real-time output, 23 lines are displayed on the monitor. To view additional output, press any key.

You can override this default by using the `set screensize` command.

□

Brick Console Logging

Overview

The Brick Console Logging feature, which is always enabled, automatically captures all Brick console output, including all system messages and Brick CLI command input/output, and writes it to the flash memory of a Brick device. Then, when a Brick reboot occurs, this console log data is uploaded to the SMS *console_log* directory, so it can be reviewed. This type of Brick output can be particularly useful for troubleshooting and diagnosing problems when a Brick panics or crashes under certain conditions, and simplifies the capture of debugging information from remote Bricks in the field.

All Brick console output is automatically written to the Brick flash memory except for the following:

- All `trace packet` command input/output
- All `trace heartbeats` command input/output
- All `trace audit` command input/output
- All `trace packet PPPoE` command input/output
- All `ttE` and `^t^t` command input/output
- All `internal debug tracing` command input/output
- All console messages written before the Brick has booted
- All messages generated from within the Brick file system code

All Brick console log data written to the flash memory is marked with a timestamp. The size of the console log files are limited by the Brick to ensure that its flash memory is not exceeded. The Brick retains, at minimum, the last 10K bytes of console message data.

Console log data uploaded to SMS

After a normal Brick reboot, the SMS creates a new *console_log* directory, and the Brick uploads the most recently logged console data from its flash memory to the SMS directory *<LMFROOT>/firewalls/<Brickname>/console_log/C<timestamp>.txt*, where *C<timestamp>.txt* is a timestamped file of the most recently logged Brick console message data. The SMS stores up to 20 timestamped console log data files under the *console_log* directory.

Console output logged during Brick panics, power failures

If a Brick panics, it uploads the most recently logged console output captured in its *panic* file to a timestamped file under the SMS *panic* directory. Up to 10 timestamped *panic* files can be stored on the SMS.

In the event that the Brick generates a stack dump that does not result in a reboot, the most recently logged Brick console output is uploaded to the SMS.

After a reboot, following a Brick panic or normal operation, the Brick does not erase the existing console log data on the flash, but marks the reboot and resumes logging the Brick console output.

If some unforeseen event occurs, such as an abnormal reboot or loss of power, the Brick ensures that a minimal amount of console log output is lost (no more than one second's worth) and minimizes corruption of its *console_log* file system.

Related Brick CLI commands

The following Brick CLI commands related to the Console Logging feature can be issued from the Enter Command field on the Brick Console Window via the SMS Navigator or from the command line of a remote console session:

- `upload consolelog`— manually uploads console log files from the Brick flash memory to the SMS *console_log* directory.
- `set consolelogsize` *<n>*— temporarily overrides the default 10K byte Brick flash memory limit for console log data, where *<n>* is the temporary file size limit, in bytes. The Brick console log file size reverts back to the default 10K byte limit after the Brick reboots.

□

10 Alcatel-Lucent VPN Firewall *VPN Firewall Brick*™ Security Appliance Display Commands

Overview

Purpose

This chapter provides information to perform the following:

1. Issue `display` commands with the correct syntax.
2. Interpret the results of a `display` command.

Overview

Use the `display` commands to view information that is relevant to the Brick you are accessing or the Brick zone rulesets that are configured for the Brick .

For example, you can display a Brick ARP or MAC table, port statistics, and static routes that have been configured for the Brick . With the `display` commands, you can also view information such as a Brick zone ruleset policy, hostgroup definitions, or service group definitions.

The commands in this chapter are listed in alphabetical order. For each command, the chapter provides an overview, description, and explanation of the format, and examples.

To see a complete listing of the display commands online, enter `help display` at the command prompt.

Contents

display arptable

Overview

The `display arptable` command displays the contents of the Address Resolution Protocol (ARP) table. Every time the Brick needs to resolve an IP address, an ARP request is issued and an entry is written to the ARP table.

Each entry in the ARP table contains the IP address that requires resolution, the MAC address to which the ARP request is sent, and the status of the request (OK or Wait).

Format

The format of the `display arptable` command is:

```
display arptable
```

Explanation

The `display arptable` command provides additional information that cannot be displayed on the Alcatel-Lucent Security Management Server (SMS).

You may want to issue this command if the Brick has been configured with static routes and you want to examine the MAC addresses of the associated routers.

A status of ″Wait″ indicates the ARP request is pending. Note that a status of ″Wait″ for the IP Address of the SMS or the default gateway indicates a connectivity problem. These connections should return status information immediately.

Example

The following is an example `display arptable` command:

```
hr-brick1>display arptable
IP Address      MAC Address        Status
125.92.38.40     0:60:97:e:b2:a1    OK
125.92.38.10     8:0:20:8:6d:98    OK
125.92.38.62     0:60:8:3a:54:11    OK
125.92.38.245    0:10:4b:de:f6:46  OK
Total ARP entries:  4
```

□

display auth

Overview

The `display auth` command displays information about the EUA channel connection between the SMS. This channel is used for VPN user authentication and VPN tunnel status.

Format

The format of the `display auth` command is:

```
display auth
```

Explanation

There is one line of output for each SMS listed on the Brick screen. An `*` indicates that this is the connection that the Brick will use when it initiates a VPN authentication.

Example

The following is an example `display auth` command:

```
EUA address       Status    send #        recv # 10.2.1.253*       Up
```

display cachestats

Overview

The `display cachestats` command displays the current session cache statistics for the specified Brick zone ruleset.

The display of session counts in the current cache can be filtered by specific criteria (a count of all sessions to a specific destination port, for example). If no filtering criteria is specified, the output displays the total number of sessions for the Brick zone ruleset.

Mapped cache entries are counted only once.

Format

The format of the `display cachestats` command is:

`display cachestats` *`<zone>`*
`[<filter_list>]`

where:

- *`<zone>`* is the Brick zone ruleset that contains the current session cache statistics to be displayed. If the Brick zone ruleset was not loaded on the Brick, an error is displayed.
- *`<filter_list>`* is an optional argument that specifies one or more of the following parameters. Multiple parameters are separated by a space.

Parameter	Explanation	Example
d=<destination ip/subnet/range>	Destination IP address. A subnet/mask can be specified with the IP address (Example: `192.168.1.1/28` A range of IP addresses can also be specified (Example: `192.168.11-192.168.28`	d=123.34.134.2

Parameter	Explanation	Example
s=<source ip/subnet/range>	Source IP address. A subnet/mask can be specified with the IP address (Example: `192.168.1.1/28` A range of IP addresses can also be specified (Example: `192.168.11-192.168.28`	s=104.23.32.123
p=<IP protocol/dest port(range)/src port(range)>	The IP protocol/destination port/source port. A source or destination port range can be specified (Example:	p=17/138/1137
a=pass/drop/proxy	Action taken on the packet	a=pass
n=rule_number	Brick zone rule number	n=210
f=l/s	Format options (l or s). If f=l is specified, the Brick sends the output in audit records to the SMS instead of the Brick console. If f=s is specified, the Brick displays only the total session count that matches the specified filter option.	f=l

Explanation

In command input, an asterisk (*) can be specified as a wildcard character to match all instances of a parameter. In command output, parameters that are not defined are assumed to be a wildcard (*).

Example

The following is an example `display cachestats` command:

```
hr-brick1>display cachestats administrativezone p=*/*
Source          Destination     Service           Rule#  Act  Session Count
*               *               6/*/*               *     *            2
*               *               17/*/*              *     *            2
*               *               */*/*               *     *            4
```

display clientpolicy

Overview

The `display clientpolicy` command displays the tunnel policy on the Brick.

Format

The format of the `display clientpolicy` command is:

`display clientpolicy <zone>`

Example

The following is an example of the `display clientpolicy` command:

```
display clientpolicy vpnzone
TEP, DHGRP, PH1Enc, PH1Auth, Proto, PH2Enc, PH2Auth, pfs, comp,
   count
20.20.19.100, Group 1, 3des, sha1, ESP, 3des, sha1, None, None, 10
```

Explanation

The following table summarizes the output fields for this command.:

Remote Tep	Remote Tunnel Endpoint
DH	Diffie-Hellman Group
PH1Enc	ISAKMP Encryption Type
PH1Auth	ISAKMP Authorization Type
Proto	Protocol
PH2Enc	IPSec Encryption Type
PH2Auth	IPSec Authorization Type
PFS	Perfect Forward Secrecy
Comp	Compression
count	Total number of Clients connected

display configuration

Overview

The `display configuration` command displays the contents of the *inferno.ini* file.

This file contains configuration information, such as the Brick name, that was entered in the Lucent Security Management Server (SMS) graphical user interface (GUI).

Format

The format of the `display configuration` command is:

```
display configuration
```

Explanation

You may want to issue this command if you need to know the IP address, the number of ports and their IP addresses and network masks, and other characteristics of the Brick.

Note that the Remote Login ID is an encrypted string.

The following table explains VLAN- and Brick failover-related fields:

Field	Values	Explanation
`dom`	Blank if no VLAN assigned, or a letter from a to m	VLAN domain
`pdef`		Port default VLAN ID
`mbr`		Port VLAN membership
`fmt`	u = untagged q = 802.1Q p = preserve a = any d = 802.1Q except default	Format: two letter pair for receive and transmit
`failover`	yes/no	Indicates member of Brick failover pair
`act`	Value in tenths of a second	Brick failover activation Time
`yield`	Value in tenths of a second	Brick failover yield time
`stshint`	auto or port number (0 - 10)	Preferred state sharing link for failover pair

Field	Values	Explanation
vi*<n>*	<n> is a sequential number starting at 0. One per subnet. vid=VLAN ID	VLAN IP assignment
vp*<n>*	<n> is a port number (0 - 10)	VLAN configuration for port<n>

Example

The following is an example `display configuration` command:

```
hr-brick1>display configuration

r=10.10.10.4
ether3=type=i82557
vp3=dom= pdef=1 mbr= fmt=uu
ether2=type=i82557
vp2=dom= pdef=1 mbr= fmt=uu
ether1=type=i82557
vp1=dom= pdef=1 mbr= fmt=uu
ether0=type=i82557
vp0=dom= pdef=1 mbr= fmt=uu
vi0=vid=1 ip=10.10.10.4/24 pvt=n
gateway=gwip=
nics=4
admin=addr=10.10.10.10
vgc=10.10.10.10
RemoteLoginId=91e6a6dbc0004d1c54f0494610414adfb4c5ad45
audit=addr=10.10.10.10
auditwait=no
fwname=brick_one
failover=yes
act=4
yield=15
stshint=auto
```

□

display dhcp

Overview

The `display dhcp` command displays information about the current DHCP lease (if any).

Format

The format of the `display dhcp` command is:

```
display dhcp
```

Example

The following is an example of the `display dhcp` command:

```
hr-brick1> display dhcp
Current address = 69.141.244.24, mask = 255.255.248.0
DHCP server IP = 68.87.64.13
DHCP gateway IP = 69.141.240.1
lease expires in = 341850 secs
lease renewal in = 151092 secs
DNS server(s) = 68.87.64.146 and 68.87.75.194
```

□

display dpatbpg

Overview

The `display dpatbpg` command displays information about BSR/SGSN address/port mappings from DPAT bindings between the BPG (Brick device) and BSR in a specific Brick zone.

Format

The format of the `display dpatbpg` command is:

`display dpatbpg <ZONE>`

Example

The following is an example of the `display dpatbpg` command:

```
hr-brick1> display dpatbpg passall2
    FBSR-IP        vRNCteid      SGSN-IP      SGSNteid
===============    ========   =============== ========
10.200.25.100         1        10.200.100.10         8
10.200.25.101         2        10.200.100.10         9
```

□

display dpatbsr

Overview

The `display dpatbsr` command displays information about DPAT bindings between the Brick device and all BSRs in a specific Brick zone.

Format

The format of the `display dpatbsr` command is:

`display dpatbsr` *<ZONE>*

Example

The following is an example of the `display dpatbsr` command:

```
hr-brick1> display dpatbsr passall2
    FBSR-IP      vRNCteid
10.200.25.100         1
10.200.25.101         2
=== Total entries in FBSR table for zone 'passall2': 2 ===
```

display dpatbvg

Overview

The `display dpatbvg` command displays information about BSR/MSC address/port mappings from DPAT bindings between the BVG (Brick device) and BSR in a specific Brick zone.

Format

The format of the `display dpatbvg` command is:

`display dpatbvg <ZONE>`

Example

The following is an example of the `display dpatbvg` command:

```
brick-hr1> display dpatbvg administrativezone
     BSR-IP       BSRPort    V-Port        MSC-IP      MSCPort
===============  ========  ========  ===============  ========
  10.200.25.100      2020     32768     10.200.80.50      4020
  10.200.25.100      2022     32770     10.200.80.50      4022
  10.200.25.100      2004     32772     10.200.80.50      4004
  10.200.25.100      2006     32774     10.200.80.50      4006
  10.200.25.100      2008     32776     10.200.80.50      4008
  10.200.25.100      2010     32778     10.200.80.50      4010
  10.200.25.100      2012     32780     10.200.80.50      4012
  10.200.25.100      2014     32782     10.200.80.50      4014
  10.200.25.100      2016     32784     10.200.80.50      4016
  10.200.25.100      2018     32786     10.200.80.50      4018
=== Total entries in DPAT-BVG table for zone 'administrativezone': 10 ===
```

□

display dpatsgsn

Overview

The `display dpatsgsn` command displays information about all of the Serving GPRS Support Nodes (SGSNs) mapped to the BSR(s) during DPAT binding sessions between the BPG (Brick device) and BSR(s) in a specific Brick zone. The output includes the SGSN index and the number of DPAT bindings on each SGSN.

Format

The format of the `display dpatsgsn` command is:

`display dpatsgsn<ZONE>`

Example

The following is an example of the `display dpatsgsn` command:

```
hr-brick1> display dpatsgsn passall2
    SGSN-IP      SGSN idx  #binding
===============  ========  ========
  10.200.100.10         1         2
=== Total entries in DPAT-SGSN table for zone 'passall2': 1 ===
```

□

display dpatsteid

Overview

The `display dpatsteid` command displays information about all of the Serving GPRS Support Node (SGSN) tunnel endpoint identifiers of a specific SGSN mapped to the BSR(s) during DPAT binding sessions between the BPG (Brick device) and BSR(s) in a specific Brick zone.

Format

The format of the `display dpatsteid` command is:

`display dpatsteid <ZONE> <sgsn-index>`

Explanation

The *<sgsn-index>* parameter is required. This value is obtained by running the `display dpatsgsn <ZONE>` command. The output of that command provides the SGSN address and SGSN index. Refer to the "display dpatsgsn" (p. 10-16) command description.

Example

The following is an example of the `display dpatsteid` command:

```
hr-brick1> display dpatsteid passall2 1
    SGSN-IP      SGSNteid  VRNCteid
===============  ========  ========
  10.200.100.10         8         1
  10.200.100.10         9         2
=== Total entries in SGSN TEID table for zone 'passall2': 2 ===
```

display encapsulation

Overview

The `display encapsulation` command displays information about any enabled LAN-LAN VPN tunnels or client tunnels that are using UDP encapsulation to ″disguise″ their IPSec packets as they traverse through network devices that might otherwise block them.

For more information on UDP encapsulation, please refer to *Chapters 11 and 12* in the *SMS Policy Guide*.

Format

The format of the `display encapsulation` command is:

`display encapsulation` *<zone>*

where *<zone>* is the name of the brick zone ruleset that has at least one tunnel using UDP encapsulation.

Explanation

The ″Target Host″ is the IP address or host group available at the far end of the tunnel. The ″Encap Hdr Dst IP″ is the next hop (router address, VBA,etc.) for the packet. The ″Encap Hdr Srv″ is the protocol, source port and destination port used by the encapsulated packet.

Example

The following is an example of the `display encapsulation` command:

```
test_brick> display encapsulation vpnzone
 Target Host                  Encap Hdr DstIP Encap Hdr Srv  Ref TagValue
 ---------------------------- --------------- ------------- --- --------
 10.20.30.153                 135.92.38.209   17/30241/501   2    10054
```

□

display failover

Overview

The `display failover` command displays the current state of a failover Brick pair

Format

The format of the `display failover` command is:

```
display failover
```

Explanation

The display failover command lists the two members of the failover pair by Brick ID, the last four digits of the MAC address. The State column shows each Brick status, either Active or Standby. If the Standby cannot be contacted, as might be the case in an actual failover situation, the message ″NO Standby″ is displayed.

For each monitored Brick interface, the command output shows:

- The number of missed heartbeats (calculated by sequence number)
- Recent jitter (the average difference between expected arrival time and actual arrival time, weighted towards more recent events) for both received and transmitted packets
- Duplicate heartbeats
- Other errors (including invalid digest)
- The number of seconds that the interface state has been other than **Verified**

Error counts and time are cumulative, calculated from 12:00 p.m. midnight GMT per the Brick time.

Example

The following is an example `display failover` command:

```
hr-brick1> display failover
Bricks              State    Role       Last Pri Pwr Id-MAC
* Model150          ACTIVE   Primary    N/A   +  307 00601d-646b9e (THIS
   brick)
  nolabel           standby  Secondary    0      307 000586-020fc0
#  Status   Active-MAC    Physical-MAC  Missed Duplct  Jitter Other  Unverfied
                                        --Heartbeats-  (msec) Errors  Time
 0 verified 020000-bee75e 00601d-646b9e      0      0   0/ 0      0   00:00:05
 1 down     020000-68bd90 00601d-646b9c      0      0   0/ 0      0   01:15:16
 2 verified 020000-57a2dc 00601d-646b9d      0      0   0/ 0      0   00:00:05
 3 down     020000-34f7ea 00601d-646b9f      0      0   0/ 0      0   01:15:16

Total Messages sent = 5738, received = 10723
Total hmac errors = 0, replay errors = 0
Dropped Messages rx = 0, tx = 0, no media = 0
State share link = /net/ether2.  State share moves = 1
Peer Version is 9.2.337
Time since last statistics reset 01:15:16
```

display files

Overview

The `display files` command displays the sizes, dates modified, and filenames of all files resident on the Brick.

Format

The format of the `display files` command is:

```
display files
```

Explanation

The display files command lists all files stored in the Brick flash memory and downloaded from the SMS. The files b.com, tvpc, authinfo, and inferno.ini are copied from floppy when the Brick is created.

Example

The following is an example `display files` command:

```
test_brick> display files
 Size Date (GMT) Name
 0 Jun 14 05:14 bin/
 0 Jun 14 05:14 dev/
 0 Jun 14 05:14 net/
  0 Jun 14 05:14 prog/
 0 Jun 14 05:14 n/
 0 Jun 14 05:14
 58672 Jun 14 05:14 osinit
    2112 Jun 14 05:14 mytime
 66912 Jun 14 05:14 commands
 35804 Jun 13 17:14 b.com
 924 May 08 15:38 authinfo
 493 Jun 13 17:15 inferno.ini
 1241286 Jun 14 14:27 tvpc
 0 Jun 14 14:36 policy/
 0 May 08 15:41 dump.txt
 6 May 08 15:41 tzoffset
 521332 Jun 14 14:28 hspbin
```

□

display hostgroups

Overview

The `display hostgroups` command displays the current set of hostgroup definitions for the specified Brick zone ruleset.

Format

The format of the `display hostgroups` command is:

`display hostgroups` *<zone>*

where *<zone>* is the name of the Brick zone ruleset that contains the hostgroups.

Explanation

The first column is the name of the hostgroup.

The second column contains the type: normal or dynamic. Normal hostgroups are those that are manually configured to be part of a policy. Dynamic hostgroups are those that are temporary, and are used primarily when the Brick is authenticating users.

The third column contains the IP address or range of IP addresses associated with the hostgroup.

Each IP address or range is printed on its own line.

Example

The following example shows two `display hostgroups` commands:

```
hr-brick1>display hostgroups vpnhostileclient
Hostname            Type     IP Range
privateservers     Normal   10.92.11.10 - 10.92.11.49
hostileclients     Normal   10.92.10.70 - 10.92.10.129
hr-brick1>display  hostgroups administrativezone
Hostname            Type    IP Range
bricks             Normal   10.92.11.10 - 10.92.11.49
hostileclients     Normal   123.34.23.34 - 123.34.45.56
```

□

display icm

Overview

The `display icm` command is used to display session statistics as the Brick uses the ″Intelligent Cache Management″ feature. The feature monitors the cache usage in the Brick to ensure that its resources are not overwhelmed by excessive traffic such as might be seen in the event of an attack.

For more information on this feature, please refer to *Chapter 4 Configuring Brick Ports* in the *SMS Administration Guide*.

Format

The format of the `display icm` command is:

```
display icm
```

Explanation

A summary is provided as shown below that lists such items as whether the feature is activated on the Brick, the setting for the trigger threshold, as well the number and protocol of the packets passed through the Brick.

Example

```
test_brick> display icm

Current ICM config (disabled). Rpt=0s. Maxidx= 7 flags=00000002
Floor: 65%= 21810360 bytes. Trigger: 80%= 26843520 bytes, Cur: 6528
  bytes
Class name ID DAH Service Pct Bytes Us% Used bytes Sessions
  Unprunable
---------- -- --- --------- --- ---------- --- ---------- -------- ----------
 Other 0***      */*/* 0      0 0   2112     8      0
Drop_Unaud 1 ynn     */*/* 0    0 0      0      0    0
Drop_Audit 2 yyn    */*/* 0    0 0     0       0     0
   ICMP 3 n*n     1/*/* 15   5033160 0    576    2      0
    UDP 6 ***    17/*/* 25   8388600 0    3584   14      0
  TCP_SYN 5 n*y      6/*/* 45   15099480 0    0    0    0
(Residual) 4 n**   17/*/* 20   6710880  0   256   1    0
```

□

display interfacestatus

Overview

The `display interfacestatus` command displays relevant information about traffic that flows through a specified port since the Brick was rebooted last.

You may want to issue this command if you suspect a hardware problem and need to investigate patterns of excessive error messages.

This information is highly dependent upon the make and model of the NIC and the Inferno device driver associated with it. The following two tables are specific to Intel 82557 related cards.

Format

The format for the `display interfacestatus` command is:

`display interfacestatus` *<interface#>*

where:

- *<interface#>* is the number of the port (0 through 19).

If you issue the command without the <interface#> argument, it will return a brief summary of all ports on the Brick.

Explanation

The status reported per port is grouped according to transmit statistics and receive statistics.

Transmit

The following information is printed for transmit (TX):

Good frames	This counter contains the number of frames that were transmitted properly on the link. It is updated only after the actual transmission on the link is completed, and not when the frame was read from memory as is done for the TxCB status.
Exceeded maximum collision errors	This counter contains the number of frames that were not transmitted since they encountered the configured maximum number of collisions.
Late collision errors	The number of collisions detected later than 512 bit-times (i.e. 51.2 microseconds for 10BaseT) into the transmission of the frame.

Underrun errors	The number of frames, which failed to be transmitted or were retransmitted because the system bus (via the DMA) did not keep up with the transmission.
Lost carrier sense	The number of times the carrier sense was lost during transmission.
Deferred frames	The number of frames initially delayed due to activity on the link.
Single collisions	The number of successfully transmitted frames that experienced exactly one collision
Multiple collisions	The number of successfully transmitted frames that experienced multiple collisions
Total collisions	This counter contains the total number of collisions that were encountered while attempting to transmit.

Receives

The following information is printed for receives:

Good frames	The number of good frames received.
CRC errors	This counter contains the number of aligned frames discarded because of a CRC error. This counter increments only once per receive frame. It is mutually exclusive to alignment and short-frame errors.
Alignment errors	This counter contains the number of frames that are both misaligned (i.e., where CRS deasserts on a nonoctal boundary) and contain a CRC error. It is mutually exclusive to the CRC error and short-frame counters.
Resource errors	This counter contains the number of good frames discarded because there were no resources available. Frames intended for a host whose RU is in the No Resources state fall into this category. If the 82557 is configured to Save Bad Frames and the status of the received frame indicates that it is a bad frame, this counter is not updated.
Overrun errors	This counter contains the number of frames known to be lost because the local system bus was not available. If the traffic problem persists for more than one frame, the frames that follow the first are also lost; however, because there is no lost frame indicator, they are not counted.

Collision detect errors	This counter contains the number of frames that encountered collisions during frame reception.
Short frame errors	This counter contains the number of received frames that are shorter than the minimum frame length. It is mutually exclusive to the alignment and short-frame error counters and has a higher priority (i.e., a short frame will always increment only the short-frame counter).

Example

The following is an example `display interfacestatus` command for ether 0:

```
hr-brick1>display interfacestatus 0
Interface 0; Device Driver i82557
TX: good frames:                          5415
   exceeded max collision errors:           2
   late collision errors:                   0
   underrun errors:                         0
   lost carrier sense:                      0
   deferred frames:                       657
   single collisions:                      214
   multiple collisions:                    394
   total collisions:                      1938
RX: good frames:                       1070756
   CRC errors:                            1486
   alignment errors:                      1213
   resource errors:                          0
   overrun errors:                           0
   collision detect error s                  0
   short frame errors                    82325
```

The following example of `display interfacestatus` (with no port number) shows a summary of all the interfaces:

```
test_brick> display interfacestatus
Interface    MAC             Link    Speed      Mode
ether0    0:90:27:16:5b:93  Up     100 Mbps   Full Duplex
ether1    0:90:27:16:59:63  Up     100 Mbps   Full Duplex
ether2    0:90:27:16:3e:f3  Up     10 Mbps    Half Duplex
ether3    0:90:27:16:50:35  Down   -          -
```

display iplink

Overview

The `display iplink` command displays a table showing crystal/coupler details for GA and GD boards in a Media Gateway (MGW) unit handling VoIP/NOE traffic.

Format

The format of the `display iplink` command is:

`display iplink <zone> <GD-IP address>`

Where *<GD-IP address>* is the IP address of the GD board in the MGW.

Explanation

In the `BdType` column of the command output, `1` denotes a GD board and `2` denotes a GD board.

If it is a NATed IPlink, the corresponding mapped IP is also displayed in the command output.

Example

The following is an example of the `display iplink` command:

```
noe-2-BOTTOM> display iplink mgw2_zone 192.11.153.19
   GD-GA-IP                    Mapped IP          Crystal       Coupler
  BdType
===============  ===============  =======  =======  =======
  192.11.153.19             192.11.153.40               2
  0             1
  192.11.153.16             192.11.153.41               2
  1             2
  192.11.153.17             192.11.153.42               2
  2             2
=== Total entries in GD-GA MAP table for zone 'mgw2_zone': 3 ===
```

Explanation

The following table summarizes the output fields for this command.:

Remote Tep	Remote Tunnel Endpoint
DH	Diffie-Hellman Group
PH1Enc	ISAKMP Encryption Type

PH1Auth	ISAKMP Authorization Type
Proto	Protocol
PH2Enc	IPSec Encryption Type
PH2Auth	IPSec Authorization Type
PFS	Perfect Forward Secrecy
Comp	Compression
Enable	Enable/Disable tunnel status
Status	Tunnel Status (UP/DOWN)

□

display lantolantunnels

Overview

The `display lantolantunnels` command displays the configured LAN-to-LAN tunnel policy on the Brick.

Format

The format of the `display lantolantunnels` command is:

`display lantolantunnels` *<zone> <tunnel name>*

Example

The following is an example of the `display lantolantunnels` command:

```
display lantolantunnels vpnzone nyc-atl-tunnel
Remote Tep, DH, PH1Enc, PH1Auth, Proto, PH2Enc, PH2Auth, Pfs, Comp, Enable,
   Status
20.20.19.100, Group 1, 3des, sha1, ESP, 3des, sha1, No, No, Enabled, UP
```

Explanation

The following table summarizes the output fields for this command.:

Remote Tep	Remote Tunnel Endpoint
DH	Diffie-Hellman Group
PH1Enc	ISAKMP Encryption Type
PH1Auth	ISAKMP Authorization Type
Proto	Protocol
PH2Enc	IPSec Encryption Type
PH2Auth	IPSec Authorization Type
PFS	Perfect Forward Secrecy
Comp	Compression
Enable	Enable/Disable tunnel status
Status	Tunnel Status (UP/DOWN)

□

display lsms

Overview

The `display lsms` command returns the IP address of the SMS to which the Brick is homed.

Format

The format of the `display lsms` command is:

```
display lsms
```

Explanation

Use display SMS to determine which SMS of a redundant pair to which the Brick is homed.

Example

The following is an example `display lsms` command:

```
display lsms
Last SMS was 10.10.10.5
```

□

display mactable

Overview

The `display mactable` command displays the contents of the Media Access Control (MAC) table for a specified port.

MAC addresses are hardware addresses that are hard-coded in all network interface cards. The MAC table tracks the MAC addresses of all MAC elements that are associated with each network interface.

Format

The format of the `display mactable` command is:

`display mactable` *<port#>*

where *<port#>* is a port number (0 through 19)

The command syntax is as follows:

- If the port number is missing, the MAC table is displayed for all ports.
- If the port number is specified but it is not available, an empty table is displayed.

Explanation

Each entry in the MAC table contains the port of the MAC element, the MAC address of the element, and the status (OK, Old, or Unavail).

A status of *Old* means that the address needs to be refreshed or is in the process of being refreshed.

A status of *Unavail* means that the port is down.

The VLAN column displays the VLAN ID on which the MAC address resides. The Brick MAC addresses are present on every VLAN attached to the Brick. Their VLAN ID is displayed as ″*″.

Example

The following is an example `display mactable` command :

```
hr-brick1>display mactable 0

IF      MAC Address      Status VLAN
local0 0:60:8:c1:91:40 OK      *
ether0 0:a0:d1:3:21:80 OK      1
local1 0:a0:d1:3:1a:41 OK      *
```

display mempools

Overview

The `display mempools` command displays the memory usage information (in bytes) of the main, heap, image, and Brick session cache pools.

For each pool it displays:

- Maximum allocated size in bytes
- Currently allocated size in bytes
- Peak (high water mark) size in bytes,
- Arena size in bytes
- The difference between the number of allocations versus frees.

Format

The format of the `display mempools` command is:

```
display mempools
```

Explanation

The `display mempools` command provides additional information that cannot be retrieved on the Lucent Security Management Server.

If the Peak Memory size is persistently approaching the Maximum Memory size, it may be an indicator that the Brick is overloaded and not performing efficiently. You may need to acquire additional Bricks for load balancing the traffic.

Example

The following is an example `display mempools` command

```
hr-brick1>display mempools
Pool      Max-Size      Cur-Size      Peak   Arena-Sz   In-Use
Main      20971520      1141472  1296736   1573296   1519
Heap      4194304     194720     210368     262216     1469
Image      1048576     0          0          0         0
SCache     8388608     768        3840     131108     4
```

□

display mgwrtp

Overview

The `display mgwrtp` command displays RTP usage for a Media Gateway (MGW) unit is a specific Brick zone. The command output shows the local IP (GA IP address), remote station, and ports that are used.

Format

The format of the `display mgwrtp` command is:

`display mgwrtp <ZONE> GD-IP addr`

Where: *GD-IP addr* is the IP address of the GD board in the MGW unit.

Example

The following is an example of the `display mgwrtp` command.

```
noe-2-BOTTOM> display mgwrtp mgw2_zone 192.11.153.19
   local IP                        remote  IP            localPt      rmtPt
===============  ===============  =======  =======
  192.11.153.16                 192.11.153.2         32544    32514
=== Total used RTP channels on this GD/GA for zone 'mgw2_zone': 1 ===
```

□

display nat

Overview

The `display nat` command shows any rules using network address translation (NAT) with the ″direct″ type option enabled.

For more information on NAT, please refer to the *Network Address Translation* chapter in the *SMS Policy Guide*.

Format

The format of the `display nat` command is :

`display nat <zone>`

where *<zone>* is the Brick zone ruleset that has rules configured with NAT and the ″direct″ type specified under the Address Translation tab for the rule.

Explanation

This command will only display NAT entries where the rule(s) uses direct NAT. Direct NAT implies that there are two hostgroups defined, each with the same number of hosts. One group is the ″inside″ private list of IP addresses (Pre-NAT list)and it is mapped to the other group of ″outside″ routable IP addresses (Post-NAT list).

Example

The following is an example of the `display nat` command:

```
test_brick> display nat administrativezone
 Name            RefCt Pre-NAT list               Post-NAT list
 --------------- ----- -------------------------  -------------------------
 Rule_201_2          1 brickLocalAddresses        brickRemoteAddresses
 Rule_200_3          1 brickRemoteAddresses       brickLocalAddresses
```

□

display noe

Overview

The `display noe` command displays the pinholes (Brick ports) opened for RTP sessions between the IP touch phone(s) and call server endpoints during VoIP communications in a specific Brick zone. The output shows the associated IP addresses, the Brick UDP port(s) used, and the status of the UA signalling link.

If the Brick is serving as a NATing device, the number of NATed endpoints is indicated in the `Nat` column for the public IP address (`EPT-IP` column).

For NATed IPlink sessions between a Media Gateway (MGW) and call server supported by the Brick, the MGW is treated like an endpoint, so the same `display noe` command can be used.

Format

The format of the `display noe` command is:

`display noe` *`<ZONE>`*

Example

The following is an example of the `display noe` command.

```
noe-1-Bottom> display noe administrativezone-noe
Nat       EPT-IP          CPU-IP            CPU-IP2      BPort  State
===  ===============  ===============  ===============  =====  =====
  1    192.11.153.82    192.11.153.10    192.11.153.11  32512      3
  1    192.11.153.81    192.11.153.10    192.11.153.11  32512      3
       192.11.153.21    192.11.153.10    192.11.153.11  32512      7
       192.11.153.22    192.11.153.10    192.11.153.11  32512      7
          10.160.0.2    192.11.153.10    192.11.153.11  32512      7
          10.160.0.3    192.11.153.10    192.11.153.11  32512      7
=== Total entries in NOE table for zone 'administrativezone-noe': 6 ===
State 1=(tftp)lanpbx.cfg sent 2=(tftp)server info rcvd
      3=(tftp)startnoe sent 4=(tftp)baseport rcvd
      5=(CS)DL_CONN_ACK rcvd 6=(EP)DL_CONN_ACK rcvd
      7=(noe)signalling link up 8=(noe)RTP established
```

□

display noenat

Overview

The `display noenat` command displays the status of the pinhole (Brick port) opened for RTP sessions between the IP touch phone(s) and call server endpoints during VoIP communications in a specific Brick zone, when the Brick is serving as a NATing device.

Format

The format of the `display noenat` command is:

`display noenat <ZONE> <public-ip-address>`

Explanation

The status of the pinhole (Brick port) opened during a NATed session for NOE/VoIP communications is indicated in the `State` column of the output as follows:

- `1` indicates that the *lanpbx.cfg* file for initialization of the IP phone device was received by the Brick device from the call server
- `2` indicates that information about the call server (type, version, IP address) has been received by the Brick device
- `3` indicates that a `START_RTP` UA message was sent by the call server and received by the Brick device for setup of the RTP session between the IP phone device and entity
- `4` indicates that the UDP port to be used for transfer of the RTP packets during the call or data stream was received by the Brick device
- `5` indicates that a `DL_CONN_ACK` message sent by the call server was received by the Brick device
- `6` indicates that a `DL_CONN_ACK` message sent by the IP phone device was received by the Brick device
- `7` indicates that the Universal Alcatel (UA) proprietary signalling link between communication endpoints is up
- `8` indicates that an RTP session between the IP phone and another entity crossing this Brick device port has been successfully established

Example

The following is an example of the `display noenat` command.

```
noe-1-Bottom> display noenat administrativezone-noe 192.11.153.81
     EPT-IP         CPU-IP            CPU-IP2      BPort  State
===============  ===============  ===============  =====  =====
  192.11.153.81    192.11.153.10    192.11.153.11  32516      7
=== Total entries in NOE-NAT table for zone 'administrativezone-noe': 1 ===
State 1=(tftp)lanpbx.cfg sent 2=(tftp)server info rcvd
      3=(tftp)startnoe sent 4=(tftp)baseport rcvd
      5=(CS)DL_CONN_ACK rcvd 6=(EP)DL_CONN_ACK rcvd
      7=(noe)signalling link up 8=(noe)RTP established
```

display noemap

Overview

The `display noemap` command displays mappings between the indexes (sub-address bytes) and MAC addresses of endpoints for NATing performed by the Brick device in a specific zone.

Format

The format of the `display noemap` command is:

`display noemap <ZONE>`

Example

The following is an example of the `display noemap` command.

```
noe-1> display noemap e1-zone
index   MacAddress
=====  ============
    1  0bba08016032
```

display partitions

Overview

The display partitions command will show any VLAN partitions defined for a given Brick.

For more information on Brick partitions, refer to the *SMS Administration Guide*.

Format

The format for this command is simply:

display partitions

Explanation

If the Brick is ″VLAN enabled″, you have the option of creating Brick partitions. A partition allows the Brick to properly route packets from a VLAN using the same private IP address space as another customer or department. The command output lists the partition number and the VLAN IDs associated with it.

Example

The following is an example of the display partitions command:

```
test_brick> display partitions
Partition   VLAN IDs
*Default    *(local)
```

□

display partitions

Overview

The display partitions command will show any VLAN partitions defined for a given Brick.

For more information on Brick partitions, refer to the *SMS Administration Guide*.

Format

The format for this command is:

```
display partitions
```

Explanation

If the Brick is ″VLAN enabled″, you have the option of creating Brick partitions. A partition allows the Brick to properly route packets from a VLAN using the same private IP address space as another customer or department. The command output lists the partition number and the VLAN IDs associated with it.

Example

The following is an example of the display partitions command:

```
test_brick> display partitions
Partition   VLAN IDs
*Default    *(local)
```

□

display pat

Overview

The `display pat` command shows the table of ports that are reserved for connections which are, or are about to be, established. It also shows the mapping between that reserved port and the private address and port.

Ports are only reserved when performing address translation using the VBA and only for secondary connections (such as the FTP data connection and H.323, SIP, and NOE media streams) and not for primary connections such as HTTP.

Format

The format of the `display pat` command is:

`display pat <zonename>`

Example

The following is an example of the `display pat` command:

```
test_brick > display pat internetzone
    LocalIP         LocalPort    Protocol MappedPort
===============   ============   ======== ==========
     192.168.1.2           3329      TCP        32768
=== Total entries in PAT table for zone 'internetzone': 1 ===
```

□

display policy

Overview

The `display policy` command displays the current ruleset for the specified Brick zone ruleset.

Format

The format of the `display policy` command is:

`display policy <zone> [dyn]`

where

- *<zone>* is the Brick zone ruleset that contains the policy you want to display. If the Brick zone ruleset was not loaded on the Brick, an error is displayed.
- [dyn] is an optional keyword that can be specified. This keyword will display any dynamic rules of a Brick zone ruleset security policy at the time the command was issued.

Dynamic rules are those that are temporary and used to allow traffic through the Brick for VPN and FTP traffic, and when traffic is forwarded to a proxy server.

Explanation

The output format is an abbreviated list of the Brick zone ruleset current rules, including the load date, the signing date and the name of the signing administrator. The following items are displayed:

- Rule number
- Source host IP address – either an IP address or a hostgroup
- Destination IP address – either an IP address or the name of a hostgroup
- Service – protocol/src-port/dst-port or name of service group
- A – action: + (pass), - (drop), y (proxy)
- D – direction: i (in), o (out), b (both)
- SM – source NAT enabled (source mapping)
- DM – destination NAT enabled (destination mapping)
- PM – port NAT enabled (port mapping)
- DEP – dependency mask enabled
- VPN – VPN enabled

The Signer at the bottom of the display is the last administrator who loaded the security policy.

Example

```
hr-brick1>display policy firewall

Rule#  Source  Destination Service                    A D SM DM PM
  DEP VPN
200      *      SMS        */*/*                      + o no no no no
  no no
201      SMS  *             brick_from_SMS_Services   + i no no no
  no
202      *      *             1/3/13                    + o no no no
  no no no
203      *      *             17/500/*                  + i no no no
  no no
204      *      *             17/*/500                  + o no no no
  no no
205      *      *             17/1024/*                 + i no no no
  no no
65535  *      *             */*/*                      - b no no no
  no no no
Load Date: Mar 21 10:08:13 2001
Sign Date: Dec 02 17:30:26 2000
Signer: Admin
```

□

display remoteconsole

Overview

The `display remoteconsole` command reports the state of the remote Brick console if it is connected and the SMS Administrator ID associated with that remote console session.

Format

The format of the `display remoteconsole` command is:

```
display remoteconsole
```

Explanation

You can use `display remoteconsole` to from a local Brick console connection to determine if another administrator is connected to the Brick via a remote console session. The command also returns the AdminID of the administrator.

Example

The following is an example `display remoteconsole` command:

```
display remoteconsole
User Admin_22 is connected through remote console.
```

□

display routes

Overview

The `display routes` command displays the set of static routes configured for the Brick.

If a Brick is configured with static routes, it can send traffic to LAN segments that are not connected to the Brick. The routes determine how the Brick routes traffic that are not destined for a local LAN segment.

Format

The format of the `display routes` command is:

`display routes` *`[<interface# | #>]`*

where *`[<interface# | #>]`* can be:

- A port number (0 through 11).
  The command syntax is as follows:
  - If a port number is missing, the routes are displayed for all ports.
  - If a port number is specified, but it is not available, an empty table is displayed.
- #

If # is specified, the routes are displayed for the local port (the firewall Brick zone ruleset).

Explanation

System Administrators can use the SMS to create and maintain a static routing table. Use the `display routes` command to display the routes that were set in the SMS graphical user interface.

Each entry in the static routing table contains the port number (IF), the destination IP address, the mask, and the gateway.

The interface column (IF); gives the Brick port of the gateway for the route (example: ether0). If the gateway is a on VLAN other than the default VLAN for that interface, the VLAN number is suffixed to the port number, for example, ″ether0.99.″

Example

The following is an example `display routes` command:

```
hr-brick1>display routes

IF      Destination   Mask             Gateway
ether3 0.0.0.0        255.255.255.0   192.168.14.2
local   192.168.14.0   255.255.255.0    0.0.0.0
local   192.20.250.0   255.255.255.0    0.0.0.0
local   192.168.20.0   255.255.255.0    0.0.0.0
local   192.168.15.0   255.255.255.0    0.0.0.0
ether1  192.168.40.0   255.255.255.0    192.168.20.10
ether1 192.168.50.0   255.255.255.0    192.168.20.10
ether3 135.92.38.0     255.255.255.0    192.168.14.1
```

In this example, 192.168.14.2 is the default gateway for this Brick, set in the Brick Editor Brick tab **Gateway IP Address** field, and is noted as default route ″0.0.0.0″ in the display routes output.

□

display sa

Overview

The `display sa` command displays the current set of Security Associations (SA) for the specified Brick zone ruleset.

Format

The format of the `display sa` command is:

`display sa <zone>`

where:

- *<zone>* is the Brick zone ruleset that contains the current set of Security Associations you want to display. If the Brick zone ruleset was not loaded on the Brick, an error is displayed.

Explanation

In LAN-LAN VPNs that use Internet Key Exchange (IKE), the administrators of the Brick zone rulesets at both ends of the VPN must manually create and negotiate Security Associations (SAs) to specify the type of authentication and encryption to be used in the VPN.

Use the `display sa` command to display the security associations for VPN Key Exchange that were created using the SMS graphical user interface. The output consists of nine free-form columns.

Example

The following is an example `display sa` command:

```
hr-brick1>display sa vpnhostileclient

SPI User Name Source   Destination  Prot AH  ESP TEP      Sec/KBytes
4096 efg      *       125.92.38.100 esp md5 des 125.92.   0/0
                                                 10.241
```

□

display sip

Overview

The `display sip` command displays information about active SIP transactions and dialogs in the Brick.

Format

The format of the `display sip` command is:

`display sip` *`[<zone>] [<search_string>]`*

where:

- *`<zone>`* is a Brick zone ruleset using the SIP application filter. Each transaction/dialog in the specified zone is displayed. If no zone is given, then a count of all dialogs on the Brick is displayed.
- *`<search_string>`* is a string to match in the output for each transaction/dialog. If there is no match, that dialog is not displayed. For example, *search_string* can be a complete or partial SIP Call-ID, From and/or To tag (separated by slashes).

Explanation

When a zone name is given, one line is displayed for each transaction/dialog. The format is:

```
Call-ID/From tag/To tag STATE #media M #ref R time Ts session Ss exp Es
OID
```

The `Call-ID` and tags come from the SIP message.

`STATE` is:

- `EST` - The dialog is fully established.
- `END` - The dialog has finished.
- `ERR` - the dialog has failed.

`M` is the number of media associated with the dialog.

`R` is the number of sessions and dynamic rules associated with the call.

`T` is the number of seconds remaining from the timeout value associated with the control session or the **Signaling-Only Calls Timeout** value (if applicable). If the call has active media, the session will not time out even if this number is zero.

`S` is the number of seconds remaining from a SIP Session-Expires timer.

`E` is the number of seconds remaining from a SIP Expires header or parameter.

`OID` is an internal identifier for the dialog.

Summary information

Totals values are the number of dialogs out of the total possible.

`Awaiting DNS` gives the number of dialogs awaiting DNS resolution.

`Memory` is the percentage of memory in use compared to the maximum that may be used for SIP dialogs.

`Short term` gives the total memory that is in use for messages that are part of the transaction, while `long term` gives the memory that is in use for SIP dialogs such as calls in progress. The memory is allocated in the Session cache.

Example

The following is an example `display sip` command:

```
brick-150> display sip  sipzone
5f5a1e6f45466c3c/0d793e5b/4a3fb99d-12456910001245691859-000 EST #media 1 #ref
  5 time 0s sess 0s exp 0s 1948 0x52045533
Zone requests: 1 [nqs 256 maxdepth 1]
Brick requests: 1 of 27307. Awaiting DNS: 0
Memory: 0.00% short term=1KB long term=4KB
```

□

display servicegroups

Overview

The *display servicegroups* command displays the current set of service group definitions that are currently in use for a given Brick zone ruleset.

A listing of all the default service groups is not included in the display.

Format

The format of the `display servicegroups` command is:

`display servicegroups <zone>`

where

- *<zone>* is the Brick zone ruleset that contains the current set of service group definitions you want to display. If the Brick zone ruleset was not loaded on the Brick, an error is displayed.

Explanation

The first column contains the name of the service. The second column contains the definitions of the service.

This data can also be displayed on the SMS.

Example

The following is an example `display servicegroups` command:

```
hr-brick1>display servicegroups administrativezone

Service Name Definitions
brickServices tcp/9000-9004/*
       tcp/900/*
       tcp/*/910
```

□

display sessions

Overview

The `display sessions` command displays the current session cache for the specified Brick zone ruleset.

Format

The format of the `display sessions` command is:

`display sessions` *`<zone>`*
`[<filter_list>]`

where:

- *`<zone>`* is the Brick zone ruleset that contains the current session cache you want to display. If the Brick zone ruleset was not loaded on the Brick, an error is displayed.
- *`<filter_list>`* is an optional argument that specifies one or more of the following parameters. Multiple parameters are separated by a space.

Parameter	Explanation	Example
d=<destination ip/subnet/range>	Destination IP address. A subnet/mask can be specified with the IP address (Example: `192.168.1.1/28` A range of IP addresses can also be specified (Example: `192.168.11-192.168.28`	d=123.34.134.2
s=<source ip/subnet/range>	Source IP address. A subnet/mask can be specified with the IP address (Example: `192.168.1.1/28` A range of IP addresses can also be specified (Example: `192.168.11-192.168.28`	s=104.23.32.123

Parameter	Explanation	Example
p=IP protocol/dest port(range)/src port(range)	The IP protocol/destination port/source port. A source or destination port range can be specified (Example:	p=17/138/1137
a=pass/drop/proxy	Action taken on the packet	a=pass
n=rule_number	Brick zone rule number	n=210

Explanation

In command input, an asterisk (*) can be specified as a wildcard character to match all instances of a parameter. In command output, parameters that are not defined are assumed to be a wildcard (*).

The output format is an abbreviated list of the Brick zone ruleset current sessions.

In command output, the ″A″ (action) column can be ″+″ for pass, ″-″ for drop and ″y″ for proxy. (PKT) and bytes (B) coming into the Brick zone ruleset (FWD), going out of the Brick zone ruleset (REV), (V) indicates a VPN, and (E) represents UDP VPN Encapsulation.

Example

The following is an example `display sessions` command:

```
hr-brick1>display sessions internetzone
Source          Destination     Service         AVE Rule# FWD-PKT/B   REV-PKT/
  B
69.141.231.173  192.11.153.130  17/500/500      +     411 1490/150010 1494/
  14974
8
135.3.40.79     69.141.231.173  6/22/47299      +    1001 32694/160659032087/
  443
1868
-->135.3.40.79     192.168.1.2     6/22/47299
135.3.40.79     192.168.1.2     6/22/47299      +    1001 32694/160659032088/
  443
2080
-->135.3.40.79     69.141.231.173  6/22/47299
73.185.184.1    255.255.255.255 17/68/67        -    1004 3/988       0/0
```

display slamon

Overview

If you are a service provider and you are guaranteeing certain minimum service levels through a Service Level Agreement (SLA), you can activate the ″Enable SLA Probe″ option for LAN-LAN tunnels.

For information on this feature, please refer to the *LAN-LAN Tunnels* chapter in the *SMS Policy Guide*.

Format

The format of the `display slamon` command is:

`display slamon <zone>`

where `<zone>` is the Brick zone ruleset on the Initiator Brick where the SLA probe has been enabled.

Explanation

The command output shows the Probe Source and Destination VBAs as well as the number of probes sent by the source and received by the destination.

Note that while there are two endpoints in a LAN-LAN tunnel, the display slamon command will only provide results when executed on the Initiator Brick (usually Endpoint 1) in the tunnel.

Example

The following is an example of the `display slamon` comand:

```
test_brick> display slamon vpnzone
Probe ID        Probe Src        Probe Dst     Sent Recvd    MaxRTT
-------- --------------- --------------- ---- ----- ------
   10710       10.20.10.133      10.20.10.77      8    8     1
```

□

display status

Overview

The `display status` command displays current operational information about the Brick.

Format

The format of the `display status` command is:

```
display status
```

Explanation

The display output shows:

- The alarm card version
- The operational status of the power supply unit(s)
- The operational status of the fan unit(s)
- The chassis ambient temperature and CPU margin temperature (only displayed for Model 700R2 and 1200R3 Bricks)
- The BIOS version and BMC version (only displayed for Model 700R2 and 1200R3 Bricks)
- The IPMI test status (only displayed for Model 700R2 and 1200R3 Bricks)

To use this command, you must log into the Brick and execute it directly from the Brick console.

Example

The following is an example `display status` command:

```
Alarm card version 3.3
Power supply #1 OK
Power supply #2 OK
Fan#1: 3210     Fan#3: 3060     Fan#5: 3090
Fan#2: 3120     Fan#4: 3150     Fan#6: 3150
6 out of 6 fans working properly
Chassis ambient temp = 26C. CPU temperature margin = 55C
BIOS version ARIBV200, BMC version B700N060/BR700C06
IPMI test passed
```

□

display time

Overview

The `display time` command displays the current time on the Brick relative to Greenwich Mean Time (GMT).

Format

The format of the `display time` command is:

```
display time
```

Explanation

When the Brick boots, the SMS machine sends the Brick its own time indexed to the GMT. The Brick requests an update every hour to ensure that the pair's time is synchronized to the second.

Example

The following is an example `display time` command:

```
test_brick> display time
The current time is Jun 14 2002, 19:10:02 GMT
Last booted at Jun 14 2002, 14:31:24. Active since
Jun 14 2002, 14:31:24.
SMS is at -4:00 from GMT.
Brick local time is -4:00 from GMT.
```

□

display version

Overview

The `display version` command displays the Brick software version, type of VPN card(s), serial number, and two bits of configuration information (starcast processing flag and mac move flag).

Format

The format of the `display version` command is:

```
display version
```

Example

The following is an example `display version` command:

```
Softw vers: 9.1.249; VPN card = 1 EACv3; Serial number:
  517D0447
Status: active; Starcast zone: n; MAC moves: n
```

□

display vlans

Overview

The `display vlans` command displays a list of all VLANs on the Brick.

Format

The format of the `display time` command is:

```
display vlans
```

Explanation

The `display vlans` command lists all VLANs with their IP address, subnet mask, and member ports, including default ports.

Example

The following is an example `display vlans` command:

```
hr-brick1>display vlans
VLAN IP Address  Mask            Ports
1     10.10.1.1   255.255.255.0    1
2     10.10.67.2  255.255.255.0    1-2
100   10.10.44.2  255.255.255.0    0-2
a.7              255.255.255.192  3
```

□

display zonetable

Overview

The `display zonetable` command prints the Policy Assignment Table of the Brick, including the load date, the signing date and the signing administrator.

Format

The format of the `display zonetable` command is:

display zonetable

Explanation

For each Brick, any applied Brick zone ruleset is associated with one or more physical ports. A ruleset can be assigned to more than one port on the same brick, or on different Bricks.

This information is then stored in the Policy Assignment Table, which the Brick uses to determine which security policy to apply to incoming packets. The Signer at the bottom of the display is the last administrator who loaded the Policy Assignment Table.

Example

The following is an example `display zonetable` command:

```
hr-brick1>display zonetable

Ifc     Address Range    Zone   VLAN  VBA
e0     *                *        *
e1     *                *        *
e2     *                *        *
e3     *                *        *
lcl  firewall
Load Date: Thu June 21 11:26:18 2002
Sign Date: Fri Jue 15 16:17:56 2002
Signer:    Admin
Softw vers: 7.2.444; VPN card n; Status: active
Starcast zone: n; MAC moves: y
```

□

11 Alcatel-Lucent *VPN Firewall Brick*™ Security Appliance Clear Commands

Overview

Purpose

This chapter provides information to perform the following:

1. Issue `clear` and `delete` commands with the correct syntax.
2. Interpret the results of a `clear` or **delete** command.

Overview

Use the Brick `clear` and **delete** commands to delete one or more sessions from a specified zone.

Contents

clear session

Overview

The `clear session` command clears one or more sessions in a specified zone.

Format

The format of the `clear session` command is:

`clear session <zone> [s=source ip] [d=dest ip] [p=protocol/destpt/srcpt]`

Explanation

Multiple sessions may be cleared by omitting one or two of the optional *s*, *d*, or *p* fields, or by using an asterisk (*) to match anything.

At least one of the *s* , *d*, or *p* fields must be entered with a specific value (not an asterisk).

Example

The following is an example of the `clear session` command:

```
hr-brick1>clear session nocgwzone s=125.92.38.40
```

□

clear bpg

Overview

The `clear bpg` command clears one or more DPAT bindings that have been established for transfer of BSR Packet Gateway (BPG) RTP packets in a specified zone.

Format

The format of the `clear bpg` command is:

`clear bpg` *<zone> [b=<fBSR-ip>] [s=<SGSN-ip>] [t=<SGSN-TID>]*

Explanation

<zone> specifies a Brick zone and is required.

The *[b=<fBSR-ip>]* option can be entered to clear DPAT bindings between the BPG (Brick device) and a specific BSR.

The *[s=<SGSN-ip>]* and *[t=<SGSN-TID>]* can be entered to clear DPAT bindings associated with a specific Serving GPRS Node (SGSN) and SGSN tunnel endpoint identifier.

An asterisk (*) can be used as a wildcard character with the `b`, `s`, or `t` options to represent any/all values.

Example

The following are examples of the `clear bpg` command:

```
hr-brick1>clear bpg nocgwzone b=* s=* t=*
```

The above command clears all DPAT bindings associated with the *nocgwzone* Brick zone.

```
hr-brick1>clear bpg nocgwzone b=135.112.247.119 s=0 t=0
```

The above command clears all DPAT bindings for a specific BSR associated with the *nocgwzone* Brick zone.

□

clear bvg

Overview

The `clear bvg` command clears one or more DPAT bindings that have been established for transfer of BSR Voice Gateway (BVG) RTP packets in a specified zone.

Format

The format of the `clear bvg` command is:

`clear bvg` *<zone> [b=<fBSR-ip>] [m=<MSC-ip>] [p=<MSC-port>]*

Explanation

<zone> specifies a Brick zone and is required.

The *[b=<fBSR-ip>]* option can be entered to clear DPAT bindings between the BVG (Brick device) and a specific BSR.

The *[m=<MSC-ip>]* and *[p=<MSC-port>]* can be entered to clear DPAT bindings associated with a specific Mobile Switching Center(MSC) and MSC interface.

An asterisk (*) can be used as a wildcard character with the `b`, `s`, or `t` options to represent any/all values.

Examples

The following are examples of the `clear bvg` command:

```
hr-brick1>clear bvg nocgwzone b=* m=* p=*
```

The above command clears all DPAT bindings associated with the *nocgwzone* Brick zone.

```
hr-brick1>clear bvg nocgwzone b=135.112.247.119 m=0 p=0
```

The above command clears all DPAT bindings for a specific BSR associated with the *nocgwzone* Brick zone.

□

clear noe

Overview

The `clear noe` command clears a single IP address entry associated with an RTP session between the IP touch phone(s) and call server(s) during VoIP communications with the Brick serving as an Applications Layer Gateway (ALG), in a specific Brick zone.

Format

The format of the `clear noe` command is:

`clear noe <zone>`

Example

The following is an example of the `clear noe` command:

```
hr-brick1> clear noe administrativezone-noe 192.11.153.66

1 noe entry deleted
```

clear noemac

Overview

The `clear noemac` command clears the MAC address corresponding to the mapping index entry of an endpoint (IP phone device) in a specific Brick zone. This command is used when a mapped IP phone device is deleted permanently. The mapping index entry used for the deleted IP phone device MAC address can be reused.

Format

The format of the `clear noemac` command is:

`clear noemac <zone> <index>`

clear noemap

Overview

The `clear noemap` command clears the NOE mapping index entry of an endpoint (IP phone device) in a specific Brick zone.

Format

The format of the `clear noemap` command is:

`clear noemap <zone> <ip-address>`

Explanation

If this command is performed for an IP phone device and it is later reconnected, the index entry chosen for the MAC address may be different, requiring the IP phone to be reconfigured on the call server.

□

delete noefile

Overview

The `delete noefile` command deletes the NOE mapping index table file of NATed endpoints.

Format

The format of the `delete noefile` command is:

`delete noefile <noemap.txt>`

12 Alcatel-Lucent *VPN Firewall Brick*™ Security Appliance Trace Commands

Overview

Purpose

This chapter provides information to perform the following:

1. Issue `trace` commands with the correct syntax.
2. Interpret the results of a `trace` command.

Overview

Use the `trace` commands to control the filtering and display of real-time log records and incoming and outgoing packets as they are processed by the Brick.

For example, you can create a filter to display packets that originate from a specific IP address or zone. Or, a filter can be created to display log records that logged dropped packets only.

> **Important!** *PERFORMANCE CONSIDERATIONS* For performance reasons, it is recommended that the `trace audit on` and `trace packet on` commands be issued one at a time. If both commands are issued at the same time, network performance may be severely hampered.
>
> `trace packet` is not for use in a live network. The use of trace packet may cause the Brick CPU to increase and may result in drop packets. Trace packet should be used in a controlled environment such as a maintenance window.

The commands in this chapter are listed in alphabetical order. For each command, the chapter provides an overview, a description and explanation of the format, and examples.

To see a complete listing of the trace commands online, enter `help trace` at the command prompt.

Contents

trace arp

Overview

The `trace arp` command turns on or off the tracing of Address Resolution Protocol (ARP) packets on the brick console.

Format

The format of the `trace arp on` command is:

`trace arp <on|off> [yes|no}`

where:

The *<on|off>* argument turns trace arp on or off. Issued without the on or off argument, trace arp toggles the current state.

The optional *[yes|no]* argument refers to echo of traced packets to the screen.

Explanation

The `trace arp` command enables the administrator to see Address Resolution Protocol requests arriving at the Brick ports.

Example

The following is an example `trace arp` command:

```
trace arp on
tracing of arp enabled
```

□

trace audit delete

Overview

The `trace audit delete` command deletes a filter that was defined with the `trace audit filter` command.

Format

The format of the `trace audit delete` command is:

`trace audit delete <id>`

where:

- *<id>* is the number of the filter you wish to delete. To see the list of filters that can be deleted, *issue the* `trace audit list` *command*.

Explanation

If the filter does not exist, no action is taken.

Example

The following is an example `trace audit delete` command:

```
hr-brick1>trace audit delete 1

filter 1 deleted.
```

□

trace audit filter

Overview

The `trace audit filter` command allows you to define a filter that will display log records that match only the fields you specified in the filter.

A filter is defined by a filter list of six possible values:

- Zone
- Source IP address
- Destination IP address
- Protocol
- Direction
- Action

After defining a filter, enable the filter and start viewing the records by issuing the `trace audit on` command. Ensure that the `set printing` command is set to `on`.

Format

The format of the `trace audit filter` command is:
`trace audit filter <filter_list>`

where *<filter_list>* is one or more of the following parameters:

Parameter	Explanation	Example
`z`	Zone name	z=administrativezone
`s`	Source IP address	s=104.23.32.123
`d`	Destination IP address	d=123.34.134.2
`p`	Protocol/dst-port/src-port	p=17/138/1137
`r`	Direction (″in″ or ″out″)	r=in
`a`	Action (″drop″, ″pass″ or ″proxy″)	a=drop

Explanation

A wildcard (*) matches everything for the specified parameter. Parameters that are not defined are assumed to be a wildcard (*).

There is a limit of 20 audit filters. In addition, the zone name can be abbreviated and is completed from the list of known zones after the command is entered.

Example

The following is an example `trace audit filter` command:

```
hr-brick1>trace audit filter z=adm
filter 1 defined: z=administrativezone s=* d=* p=*/*/* r=* a=*
```

□

trace audit list

Overview

The `trace audit list` command displays the currently defined filters, as defined with the `trace audit filter` command.

Format

The format of the `trace audit list` command is:

```
trace audit list
```

Explanation

This command is particularly useful to identify the filters when modifying, deleting, enabling, or disabling a filter.

In the output, the ″E″ column specifies whether the filter is enabled or not. The other columns are defined in the `trace audit filter` command description.

Example

The following is an example `trace audit list` command:

```
hr-brick1>trace audit list
# E Zone              Source       Destination Protocol Dir A
1 Y administrativezone*            *           */*/*    i   *
2 N *                 104.23.34.24 *           */*/*    *   *
```

□

trace audit modify

Overview

The trace `audit modify` command modifies a filter that was defined with the `trace audit filter` command.

All six possible values of a filter list — zone, source IP address, destination IP address, protocol, direction, and action, can be modified.

Format

The format of the `trace audit modify` command is:

`trace audit modify <id> <filter_list>`

where:

- *<id>* is the number of the filter you wish to modify. To see the list of filters that can be modified, *issue the* `trace audit list` *command*.
- *<filter_list>* is one or more of the following parameters:

Parameter	Explanation	Example
z	Zone name	z=administrativezone
s	Source IP address	s=104.23.32.123
d	Destination IP address	d=123.34.134.2
p	Protocol/dst-port/src-port	p=17/138/1137
r	Direction (″in″ or ″out″)	r=in
a	Action (″drop″, ″pass″ or ″proxy″)	a=drop

Explanation

If a parameter is present, then it replaces the value in the definition. If the parameter is not present, then the definition is unchanged. Specifying a wildcard matches everything for the specified parameter.

In addition, the zone name can be abbreviated and is completed from the list of known zones after the command is entered.

Example

The following is an example `trace audit modify` command:

```
hr-brick1>trace audit modify 1 r=in a=*

filter 1 modified.
```

trace audit off

Overview

The `trace audit off` command stops the display of audit records for all filters or a particular filter.

Before a filter can be disabled, it must have been enabled with the `trace audit on` command.

Format

The format of the `trace audit off` command is:

`trace audit off [<id> |a |p]`

where:

- *<id>* is the number of the filter you wish to disable. To see the list of filters that can be disabled, *issue the* `trace audit list` *command*. If an <id> is not present, then all defined session filters are disabled.
- *a* disables the tracing of all Administrative Events audit records.
- *p* disables the tracing of the Proactive Monitoring records.

Explanation

Note that this command does not remove the filter but just stops the display of the audit records.

Example

The following is an example `trace audit off` command:

```
hr-brick1>trace audit off

all filters disabled.
```

□

trace audit on

Overview

The `trace audit on` command enables the filter and starts the display of the audit records. The filter can be disabled, and the display of the audit records stopped, with the `trace audit off` command.

Due to performance reasons, the `trace audit on` and `trace packet on` commands should be used separately. If a trace packet filter has been enabled and you want to enable a trace audit filter, issue the `trace packet off` command.

Format

The format of the `trace audit on` command is:

`trace audit on` *`[<id> |a |p]`*

where:

- *<id>* is the number of the filter you wish to enable. To see the list of filters that can be enabled, *issue the* `trace audit list` *command*. If an <id> is not present, then all defined session filters are enabled.
- *a* permits the tracing of all Administrative Events audit records.
- *p* permits the tracing of the Proactive Monitoring records.

Explanation

The formats for audit records are the raw formats dumped directly to the logger. Notice that each line is preceded by an ″A>>″ to identify it as an audit record.

Example

The following is an example `trace audit on` command:

```
hr-brick1>trace audit on 1

filter 1 enabled.
A>>0:administrativezone:OUT:875c2628:875c26ff:17:138:138:Drop:ether0::0:65535:
A>>0:administrativezone:OUT:875c2614:875c26ff:17:137:137:Drop:ether0::0:65535:
A>>1:administrativezone:OUT:875c2628:875c26ff:17:138:138:1:0:233:0:0
A>>1:administrativezone:OUT:875c2614:875c26ff:17:137:137:2:0:156:0:0
```

□

trace heartbeats

Overview

The `trace heartbeats` command turns on or off the tracing of heartbeats that are issued to check the link integrity of Brick interfaces (ports).

Format

The format of the `trace heartbeats` command is:

`trace heartbeats <on|off> [[i=<interface_number>] [f=l] [r=i|o]`

where:

The *<on|off>* argument turns `trace heartbeats` on or off. Issued without the on or off argument, `trace heartbeats` toggles the current state.

[i=<interface_number>] is a decimal number specifying the interface (port) on the Brick, from 0 to the highest interface number on the device. If no *<interface number>* is specified, then heartbeats from all interfaces will be logged.

[f=l] causes the heartbeats to be logged to the Administrative Events log on the SMS. If this option is not specified, the output goes to the Brick console.

Either the *[i=<interface_number>]* or *[f=l]* option must be specified.

[r=i|o] allows the command to be restricted to showing either in or out heartbeats. If this option is not specified, then both directions are shown.

Explanation

As with the `trace packet` commands, logging out of the Brick console will disable any active heartbeat trace.

Example

The following is an example `trace heartbeats` command:

```
hr-brick1> trace heartbeat on i=0
Trace started
hr-brick1> Mar 6 2008, 16:31:40: send heartbeat 0
Mar 6 2008, 16:31:40: send heartbeat 0
Mar 6 2008, 16:31:40: send heartbeat 0
Mar 6 2008, 16:31:41: send heartbeat 0
Mar 6 2008, 16:31:41: send heartbeat 0
Mar 6 2008, 16:31:41: receive heartbeat link = 0,
Mar 6 2008, 16:31:41: send heartbeat 0
Mar 6 2008, 16:31:41: send heartbeat 0
Mar 6 2008, 16:31:41: send heartbeat 0
Mar 6 2008, 16:31:41: send heartbeat 0
Mar 6 2008, 16:31:41: send heartbeat 0
Mar 6 2008, 16:31:41: send heartbeat 0
Mar 6 2008, 16:31:41: send heartbeat 0
Mar 6 2008, 16:31:42: send heartbeat 0
Mar 6 2008, 16:31:42: receive heartbeat link = 0,
Mar 6 2008, 16:31:42: send heartbeat 0
Mar 6 2008, 16:31:42: send heartbeat 0
Mar 6 2008, 16:31:42: send heartbeat 0
Mar 6 2008, 16:31:42: send heartbeat 0
Mar 6 2008, 16:31:42: send heartbeat 0
Mar 6 2008, 16:31:42: send heartbeat 0
Mar 6 2008, 16:31:42: send heartbeat 0
Mar 6 2008, 16:31:42: send heartbeat 0
```

trace nonip

Overview

The `trace nonip` command enables tracing of all non-IP packets.

Format

The format of the `trace nonip on` command is:

`trace nonip` *`[on|off] [y|n]`*

where:

- The optional second argument [y|n]outputs the contents of the entire packet in hexadecimal format.

Explanation

The `trace nonip` command is used to debug non-IP packet flow issues. Input is shown whether the particular packet is bridged or not.

Example

The following is an example `trace nonip` command for an IPX packet received on port 0.

```
hr-brick1>trace nonip

0 non d=0601882166ad s=0000947545b4 ln=40 dsap=ff ssap=ff
ctl=000601882166ad0000947545b40028ffff002800110000face000000000001
```

□

trace packet delete

Overview

The `trace packet delete` command deletes a filter that was defined with the `trace packet filter` command.

Format

The format of the `trace packet delete` command is:

`trace packet delete <id>`

where:

- *<id>* is the number of the filter you wish to delete. To see the list of filters that can be deleted, *issue the* `trace packet list` *command*.

Example

The following is an example `trace packet delete` command:

```
hr-brick1>trace packet delete 1

filter 1 deleted.
```

□

trace packet filter

Overview

The `trace packet filter` command defines a filter to display incoming and outgoing packets in real-time. The `trace packet filter` command does not display Address Resolution Protocol (ARP) packets. Use the `trace arp` command to trace ARP packets.

A filter is defined by a filter list of six possible values — interface, source IP address, destination IP address, protocol, direction, and format.

After defining a filter, you must enable the filter and start displaying the packets by issuing the `trace packet on` command.

Format

The format of the `trace packet filter` command is:

`trace packet filter` *`<filter_list>`*

where:

- *`<filter_list>`* is one or more of the following parameters:

Parameter	Explanation	Example
i=brick port	Brick port number (0-11) or # for local. If * is specified, the local port is not included.	i=2
s=<source ip/subnet/range>	Source IP address. A subnet/mask can be specified with the IP address (Example: `192.168.1.1/28` A range of IP addresses can also be specified (Example: `192.168.11-192.168.28`	s=104.23.32.123
d=<destination ip/subnet/range>	Destination IP address. A subnet/mask can be specified with the IP address (Example: `192.168.1.1/28` A range of IP addresses can also be specified (Example: `192.168.11-192.168.28`	d=123.34.134.2

Parameter	Explanation	Example
p=IP protocol/dest port(range)/src port(range)	The IP protocol/destination port/source port. A source or destination port range can be specified (Example:	p=17/138/1137
f	Format options (a,l,m, or c). `a`=dumps the hexadecimal form of the binary data of the packets matching the filter on the Brick local and remote consoles. `l`=packages the binary data in audit records and ships them to the SMS. `m`=prints the hardware MAC addresses of the packet and the IP identification field. `c`=prints additional contents of the IP packet based on the protocol.	f=m
r	Direction (″in″ or ″out″)	r=in

Explanation

In command input, an asterisk (*) can be specified as a wildcard character to match all instances of a parameter. In command output, parameters that are not defined are assumed to be a wildcard (*).

For performance reasons, there is a limit of nine packet filters.

Example

The following is an example `trace packet filter` command:

```
hr-brick1>trace packet filter s=192.168.1.0/24
filter 3 defined: i=* s=192.168.1.0/24 d=* p=*/*/* f=* r=*
```

□

trace packet list

Overview

The `trace packet list` command displays the currently defined filters as defined with the `trace packet filter` command.

Format

The format of the `trace packet list` command is:

```
trace packet list
```

Explanation

This command is particularly useful to identify the filters when modifying, deleting, enabling, or disabling a packet filter.

In the output, the ″E″ column specifies whether the filter is enabled or not. The ″IF″ column specifies the Brick port number. The other columns are explained in the `trace packet filter` command description.

Example

The following is an example `trace packet list` command:

```
hr-brick1>trace packet list

# E IF Source       Destination Protocol Format
1 N 0  *            *           */*/*    a
2 N *  104.23.34.24 *           */*/*    1
```

□

trace packet modify

Overview

The `trace packet modify` command modifies a filter that was defined with the `trace packet filter` command.

All six possible values of a filter list — interface, source IP address, destination IP address, protocol, direction, and format can be modified.

Format

The format of the `trace packet modify` command is:

`trace packet modify <id> <filter_list>`

where:

- *<id>* is the number of the filter you wish to modify. To see the list of filters that can be modified, issue the `trace packet list` command.
- *<filter_list>* is one or more of the following parameters:

Parameter	Explanation	Example
i	Brick port number (0-11) or # for local. If * is specified, the local port is not included.	i=2
s	Source IP address	s=104.23.32.123
d	Destination IP address	d=123.34.134.2
p	Protocol/dst-port/src-port	p=17/138/1137
r	Direction (″in″ or ″out″)	r=in
f	Format options (a,l,m, or c). a=dumps the hexadecimal form of the binary data of the packets matching the filter on the Brick local and remote consoles. l=packages the binary data in audit records and ships them to the LSMS. m=prints the hardware MAC addresses of the packet and the IP identification field. c=prints additional contents of the IP packet based on the protocol.	f=m

Explanation

If a parameter is present, then it replaces the value in the definition. If the parameter is not present, then the definition is unchanged.

Specifying a wildcard matches everything for the specified parameter.

Example

The following is an example `trace packet modify` command:

```
hr-brick1>trace packet modify 1 r=in f=*

filter 1 modified.
```

□

trace packet off

Overview

The `trace packet off` command disables and stops the display of audit records for all filters or a particular filter.

Before a filter can be disabled, it must have been enabled with the `trace packet on` command.

Format

The format of the `trace packet off` command is:

`trace packet off [<id>]`

where:

- *<id>* is the number of the filter you wish to disable. To see the list of filters that can be disabled, *issue the* `trace packet list` *command*. If an <id> is not present, then all packet tracing is disabled.

Explanation

Note that this command does not remove the filter but just turns off the real-time printing of the incoming and outgoing packets.

Example

The following is an example `trace packet off` command:

```
hr-brick1>trace packet off

all filters disabled.
```

□

trace packet on

Overview

The `trace packet on` command enables a filter created with the `trace packet filter` command and starts the display of the packets. The filter can be disabled and the display of the packets can be stopped with the `trace packet off` command.

For performance reasons, the `trace packet on` and `trace audit on` commands should be used separately. If a trace audit filter has been enabled and you want to enable a trace packet filter, issue the `trace audit off` command.

Format

The format of the `trace packet on` command is:

`trace packet on` *`[<id>]`*

where:

- *<id>* is the number of the filter you wish to enable. To see the list of filters that can be viewed, *issue the* `trace packet list` *command*. If an <id> is not present, then all filters are enabled.

Explanation

Each line in the output is preceded by an ″Rx#interface#″ or ″Tx#interface#″ to identify it as a packet entering or exiting the specified Brick port.

″Rx#″ means the packet is entering the Brick port and ″Tx#″ means the packet is exiting the Brick port.

The number is the Brick port. The next two values are the source and destination addresses respectively. The next item shows the service (protocol/dst-port/src-port) followed by the packet size (length).

For TCP packets, four additional items are printed: tcp-flags (″A″ - ack number present; ″R″ - reset; ″S″ - syn; ″F″ -fin), the sequence number, the TCP length, and the acknowledgement number.

If the ″m″ option is specified, the next line contains the MAC addresses of the source and destination, respectively, with the IP identification number.

If the ″c″ option is specified, the first 20 bytes of the payload are displayed in the network order along with its ASCII representation. See “trace packet filter” (p. 12-16) of “trace packet modify” (p. 12-19) for a complete explanation of the available parameters and options.

Note that in TCP and UDP packet records, the content begins with their payload. For all other types of protocols, the content begins with the protocol header. When the payload length is zero, no content is shown.

The output distinguishes which part of the record is the source versus destination port (for TCP, UDP, and SCTP) and type versus code (for ICMP).

Example

The following is an example `trace packet on` command:

```
hr_brick> trace packet on
all filters enabled.
hr_brick> Tx0 192.168.1.4 192.168.1.2 TCP/d=9000/s=19610 88 A:40852763
61:48:1270391053
Rx0 192.168.1.2 192.168.1.4 TCP/d=19610/s=9000 40 A:1270391053:0:4085276409
Tx0 192.168.1.4 192.168.1.2 TCP/d=9000/s=19610 72 A:4085276409:32:12703910
53
Rx0 192.168.1.2 192.168.1.4 TCP/d=19610/s=9000 42 A:1270391053:2:4085276441
Tx0 192.168.1.4 192.168.1.2 TCP/d=9000/s=19610 40 A:4085276441:0:1270391055
Tx0 192.168.1.4 192.168.1.2 TCP/d=9000/s=19610 72 A:40852764 41:32:1270391055
Rx0 192.168.1.2 192.168.1.4 TCP/d=19610/s=9000 40 A:1270391055:0:4085276473
Tx0 192.168.1.4 192.168.1.2 TCP/d=9000/s=19610 72 A:4085276473:32:1270391055
Rx0 192.168.1.2 192.168.1.4 TCP/d=19610/s=9000 42 A:1270391055:2:4085276505
Tx0 192.168.1.4 192.168.1.2 TCP/d=9000/s=19610 40 A:4085276505:0:1270391057
Tx0 192.168.1.4 192.168.1.2 TCP/d=900/s=19615 44 S:1087262852:0:0
Rx0 192.168.1.2 192.168.1.4 TCP/d=19615/s=900 44 AS:2044059578:0:1087262853
Tx0 192.168.1.4 192.168.1.2 TCP/d=900/s=19615 40 A:1087262853:0:2044059579
Tx0 192.168.1.4 192.168.1.2 TCP/d=900/s=19615 59 A:1087262853:19:2044059579
Tx0 192.168.1.4 192.168.1.2 TCP/d=900/s=19615 46 A:1087262872:6:2044059579
Rx0 192.168.1.2 192.168.1.4 TCP/d=19615/s=900 40 A:2044059579:0:1087262878
Tx0 192.168.1.4 192.168.1.2 TCP/d=9000/s=19610 264 A:4085276505:224:1270391057
Rx0 192.168.1.2 192.168.1.4 TCP/d=19610/s=9000 40 A:1270391057:0:4085276729
Rx0 192.168.1.2 192.168.1.4 TCP/d=19615/s=900 40 AF:2044059579:0:1087262878
Rx0 192.168.1.2 192.168.1.4 TCP/d=19615/s=900 40 AR:2044059580:0:1087262878
Tx0 192.168.1.4 192.168.1.2 TCP/d=900/s=19615 40 A:1087262878:0:2044059580
Tx0 192.168.1.4 192.168.1.2 TCP/d=900/s=19615 45 A:1087262878:5:2044059580
Rx0 192.168.1.2 192.168.1.4 TCP/d=19615/s=900 40 R:2044059580:0:2044059580
Rx0 192.168.1.2 192.168.1.4 TCP/d=19615/s=900 40 R:2044059580:0:2044059580
Tx0 192.168.1.4 192.168.1.2 TCP/d=9000/s=19610 168 A:4085276729:128:1270391057
Rx0 192.168.1.2 192.168.1.4 TCP/d=19610/s=9000 40 A:1270391057:0:4085276857
Tx0 192.168.1.4 192.168.1.2 TCP/d=9000/s=19610 72 A:4085276857:32:1270391057
Rx0 192.168.1.2 192.168.1.4 TCP/d=19610/s=9000 42 A:1270391057:2:4085276889
Tx0 192.168.1.4 192.168.1.2 TCP/d=9000/s=19610 40 A:4085276889:0:1270391059
Tx0 192.168.1.4 192.168.1.2 TCP/d=9000/s=19610 72 A:4085276889:32:1270391059
Rx0 192.168.1.2 192.168.1.4 TCP/d=19610/s=9000 42 A:1270391059:2:4085276921
Tx0 192.168.1.4 192.168.1.2 TCP/d=9000/s=19610 40 A:4085276921:0:1270391061
Rx0 192.168.1.2 192.168.1.4 ICMP/t=8/c=0 60
Tx0 192.168.1.4 192.168.1.2 ICMP/t=0/c=0 60
Tx0 192.168.1.4 192.168.1.2 TCP/d=9000/s=19610 248 A:4085276921:208:1270391061
Rx0 192.168.1.2 192.168.1.4 TCP/d=19610/s=9000 40 A:1270391061:0:4085277129
Tx0 192.168.1.4 192.168.1.2 TCP/d=9000/s=19610 72 A:4085277129:32:1270391061
Rx0 192.168.1.2 192.168.1.4 TCP/d=19610/s=9000 42 A:1270391061:2:4085277161
Tx0 192.168.1.4 192.168.1.2 TCP/d=9000/s=19610 40 A:4085277161:0:1270391063
Rx0 192.168.1.2 192.168.1.4 ICMP/t=8/c=0 60
Tx0 192.168.1.4 192.168.1.2 ICMP/t=0/c=0 60
```

Important! The output of this command is limited to 100 records per second to prevent loss of control of the console as well as severe overload.

If activating this command results in an unmanageable flood of trace records, pressing ″CTRL C″ will halt the output. It is equivalent to typing ″set printing off″. To re-enable tracing, type ″set printing on″.

□

13 Alcatel-Lucent *VPN Firewall Brick*™ Security Appliance Set Commands

Overview

Purpose

This chapter provides information to perform the following:

1. Issue `set` commands with the correct syntax.
2. Interpret the results of a `set` command.

Overview

Use the `set` commands to control settings that govern the viewing of the output.

For example, you can turn on or off the viewing of real-time packets and log records as the Brick is processing them. Other commands allow you to set the number of lines that are displayed on the screen and the baud rate of the modem.

The commands in this chapter are listed in alphabetical order. For each command, the chapter provides an overview, a description and explanation of the format, and examples.

To see a complete listing of the display commands online, enter **help set** at the command prompt.

Contents

set baudrate

Overview

The `set baudrate` command displays or sets the baudrate of the Brick serial port. The default is 115kb/seconds.

It is recommended that this command be issued only from a monitor and keyboard that are directly plugged into the ports of a Brick.

Format

The format of the `set baudrate` command is:

`set baudrate [<number>]`

where:

- number must be a positive decimal number and a legal serial baud rate.

Explanation

If the baud rate needs to be changed and you are accessing a Brick through a remote connection, this command should be issued before a remote login session is attempted.

If the `set baudrate` command is issued without an argument, then the current modem baudrate is displayed. If an argument is specified, the baudrate will be reset to the new rate.

Example

The following are example `set baudrate` commands:

```
hr-brick1>set baudrate
baudrate = 19200
hr-brick1>set baudrate 9600
baudrate = 9600
```

□

set consolelogsize

Overview

The `set consolelogsize` command temporarily overrides the default 10K byte Brick flash memory limit for Brick console log data (system messages, Brick CLI command input/output).

Format

The format of the `set consolelogsize` command is:

`set consolelogsize <n>`

where:

- *<n>* is is the temporary console log file size limit, in bytes.

Explanation

The Brick console log file size reverts back to the default 10K byte limit after the Brick reboots.

Example

The following is an example `set consolelogsize` command:

```
hr-brick1>set consolelogsize 12000
```

□

set errors

Overview

The `set errors` command turns on or off a Brick periodic reporting of error conditions, depending on the argument supplied, or the current state of error reporting if no argument is supplied.

Format

The format of the `set errors` command is:

`set errors` [on|off]

Explanation

Issued with no argument, the set errors command toggles the current state. So, if error reporting is on, issuing set errors with no argument will turn it off.

Example

The following are example `set errors` commands:

```
set errors
error trace setting: on
set errors off
error trace setting off
```

□

set printing

Overview

The `set printing` command enables or disables the real-time display of packets or log records.

Before this command has any effect, a filter to display packets or log records must have been defined and enabled. See `trace packet filter` and `trace audit filter` commands respectively.

Format

The format of the `set printing` command is:

`set printing` *`[on | off]`*

where:

- *`on`* enables the real-time display of log records or packets. This is the initial default setting. When *`on`* is specified, it is equivalent to typing the `<Esc>` key.
- off disables the real-time display of log records or packets. When *`off`* is specified, it is equivalent to entering `<Ctrl>C`.

Explanation

If the `set printing` command is issued without an argument, then the status displays the current setting (i.e., either ″on″ or ″off″).

Example

The following are example `set printing` commands:

```
hr-brick1>set printing
printing = off

hr-brick1>set printing on
printing set on.
```

□

set screensize

Overview

The `set screensize` command sets the number of lines in which the output is displayed. This command has no effect on the display of real-time data, such as packet and log record traces, as defined with `trace packet filter` and `trace audit filter` commands.

If the number of lines printed from a normal command exceeds the actual screensize, printing pauses until a key is pressed.

Format

The format of the `set screensize` command is:

`set screensize [<lines>]`

where:

- *<lines>* must be a decimal number greater or equal to 0. Setting the screensize to 0 lines causes an infinite screensize (no scroll mode).

Explanation

If `set screensize` command is issued without a lines argument, then the current value is displayed.

The initial value is 23 - leaving the 24th line for the status line (″Enter any key to continue:″).

Example

The following are example `set screensize` commands:

```
hr-brick1>set screensize
screensize = 23

hr-brick1>set screensize 0
screensize = 0 (no scroll mode)
```

□

set throttle

Overview

The `set throttle` command sets the rate at which log error messages are generated.

This command is especially useful to slow down the generation of error messages if voluminous error messages are creating a Denial-of-Service attack situation.

Format

The format of the `set throttle` command is:

`set throttle <time_period>`

where:

- *<time_period>* is any positive whole number (1 or greater). It signifies the time period between messages in seconds.

Explanation

Throttling error messages may prevent an attacker from creating a ″denial of service″ on the SMS in order to mask other harmful or potentially damaging activity.

For example, if repeated unauthorized connection attempts flood the SMS, throttling would reduce the error messages for the time period that is specified.

Example

The following are example `set throttle` commands:

```
hr-brick1>set throttle 10
message throttle set to 10 seconds.
```

□

14 Alcatel-Lucent *VPN Firewall Brick*™ Security Appliance General Commands

Overview

Purpose

Use the general commands to log into a Brick, refresh MAC and ARP tables, send modem commands, reboot a Brick, and other functions.

The commands in this chapter are listed in alphabetical order. For each command, the chapter provides an overview, a description and explanation of the format, and examples.

This chapter provides information to perform the following:

- Issue miscellaneous commands with the correct syntax.
- Interpret the results of a command.

Contents

bootstrap

Overview

The `bootstrap` command loads initialization information from the serial port. This information includes the certificate that is required to establish secure communication between the Brick and the SMS, as well as network configuration information such as VLANs, IP addresses, static routes to reach the SMS, and other information such as failover configuration.

Format

The format of the `bootstrap` command is:

```
boostrap <password>
```

Explanation

Before running this command, the Brick must be in factory ship state (refer to the `initialize flash` command description).

The data format is generated using the SMS **Make Brick Boot Media > Make a serial port boot image** selection. This file is encrypted using the password you enter in the GUI, and decrypted using that same password on the `bootstrap` command.

Paste the file generated from the SMS into the serial port program to transfer to the Brick. Make sure that you include the `!BEGIN!` and `!END!` in the text that has been cut and pasted.

In some cases, you may receive the error `Serial port overrun. Reduce speed and retry.` In that case, reduce the speed of the serial port down to 9600 baud and retry the command (refer to the `set baudrate` command description).

Example

The following is an example `bootstrap` command:

```
opts_brick> bootstrap showme123
OK. Waiting for config file on serial port...(^D to abort).
```

□

failover yield

Overview

The `failover yield` command initiates failover of a Brick failover pair from the Brick CLI.

Format

The format of the `failover yield` command is:

```
failover yield [force]
```

where the [force] option overrides the Halt All Traffic If Audit Fails setting.

Explanation

The `failover yield` command, when issued from the active Brick, switches the Brick to standby mode. If the **Halt All Traffic If Audit Fails** checkbox on the Brick Editor Options tab is set, and log events would be lost, the Brick will not switch. The optional force parameter will override this reluctance. The `failover yield force` command is the equivalent of the `Initiate Failover` command issued from the **Utilities** **Brick** menu in the SMS Navigator window.

Example

The following is an example `failover yield` command:

```
brick_45> failover yield
Enter Ôy' to confirm failover (`n' to cancel):
invoking failover...
```

□

help

Overview

The `help`command, when it is entered without an argument, provides:

- An explanation of general command syntax conventions for the Brick CLI command set
- A general description of the Brick CLI **display**, **trace**, and **set** command sets
- A listing and brief description of all commands that are described in this chapter
- A listing and brief description of all Brick CLI commands.

The `help trace` command provides a listing and brief description of all `trace` commands.

Format

The format of the `help` command is either:

```
help
```

or

```
help trace
```

Explanation

The `help trace` command provides an online listing of all `trace` commands that can be entered to a Brick.

Examples

The following is an example of the `help` command:

```
hr-brick1> help
Most keywords, zonenames and commands can be automatically completed
by <space>, <tab> and <return> keys.  Furthermore, the <tab> key can
be used to cycle through the legitimate tokens at the current position.
The 'display' commands generally print information about tables,
policies, and sessions.  The 'trace' command permits the tracing of
either audit records or packets. The 'set' command permits the setting
and viewing of the screensize, the remote port baudrate, and the
toggling of trace related printing.

help -- prints list of commands
help trace -- prints detailed help for trace cmd
logout -- logout from remote port
repeat -- repeat the previous command
refresh <table> <address> -- refresh brick's mac or (an address in) arp table
bootstrap <key> -- bootstrap the brick
clear session zone [s=srcIp] [d=dstIp] [p=service]
clear bpg zone [b=fbsrIp] [s=sgsnIp] [t=vrncTeid]
clear bvg zone [b=fbsrIp] [m=mscIp] [p=mscPort]
clear noe zone eptIp
display arptable -- display contents of the arp table
display auth -- display user authentication server status
display cachestats <zone> [options]-- shows counts of the zone's session cache
        optionally filtered with options:
        s=<src IP addr>,d=<dst IP addr>,p=<protocol/dst-port/src-port>,
         n=<ruleNumber>,a='pass|drop|proxy'.
        IP addresses may be range or subnet.  Ports may be a range.
        can use f=l to send to admin log on SMS or f=s to show only total counts
display clientpolicy <zone> -- displays the client VPN policy and status
display configuration -- prints the inferno.ini file
display dhcp -- displays current DHCP lease and configuration (if any)
display dpatbpg <zone> -- displays contents of the DPAT BPG table for a zone
display dpatbsr <zone> -- displays contents of the DPAT FBSR table for a zone
display dpatbvg <zone> -- displays contents of the DPAT BVG tables for a zone
display dpatsgsn <zone> -- displays contents of the DPAT SGSN tables for a zone
display dpatsgsn <zone> <tableID>-- displays contents of the DPAT SGSN TEID tabl
es for a zone
display encapsulation <zone> -- display UDP encapsulation info for a zone
display failover -- display failover status
display files <filepath> -- print the names of the file(s)
display hostgroups <zone> -- display a zone's hostgroup definitions
display icm -- display ICM info.
display interfacestatus [<if>] -- display information about an interface's NIC
display lantolantunnels <zone> <name> -- displays LAN-to-LAN tunnel status
Hit any key to continue (q to quit):
display lsms -- print the current LSMS connected (or the last LSMS)
display mactable [<if>] [<vlan>]-- display MAC table for the interface and vlan
display mempools -- print information on 5 memory pools of the brick
display nat <zone> -- display information about NAT tables for a zone
display noe <zone> -- displays information about NOE tables for a zone
display noenat <zone> [<IP-addr>]-- display information about NAT-NOE tables
        for a zone for a specific endpoint specified with the IP-addr
display partitions -- display vlan partitions
display pat <zone> -- display information about PAT tables for a zone
display policy <zone> [full] -- prints the ruleset for the specified zone
display remoteconsole -- display information about the remote console
display routes [<if>] -- display routing information for an interface
display sa <zone> -- display a zone's current security associations
display servicegroups <zone> -- display a zone's servicegroup definitions
display sessions <zone> [<IP-addr>] [options]-- shows the zone's session cache
        optionally filtered by an IP address or with options:
        s=<src IP addr>,d=<dst IP addr>,p=<protocol/dst-port/src-port>,
         n=<ruleNumber>,a='pass|drop|proxy'.
        IP addresses may be range or subnet.  Ports may be a range.
display sip [<zone [search-string]] -- display sip dialogs
display dnscache <zone> -- display dns cache inside a zone
Hit any key to continue (q to quit):
display slamon <zone> -- display SLA probes info for a zone
display time -- print the brick's current time in GMT
display version -- display the brick's version
display vlans -- display vlan ip subnets and port membership
display zonetable -- display the brick's zone assignment table
failover -- display failover status
failover yield [force] -- switch from active to standby
initialize flash -- Brick in use will be returned to factory ship state
ping options -- type 'ping' with no options for ping help
trace arp on [addr] [yes|no] -- trace arps (with optional full packet dump)
trace arp off -- disable arp tracing
trace audit filter <filter-list> -- define an audit filter
trace audit modify <filter-id> <filter-list> -- modify existing audit filter
trace audit delete <filter-id> -- delete the specified filter
trace audit on [<filter-id>|a|p] -- enable all filters or the specified filter
trace audit off [<filter-id>|a|p] -- disable all filters or the specifed filter
trace audit list -- print the list of current audit filters
trace heartbeat on [i=interace]|[f=l] [r=i|o] -- trace heartbeats
trace heartbeat off -- disable heartbeat trace
trace nonip on [yes|no] -- trace non-IP (with optional full packet dump)
trace nonip off -- disable non-IP tracing
Hit any key to continue (q to quit):
trace packet filter <filter-list> -- define a packet filter
trace packet modify <filter-id> <filter-list> -- modify existing packet filter
trace packet delete <filter-id> -- delete the specified filter
trace packet on [<filter-id>] -- enable all filters or the specified filter
trace packet off [<filter-id>] -- disable all filters or the specifed filter
trace packet list -- print the list of current packet filters
traceroute options -- type 'traceroute' with no options for traceroute help
reboot [<msg>] -- reboots the brick with an optional message in the audit log
set screensize [<size>] -- set or display the screensize, default=23
set printing [on|off] -- set or display the tracing print value
set baudrate <rate> -- set or display the baudrate of the remote port
set throttle <interval> -- set number of seconds between identical audit msgs
set errors [on|off] -- set or display the critical error value
modem <cmd> -- send the <cmd> to the brick's modem, use " to enclose blanks
```

The following is an example of the `help trace` command:

```
hr-brick1> help trace
trace audit filter <filter-list> -- defines an audit filter.  The filter list
   consists of the following characters:
   z=<zone-name>,s=<src IP addr>,d=<dst IP addr>,p=<protocol/dst-port/src-port>
   r='in'|'out',a='drop'|'pass'|'proxy'.
   A '*' represents the wild-card as does a missing filter. There is a limit
   of 20 filter definitions.  The zone name, z=, can be abbreviated.
trace audit modify <id> <filter-list> -- modifies the specified filter. See
   above for definition of filter-list.
trace audit delete <id> -- deletes the specified filter.
trace audit on [<id>|a|p] -- enables the printing of the specified filter.
   'a' enables admin records; 'p' enables pro-active monitoring records.
   If no id is given, then all audit filters (except 'a' and 'p') are enabled.
   The output is preceded by 'A>>'.
trace audit off [<id>|a|p] -- disables the printing of the specified filter.
   'a' disables admin records; 'p' disables pro-active monitoring records.
   If no id is given, then all audit filters are disabled, except 'a' and 'p'.
trace audit list -- prints the list of currently defined audit filters.
   There are 8 columns: '#' - filter id; 'E' - enabled?; 'Zone'; 'Source';
   'Destination'; 'Protocol'; 'Dir' - direction ('i' in, 'o' out, '*' both);
   'A' - action ('+' pass, '-' drop, 'y' proxy)
trace packet filter <filter-list> -- defines a packet filter. The filter list
Hit any key to continue (q to quit):
   consists of the following characters:
   i=<interface-nr. | '#' for local>,s=<src IP addr>,d=<dst IP addr>,
   r='in'|'out',p=<protocol/dst-port/src-port>,f='m|c|a|l'.
   A '*' represents the wild-card as does a missing filter. There is a limit
   of 9 filter definitions.  The format filter, f, accepts 'm' for MAC
   address and 'c' for content, 'l' for logging to LSMS and 'a' for logging
   contents to LSMS packet log.
   IP addresses may be range or subnet.  Ports may be a range.
trace packet modify <id> <filter-list> -- modifies the specified filter. See
   above for definition of filter-list.
trace packet delete <id> -- deletes the specified filter.
trace packet on [<id>] -- enables the printing of the specified filter.
   If no id is given, then all packet filters are enabled.  The output is
   signalled by 'P>>', signifying direction IN, or 'P<<' signifying direction
   OUT.  Information printed includes the packet's protocol, length and
   sequence numbers.
trace packet off [<id>] -- disables the printing of the specified filter.
   If no id is given, then all packet filters are disabled.
trace packet list -- prints the list of currently defined packet filters.
   There are 8 columns: '#' - filter id; 'E' - enabled?; 'D' - direction;
   'IF' - interface; 'Source'; 'Destination'; 'Protocol';
   'Format' - 'm' for MAC address,'c' for protocol header or payload content.
```

initialize flash

Overview

The `initialize flash` command is used to restore the flash on the Brick to the factory state by removing the configuration information. It is a necessary prerequisite for doing a serial port bootstrap.

Format

The format of the `initialize flash` command is:

```
initialize flash
```

Explanation

Before this command will run, the Brick device must be disconnected from the SMS.

Examples

The following are examples of the `initialize flash` command:

Example 1: if the Brick is still connected to the SMS

```
hr-brick1> initialize flash
Brick is connected to audit server. Disconnect and try again ....
```

Example 2: if the Brick is disconnected

```
hr-brick1>initialize flash
This will cause the Brick to return to factory state. Proceed (y/n):
Brick will initialize flash and reboot immediately. Are you sure ? (y/n):
```

You must answer `y` both times in the above case for the `initialize flash` command to run.

□

login

Overview

The `login` command enables an Administrator to log on to a particular Brick.

The `login` command is used with local serial port connections or dial-up connections only. No login is required if you are accessing the Brick command line using a locally connected monitor and keyboard. Login using the Remote Brick Console feature is accomplished with the `brickcon` command.

After logging in, any of the commands that are documented in this section can be entered until a `logout` command is issued.

Format

The format of the login command is:

`login` *<remote-password>*

where

- *<remote-password>* is the Remote Password that you entered and verified in the Bricks Editor Options tab Serial Port Access area. See "Create a Serial Port Access Password" (p. A-10) in Appendix A, "Set up a Remote Dial-In Connection" or in Appendix B, "Set up a Direct Serial Port Connection" for details. When entering the Remote Password, it is echoed to the screen in asterisks.

Explanation

Unless a successful remote password is entered, commands cannot be issued to the Brick. When the command succeeds, an log record is written to the Administrative Events log file.

Example

The following is an example `login` command:

```
Signon to brick> login ******
************************************************
** Remote Port Login to Lucent Security Product **
** Type help to get list of commands.           **
************************************************
July 19 2001, 14:43:44 GMT - Login from remote port successful
hr-brick1>
```

logout

Overview

The `logout` command terminates the command line session on a Brick.

After logging out, if you need to log back in, you can enter three carriage returns, one right after another.

Format

The format of the logout command is:

```
logout
```

Explanation

The logout command is used to end the current session and disconnect from the Brick.

Once the command is successfully executed, the message

```
Remote port logging out.... Bye!
```

is displayed.

Example

The following is an example `logout` command:

```
hr-brick1> logout
Feb 26 2001, 14:44:45 GMT - Remote Port Logging out.... Bye!
Signon to brick>
```

□

modem

Overview

The `modem` command sends a Hayes AT command directly to the modem that is attached to the Brick.

It is recommended that this command be issued only from a monitor and keyboard that are directly plugged into the ports of a Brick.

Format

The format of the `modem` command is:

`modem <string>`

where

- *`string`* is a Hayes AT command string (e.g., ATZ, ATDT).

Explanation

If a Hayes AT command needs to be sent to a Brick and you are accessing the Brick through a remote connection, this command should be issued before a remote login session is attempted.

Example

The following is an example `modem` command:

```
hr-brick1>modem ATZ
```

□

ping

Overview

The `ping` command initiates an outbound ping from a Brick to another device.

Format

The format of the `ping`command is:

`ping` *`[options]`* `target_ip`

where *`target_ip`* is the IP address of the target device and the available options are:

- `-t`— ttl
- `-w`— timeout
- `-c`— (for continuous)
- `-n`— number of requests
- `-v`— vlantag
- `-i`— interface# to send ping to
- `-I`— interval between pings (in seconds)
- `-l`— data size (in bytes)
- `-s`— source IP
- `-o`— make packet come *out* of the zone
- `!`— (to bypass rule processing)

Explanation

To execute a ping, you must include the IP address of the target device in the ping command. The Brick will report each success or failure individually in real-time, with round-trip time (in milliseconds), plus an overall success rate as a count and percentage, including average round-trip time.

The `ping` command will default to a 64-byte packet sent every second, for five seconds.

□

reboot

Overview

The reboot command reboots the Brick five seconds after the command is accepted.

After the reboot is complete, a new login session must be initiated.

Format

The format of the reboot command is:

`reboot <"message text">`

where:

- *<"message text">* is an optional message, that, if supplied, appears in the log record of the Administrative Events log file.

Explanation

The `reboot` command is used to restart a Brick.

You may want to reboot a Brick any time you believe the Brick is inoperable and is not responding or resetting itself.

Once the command is successfully executed, the message

`reboot of brick in 5 seconds.`

is displayed.

Example

The following is an example `reboot` command:

```
hr-brick1> reboot "replaced cable on ether2"
reboot of brick in 5 seconds.
```

The log record in the Administrative Events log would then look like:

`4:b:hr-brick1:182147:13:Remote request-"replaced cable on ether2"`

□

refresh

Overview

The `refresh` command forces the Brick to refresh the specified Media Access Control (MAC) table or Address Resolution Protocol (ARP) table.

MAC table particulars

The MAC table tracks the MAC addresses of all MAC elements that are associated with each network interface of a Brick.

ARP table particulars

Every time the Brick needs to resolve an IP address, an ARP request is issued and an entry is written to the ARP table.

Format

For MAC table refreshes:

```
refresh mac
```

For ARP table refreshes:

```
refresh arp [IPADDRESS]
```

where *`[IPADDRESS]`* is a specific IP address to be refreshed in the ARP table retained by the Brick. (This argument is optional.)

Explanation

The `refresh` command is used to refresh the MAC or ARP tables of a Brick.

You may want to display the tables first with either the `display mactable` or `display arptable` command.

Once the command is successfully executed, the message

```
MAC tables refreshed.
```

—or—

```
ARP table refreshed.
```

is displayed.

Example

The following is an example `refresh` command:

```
hr-brick1> refresh mac
MAC tables refreshed.
```

repeat

Overview

The `repeat` command repeats the last command that was issued.

Format

The format of the `repeat` command is:

```
repeat
```

Explanation

This command repeats the last command that was issued in addition to any arguments that were specified.

Example

The following is an example `repeat` command:

```
hr-brick1>display time
The current time is Jun 12 2001, 22:03:15 GMT
Last booted at Jun 12 2001, 18:20:47. Active since Jun 12 2001,
  18:20:47
hr-brick1>repeat
hr-brick1>display time
The current time is Jun 12 2001, 22:03:15 GMT
Last booted at Jun 12 2001, 18:20:47. Active since Jun 12 2001, 18:20:47
```

□

traceroute

Overview

The `traceroute` command initiates an outbound traceroute from a Brick to another device.

Format

The format of the `traceroute`command is:

`ping` *`[options]`* `target_ip`

where *`target_ip`* is the IP address of the target device and the available options are:

- `-t`— max ttl
- `-q`— max queries per hop
- `-w`— timeout
- `-v`— vlantag
- `-i`— interface# to send traceroute to
- `-U`— use UDP instead of ICMP
- `-l`— data size
- `-s`— source IP
- `-o`— make packet come *out* of the zone
- `!`— (to bypass rule processing)

Explanation

To execute a traceroute, you must include the IP address of the target device in the ping command. The Brick will report each probe round-trip time with increasing TTL until the target is reached, in real-time.

The `traceroute` command will default to a 3 x 64-byte ICMP ping packet sent to every TTL increment, with a one-second timeout.

□

upload consolelog

Overview

The `upload consolelog` command manually uploads console log files from the Brick flash memory to the SMS *console_log* directory.

Format

The format of the `upload consolelog` command is:

```
upload consolelog
```

Explanation

When this command is executed, the Brick uploads the most recently logged console data from its flash memory to the SMS directory *<LMFROOT>/firewalls/<Brickname>/console_log/C<timestamp>.txt,* where *C<timestamp>.txt* is a timestamped file of the most recently logged Brick console message data. The SMS stores up to 20 timestamped console log data files under the *console_log* directory.

Example

The following is an example `upload consolelog` command:

```
hr-brick1>upload consolelog
```

□

Appendix A: Set up a Remote Dial-In Connection

Overview

Purpose

If you intend to access the Alcatel-Lucent *VPN Firewall Brick*™Security Appliance CLI by dialing into a Brick from a remote computer, you need to install and configure a modem at both ends of the connection.

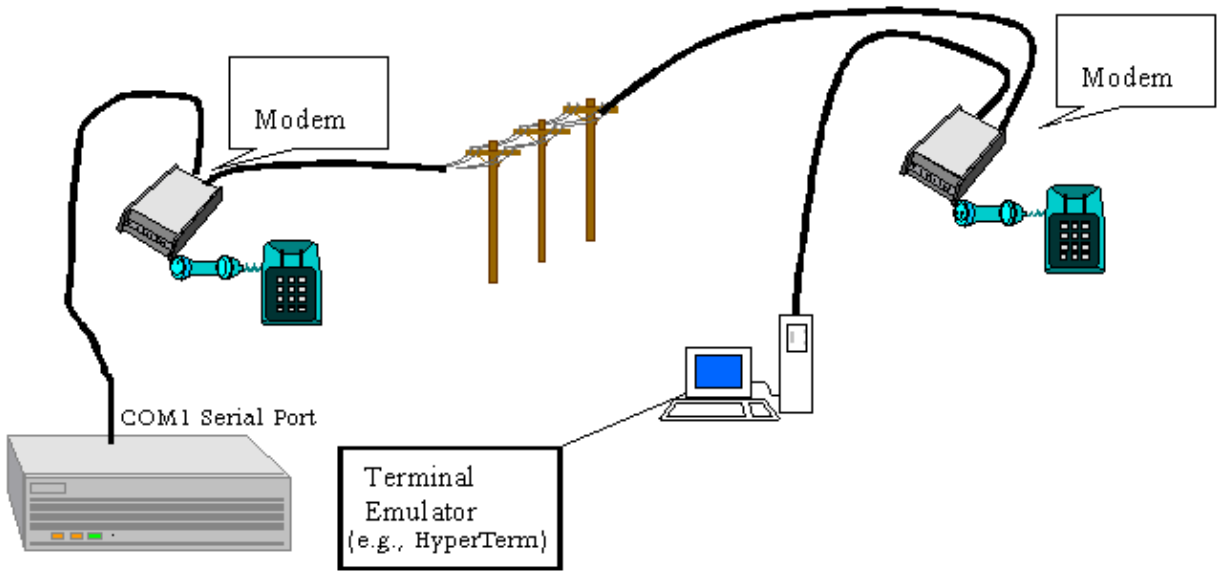
Notes

Important! *SMS Remote Console* If a Brick connection to the SMS is still operational, use the Remote Console feature described in Chapter 9, "Introduction to the Alcatel-Lucent *VPN Firewall Brick*™ CLI" to access the Brick command line.

As Figure A-1, "Remote Dial-in Connection" (p. A-2) illustrates:

- On the Brick end, connect a Hayes-compatible modem to the COM1 serial port on the back of the Brick.
- On the remote computer end, configure a dial-up, Hayes-compatible modem and use a terminal emulation program, such as HyperTerminal, to dial into the Brick and access the Brick command line interface.

Figure A-1 Remote Dial-in Connection



Contents

Modem Setup on the Brick

Task

To set up a modem on a Brick, do the following:

1. Connect a Hayes-compatible modem to the COM1 Serial port on the back of the Brick. The location of the serial port depends on the model of the Brick. See the *User's Guide*of the respective Brick model for a description.

2. Set the DIP switch on the modem to `Auto Answer` mode. Consult the modem manufacturer's documentation for instructions.

3. Enable **Data Terminal Ready** (DTR) override mode on the modem. Consult the modem manufacturer's documentation for instructions.

END OF STEPS

□

Modem Setup on a Remote Computer

When to use

This procedure explains how to configure a HyperTerminal session for dialing into a Brick from a remote computer running Windows 95/98 or Windows NT platform. Like the modem that is connected to the Brick, the modem that is installed on the remote computer end must also be a Hayes-compatible modem.

To configure a HyperTerminal session for remote access, do the following:

1 Verify that the modem and modem drivers are installed on the remote computer. If they are not installed, consult the modem manufacturer's documentation for instructions.

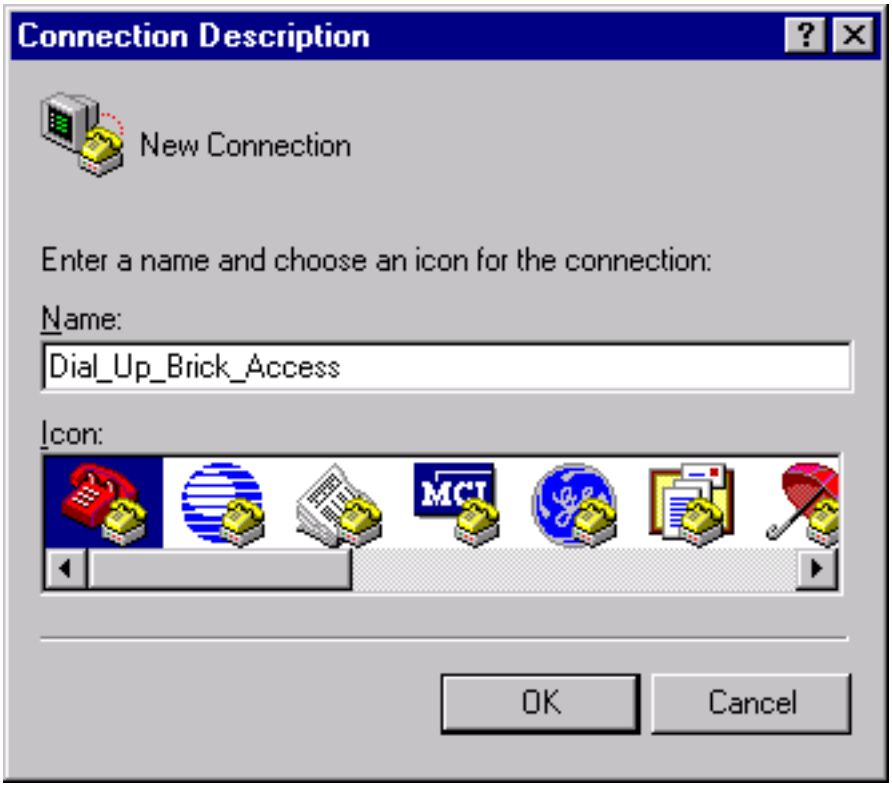
2 Start a terminal emulation program, such as HyperTerminal, as follows:

Start a terminal emulation program, such as HyperTerminal, as follows:

1. Select **Start** ▶ **Programs** ▶ **Accessories** ▶ **HyperTerminal.**
2. Select **HyperTerminal** from the list.

3 Enter a name for the connection (as shown in Figure A-2, "Entering Name for Hyperterminal Connection" (p. A-5)) and optionally select an icon to represent it, then click **OK**.

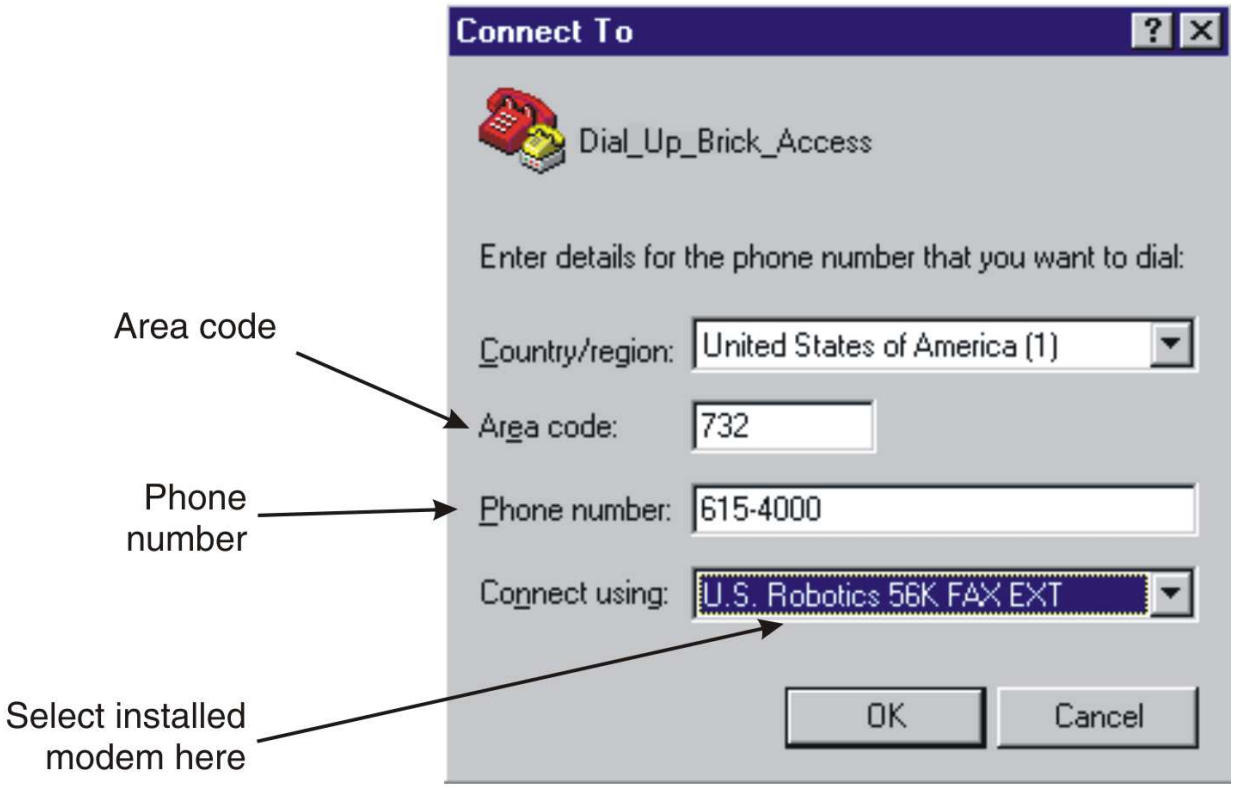
Figure A-2 Entering Name for Hyperterminal Connection



4 Select the modem (see Figure A-3, “Connect To Window in Hyper Terminal” (p. A-6)) that was installed in Step 1.

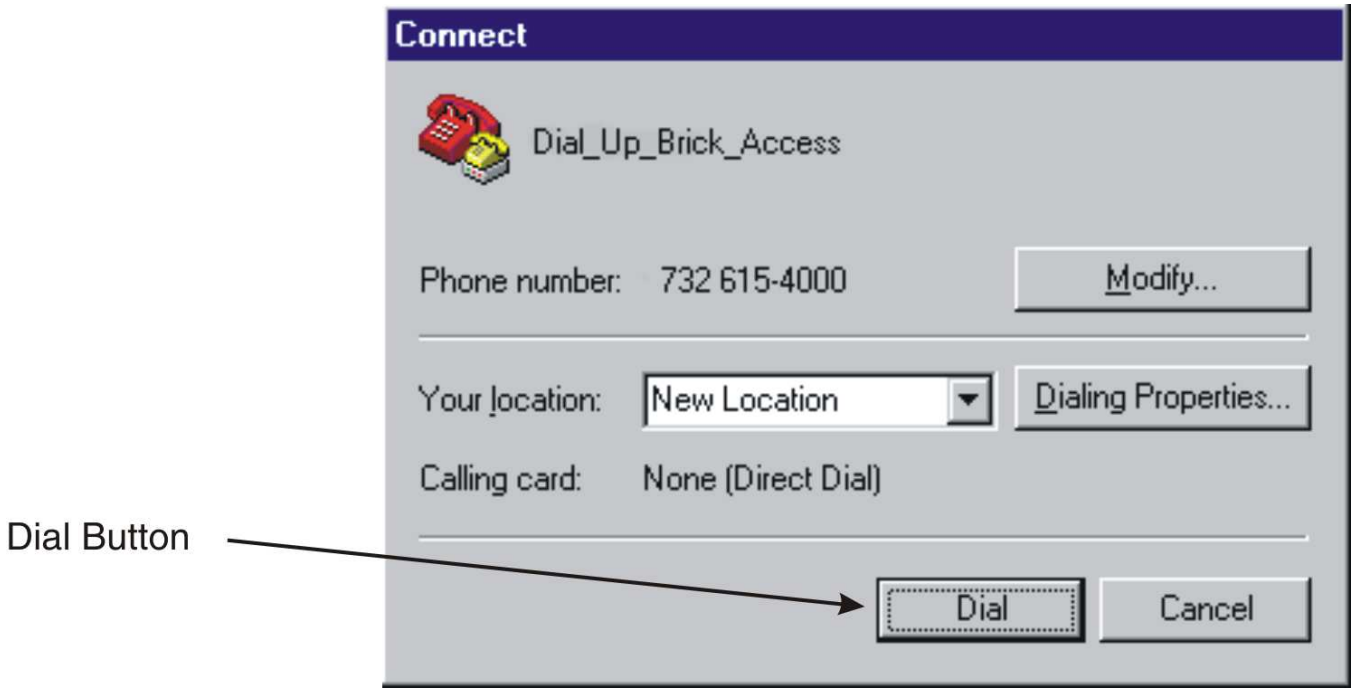
5 In the same window, enter the area code and phone number of the modem that is connected to the Brick and click **OK**.

Figure A-3 Connect To Window in Hyper Terminal



6 At this point, you can dial into the Brick by clicking the **Dial** button in the next window that appears (see Figure A-4, “Connect Window in HyperTerminal” (p. A-7)).

Figure A-4 Connect Window in HyperTerminal



7 As a last step, ensure that the session is using **Auto Detect** as the emulation type.

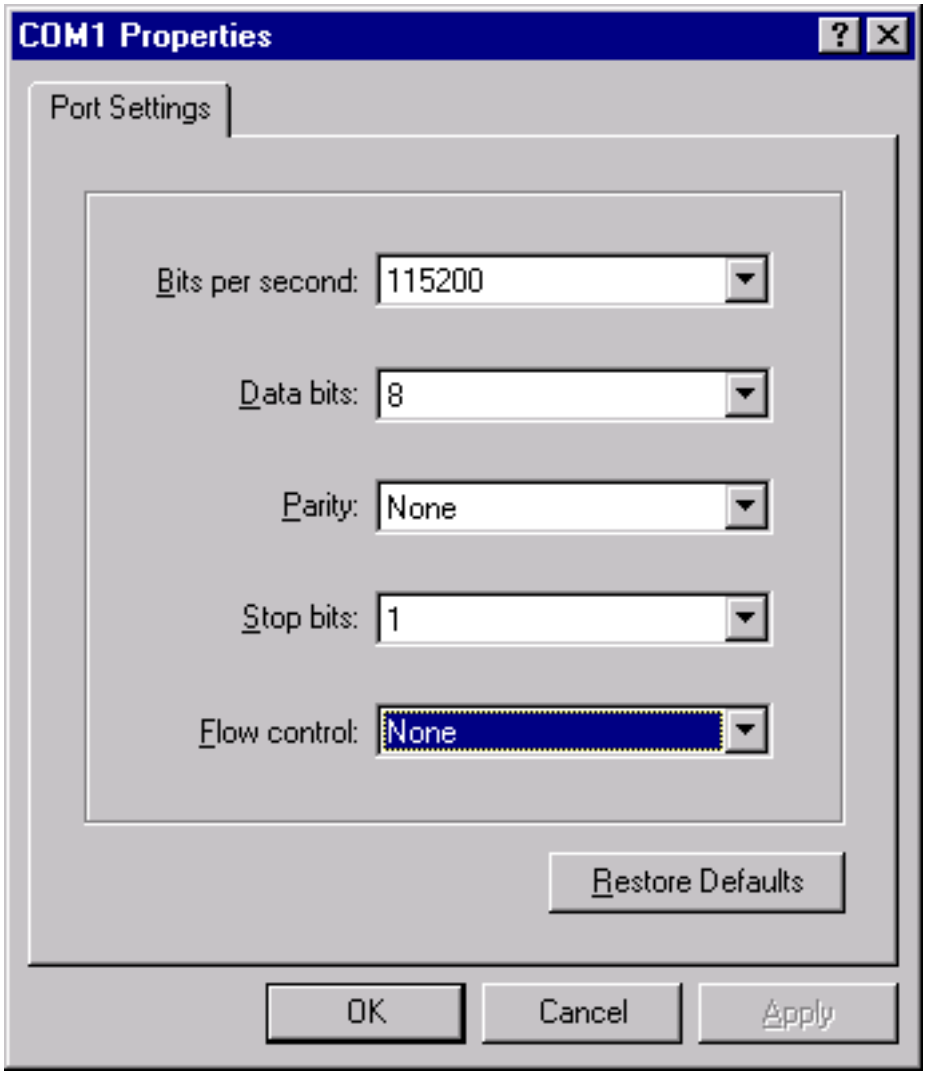
To double-check this:

1. In the HyperTerminal window, select **File** ▶ **Properties**.
2. Click the **Settings** tab as shown in Figure A-6, “Setting Emulation Type for Remote Computer Modem” (p. A-9).
3. Select **Auto Detect** in the Emulation field.

As shown in Figure A-5, “Configuring Port Settings for Remote Computer Modem” (p. A-8), configure the modem on the remote computer to these settings:

- 115200 bits per second. This is the Brick default.
- 8-N-1 (8 data bits, no parity, 1 stop bit)
- No flow control

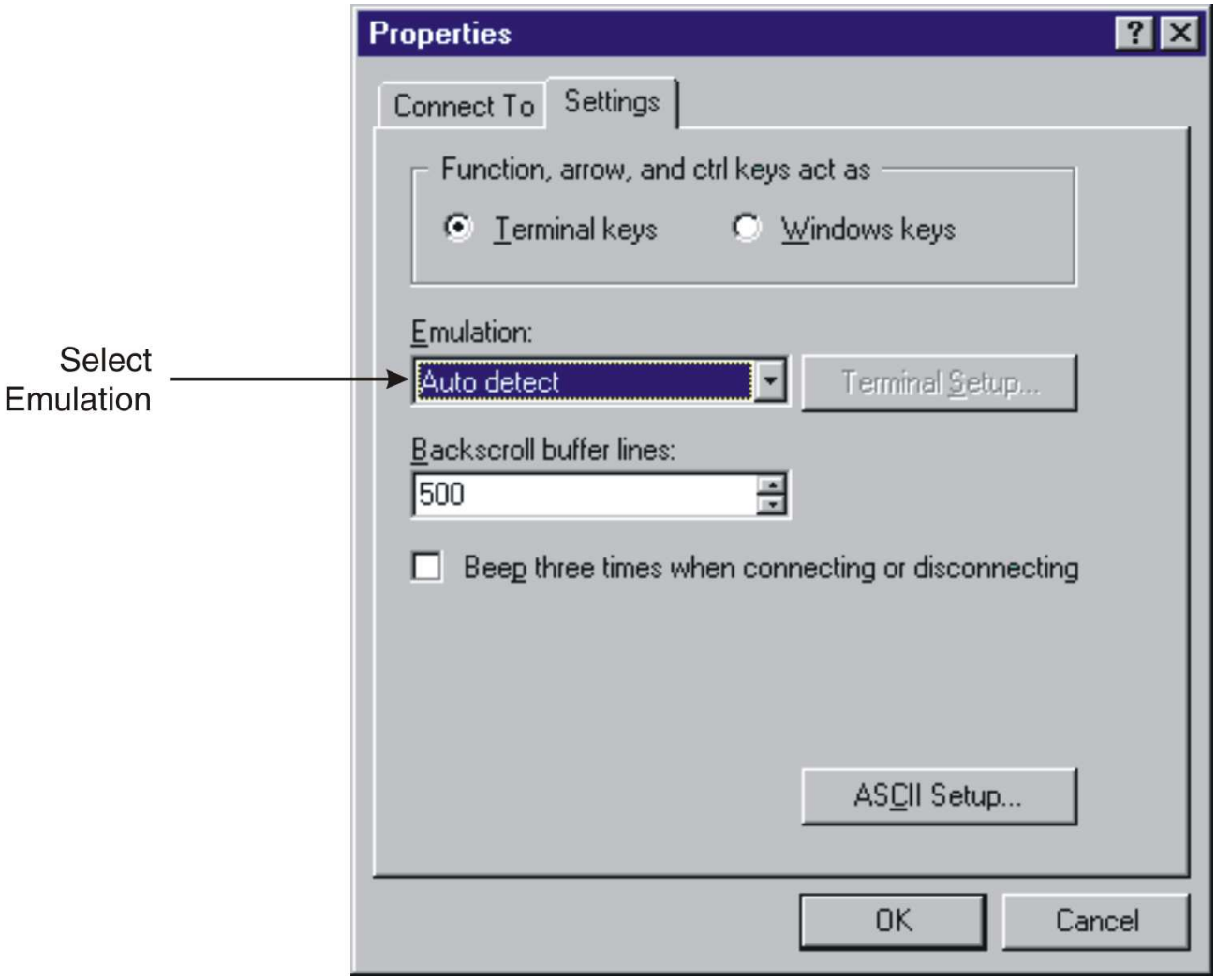
Figure A-5 Configuring Port Settings for Remote Computer Modem



8 Click **OK** to save the port settings.

9 Also, ensure that the emulation type is set to **Auto Detect**. To double-check this, select **File ▶ Properties** and click the **Settings** tab as shown in Figure A-6, “Setting Emulation Type for Remote Computer Modem” (p. A-9).

Figure A-6 Setting Emulation Type for Remote Computer Modem



END OF STEPS

Create a Serial Port Access Password

Overview

If you are accessing the Brick command line interface by means of a dial-in connection, you will need a Serial Port Access Password.

A Serial Port Access Password is required for each Brick that you want to access via a dial-up connection. To create a Serial Port Access Password, display the Brick Editor **Options** tab in the SMS graphical user interface.

For a complete description of all fields in the Brick Editor, refer to the *SMS Administration Guide*.

Procedure

To create a Serial Port Access Password, follow the steps below:

1. Display the Brick Editor. You may either right-click the Bricks folder and select **New Brick** to create a new Brick , or double-click a Brick name to edit an existing Brick.

2. When the Brick Editor appears click **Options** to display the Options tab. If you are creating a new brick, you will have to enter a `Brick Name` and `Brick IP Address/Mask` before you will be able to proceed to the Options tab.

3. In the area labeled **Serial Port Access,** select the **Enable Serial Port** checkbox. The **Password** and **Verify Password** fields become active.

4. Enter the password in the **Password** field, then enter it a second time in the `Verify Password` field.

5. Select **Save and Apply** from the File menu.

6. For an explanation on how to configure and activate a Brick with **Make/Package Floppy,** refer to the *SMS Administration Guide*.

7 Reboot the Brick.

END OF STEPS

□

Dial Up and Log Into a Brick

Procedure

For remote dial-in and external direct connections only, to login into a Brick:

1 Dial into the Brick using the Brick modem number. This can be done from HyperTerminal Call menu or via the ATDT <dial string> command.

2 After the connection is made, the Brick sends the prompt:

```
************************************************
** Lucent Managed Security Product (enter 3>CR>)**
```

3 After entering three carriage returns, the Brick sends the following message:

```
Signon to brick>
```

4 At this point, enter the login command and the Serial Port Access Password as created in the Brick Editor (see "Create a Serial Port Access Password" (p. A-10)).

```
Signon to brick> login ******
  ************************************************
 ** Remote Port Login to Lucent Security Product **
 **          Type help to get list of commands.  **
 ************************************************
 July 19 2001, 14:43:44 GMT - Login from remote port successful
 hr-brick1>
```

5 Upon successful completion of this command, a log record is written to the Administrative Events log. Refer to the *Types of SMS Logs* chapter in the *SMS Reports, Alarms, and Logs Guide* for details on this log file.

END OF STEPS

□

Appendix B: Set up a Direct Serial Port Connection

Overview

Purpose

Accessing the Alcatel-Lucent *VPN Firewall Brick*™ Security Appliance command line interface (CLI) can be accomplished by connecting a computer equipped with a terminal emulation program such as HyperTerminal to a serial port on the back of a Brick.

Contents

Set Up a Local Serial Port Connection

Task

To set up an local serial port connection, do the following:

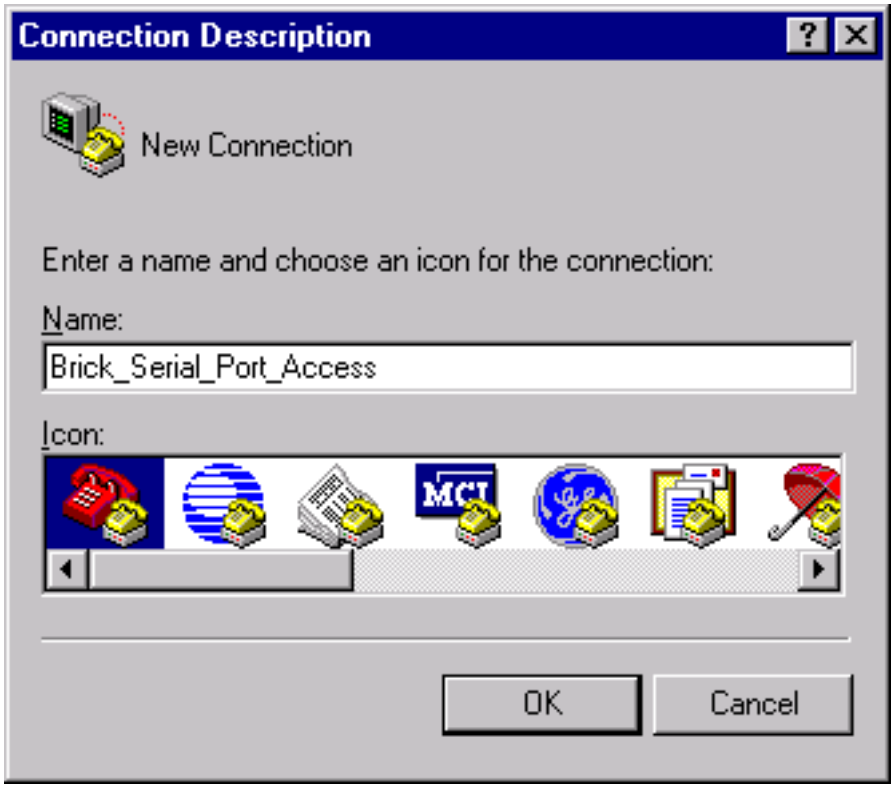
1 Connect the serial cable to the COM1 serial port on the back of the Brick.

2 On the computer, start a terminal emulation program, such as HyperTerminal, by doing the following:

1. Select **Start** ▶ **Programs** ▶ **Accessories** ▶ **Communications** ▶ **HyperTerminal.**
2. Select **HyperTerminal** from the list.

3 Enter a name for the connection, as shown in Figure B-1, “Entering Name for Hyperterminal Connection” (p. B-2), and optionally select an icon to represent it, then click **OK**.

Figure B-1 Entering Name for Hyperterminal Connection

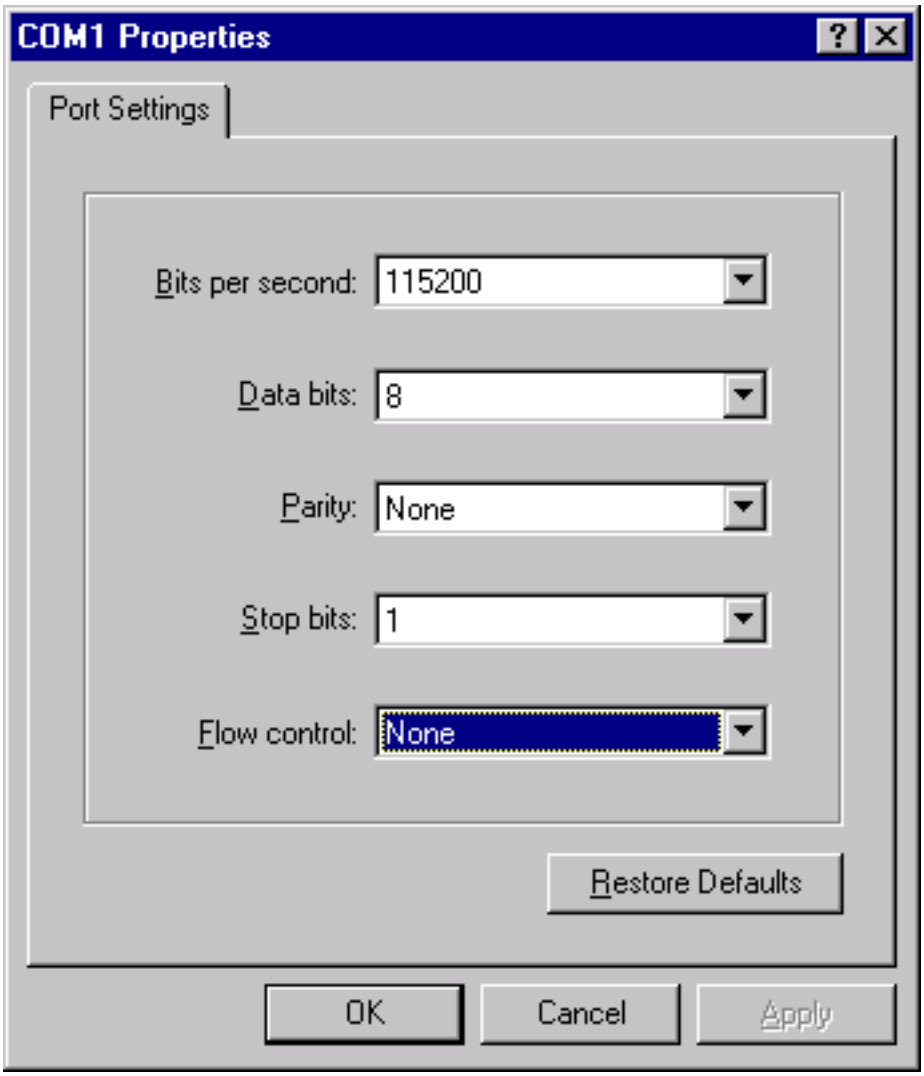


4 Select **COM1** and click **OK**.

5 In the next window (see Figure B-2, “Configuring Port Settings for Remote Computer Modem” (p. B-3)), configure the COM1 port with these settings:

- 115200 bits per second.
- 8-N-1 (8 data bits, no parity, 1 stop bit).
- No flow control (set to **None**)
  Note: for a Model 50 Brick, the flow control should be set to **None** or **Xon/Xoff** instead of **Hardware**.

Figure B-2 Configuring Port Settings for Remote Computer Modem



6 Click **OK** to save the port settings.

Also, ensure that the emulation type is set to **Auto Detect**. To double-check this, select **File ▶ Properties** and click the **Settings** tab.

END OF STEPS

□

Create a Serial Port Access Password

Overview

If you are accessing the Brick CLI by means of a local serial port connection, you will need a Serial Port Access Password.

A Serial Port Access Password is required for each Brick that you want to access with the Brick CLI. To create a Serial Port Access Password, you have to display the Brick Editor in the SMS graphical user interface.

For a complete description of all fields in the Brick Editor, refer to the *SMS Administrator Guide*.

Procedure

To create a Serial Port Access Password, follow the steps below:

1. Display the Brick Editor. You may either right-click the Bricks folder and select **New Brick** to create a new Brick, or double-click a Brick name to edit an existing Brick.

2. When the Brick Editor appears click **Options** to display the Options tab. If you are creating a new Brick, you will have to enter a `Brick Name` and `Brick IP Address/Mask` before you will be able to proceed to the Options tab.

3. In the area labeled **Serial Port Access**, select the **Enable Serial Port** checkbox. The **Password** and **Verify Password** fields become active.

4. Enter the password in the **Password** field, then enter it a second time in the **Verify Password** field.

5. Select **Save and Apply** from the File menu.

6. For an explanation on how to configure and activate a Brick with **Make/Package Floppy**, refer to the *SMS Administrator Guide*.

7 Reboot the Brick.

END OF STEPS

□

Log In to a Brick

Procedure

For external direct connections only, to log in into a Brick:

1. Dial into the Brick using the Brick modem number. This can be done from HyperTerminal's Call menu or via the ATDT <dial string> command.

2. After the connection is made, the Brick sends the prompt:

```
**************************************************
** Lucent Managed Security Product (enter 3 <CR>)**
```

3. After entering three carriage returns, the Brick sends the following message:

```
Signon to brick>
```

4. At this point, enter the login command and the Remote Password as created in the Brick Editor (see "Create a Serial Port Access Password" (p. B-5)).

5. Upon successful completion of this command, an log record is written to the Administrative Events log. Refer to the *Types of SMS Logs* chapter in the *SMS Reports, Alarms, and Logs Guide* for details on this log file.

```
Signon to brick> login ******
```

```
************************************************
** Remote Port Login to Lucent Security Product **
** Type help to get list of commands. **
************************************************
July 19 2001, 14:43:44 GMT - Login from remote port successful
hr-brick1>
```

END OF STEPS

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