

Vanguard Managed Solutions

Vanguard Applications Ware
Basic Protocols

Command Line Interface

Notice

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Overview

Introduction

Command Line Interface (CLI) lets you use programming scripts to configure VanguardMS products. CLI lets you modify configuration parameters without stepping through various menus in the Control Terminal Port (CTP) or without performing total configuration downloads using the 9000 OMS. CLI is ideal for updating a few parameters on a large number of devices on a regular basis.

Vanguard Managed Solutions's implementation of CLI is case insensitive and supports the creation, deletion, and setting of each parameter and its configuration. You can receive automatic verification of the CLI script syntax or use the context-sensitive help. The order for listing parameters is the same as presented using the device's CTP. However, setting parameters can be done in any order.

What is CLI?

CLI is a scripting language for creating, deleting, and modifying Configuration Memory (CMEM) records. CLI uses programmable scripts to update a device's configuration. It is available in all Vanguard Applications Ware licenses and is accessible through the CTP menu. Device independent, CLI has a fixed menu element across all platforms so systems, such as PCs, can use its programming capabilities.

Related Documentation

For additional information regarding CLI, refer to these documents:

- *Basic Configuration Manual* (Part Number T0113)
- *Vanguard Applications Ware SNMP/MIB* (Part Number T0106-04)

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Theory of Operation

Introduction

Configuration Memory (CMEM) records contain configuration settings for the operation of all Vanguard products.

CMEM Information

CMEM records identify the operating parameters used by a Vanguard product in a network. Each parameter has a set, or range, of variables that may be selected. For example, to enable the router capability in a Vanguard 320, you first create a router CMEM record. Then you set the operating parameter IP Address. This one, among other parameters, needs to be set for the unit to work properly.

Creating CMEMs using the CTP

You can update the configuration of a device from the Configuration menu. This menu lists various configurable records. Each record contains parameters that can be updated and changed. Once the new values are selected, they are saved to CMEM.

Creating CMEMs with the CLI

CLI lets you configure features that are more complicated to configure from the CTP. You can also use CLI to quickly modify the configuration parameters without stepping through the various menu levels within the CTP.

With CLI, you can configure features in the node that would be more complicated to do on the CTP. This is especially true with interrelated CMEM records and when setting the configurations with more than one record type. The CTP menu method allows you to create scripts. However, with CLI you can document and remember configurations (for example, you can record CTP keystrokes).

Program Operation

Because it has an interface that differs from that of the CTP, CLI must map the existing data to a different format. Characters entered via CLI are stored in the input command buffer. This buffer has a maximum length of 80 characters.

Type and Instance

The *type* is the CLI name for the individual CMEM record.

The *instance* is a number which qualifies the *type*. If one allowable record exists for that type, then the instance is not specified. There could be many instances for certain types of records. There is a maximum of three levels of instances (for example, instance.instance.instance) and HEX instance values for configuration commands.

This table shows several examples:

<i>Instance</i>	<i>Means</i>
slip:5	The slip port record on port 5.
ip-interface:10	The tenth record of ip-interface.
fri-station:2.1	The first station of the fri port record on port 2.
node	The one and only one node record.
get alc-terminal:1.0x10.0x2	This is a HEX instance value: Port 1, Interchange 0x10, Terminal 0x2 record

Parameter and Value

The *parameter* is the CTP prompt descriptor. Every CMEM record that can be modified must have one.

Value is a valid input for the parameter. When the Set command is used, parameter/value pairs are required. For more information, please refer to “Command Types” section on page 6. Parameter uses the same descriptor as the CTP prompt.

These are some examples:

Type	Parameter	Value
fri-station	K Frame Window	8
node	Node Name	BN
ip-interface	IP Address	219.1.87.12
slip	Clock Speed	9600

Using CLI

Introduction

This section explains the components of the user interface, including how to access CLI, and the requirements and process of using the interface. These topics are examined:

- Command prompt.
- Available command types.
- Command syntax you would use.
- How CLI validates your input.
- How CLI responds to your input.

Accessing CLI Through the CTP

Perform these tasks to access CLI:

Step	Action
1	Connect to the node's CTP using a PC terminal application.
2	Ensure the node is running a software image that contains CLI (Release 5.2 and later).
3	Log on to the node.
4	From the Main menu, select Command Line Interface (Figure 1). Your Main menu may look different.

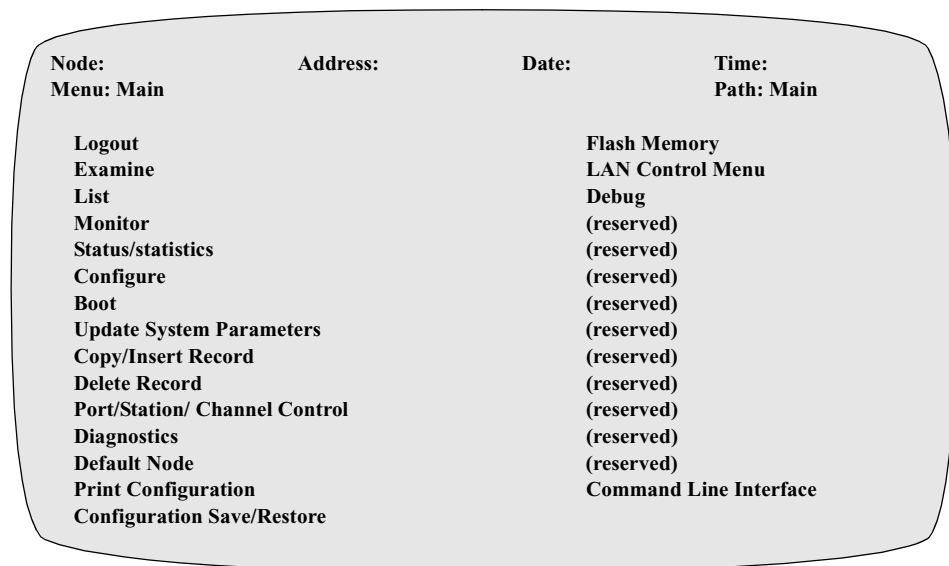


Figure 1. CTP Main Menu

For more information on connecting to the CTP and accessing the main menu, refer to the *Vanguard Basic Configuration Manual* (Part Number T0113).

Command Prompt

Once you start CLI, the command or input prompt > appears.

The > prompt indicates that the system is accepting input. The command is executed after you press ENTER. After the response to your command appears, a > or >> appears on the next line.

If you are using the Create/Set command, CLI enters into the input mode as indicated by this >> prompt. The >> prompt appears on every subsequent line of the script until you type ; to terminate this mode and save the CMEM record.

Press ESC anytime to return to the > prompt. To return to the Main menu, press CTRL+T.

Alarms

To ensure smooth running of a CLI script, and to detect CLI responses more clearly, CLI turns off all alarms when it starts. This is the same as pressing CTRL+N while in the CTP mode.

The original state is restored when you exit CLI.

Command Types

Introduction

CLI is structured using five categories:

- Device Configuration
- Script Verification Mode
- Transfers
- Statistics
- Control

Commands

This table lists and describes the commands:

Category	Command Name	Purpose
Device Configuration	create	Creates a CMEM record with default values. Can also be used to set a list of parameters to values.
	delete	Deletes an existing CMEM record.
	set	Sets a list of parameters to certain values in a CMEM record.
	get	Displays the parameters of all existing CMEM records, or the details of one specific record.
	getall	Displays all existing CMEM records and the corresponding parameters and values.
	getdefault	Displays the parameters of the specified CMEM records in the node that differ from the default values.
	getdefaultall	Displays the default value of all of the CMEM records in the node.
	getnondefault	Displays the name of the specified CMEM records that differ from the default values.
	getnondefaultall	Displays the name of all CMEM records that differ from the default values.
	getdes	Retrieves the description file and hardware type to include card and port type.
getscript	Displays all existing CMEM records and the corresponding parameters and values. In addition to printing the CMEM record names, instance numbers, and parameter values, this command encloses each record with an appropriate CLI command (create or set) for reproducing the CMEM configuration.	
Script Verification	verify	Sets the script verification mode to see if your commands are valid.
Script Transfer	tftp	Configuring a device by transferring a CLI script or saving the configuration from the device to a script file.
Statistics	stat	Display the statistics of the CLI transfer or the last time the configuration was changed.

Category	Command Name	Purpose (continued)
Control	bootnodecold	Cold boots the node as if from the CTP. (Reloads the configuration from the CMEM, the software image from the flash, and the hardware diagnostic.)
	bootnodewarm	Warm boots the node as if from the CTP. (Reloads the configuration from the CMEM.)
	bootalltables	Boots all the table records and implements parameter changes as if from the CTP. (Loads table records from CMEM to become run-time configuration.)
	bootport:<port no.>	Boots the specified port as if from the CTP. <port no.> is the number of the port being booted.
	boot [type]: <instance no.>	Boots a single CMEM record as if from the CTP. (For additional information, refer to the Boot Type section below.)
	defaultnode	Resets the CMEM to the factory default settings as if from the CTP. (For more information, refer to Defaultnode section below.)
	update	Updates the port record without booting the node when a FRI/FRA station is created or deleted.

Boot Type

This command boots the CMEM record independently. Use the context help to determine which records can be booted independently. Those records available to be booted independently from CTP boot submenu can also be booted using this command. Most table records and station records can be booted independently by this command.

Defaultnode

This command erases the CMEM, so it contains only factory default CMEM records with default values. It has the same function as the Default Node command in the CTP Main menu. After using this command, you must warm boot or cold boot the node.

Command Syntax for Device Configuration

Introduction

Each command consists of three parts:

- Operation
- Type:instance.instance
- Parameter:value

■ **Note**

There is a maximum of three levels of instances (for example, instance.instance.instance).

Command Form

A typical command takes this form:

operation type:instance

parameter:value

The colon (:) distinguishes different components of the command. Each command must be followed by an ENTER or an EOF in the case of a script file.

The *operation* part is mandatory while *type*, *instance*, *parameter*, and *value* are optional depending on the command.

All input — including commands, operations, record types, and parameter names — are not case sensitive.

Command Syntax for Script Transfer

Introduction

Each command consists of four parts:

- Transfer protocol
 - Operation
 - Filename
 - IP
-

Command Form

A typical command takes this form:

protocol operation filename IP

Where:

- Protocol is TFTP.
 - Operation is setscript or getscript.
 - Filename is the file of the script (if the filename ends in ^M^J, it is considered to be a DOS file type).
 - IP is the location of the file.
-

Command Syntax for Script Display

Introduction

This command has one part:

- Operation
-

Command Form

A typical command takes this form:

operation

Where:

- Operation is getscript.
-

Command Syntax for Statistics

Introduction

Each command consists of two parts:

- stat
 - parameter
-

Command Form

A typical command takes this form:

stat parameter

Where:

- parameter is cftimestamp or clitransfer.
-

Command Syntax for Control

Introduction

Each command consists of two parts:

- Operation
 - Argument (depends on the operation)
-

Command Form

A typical command takes this form:

operation [argument]

Where:

- Operation can be:
 - bootnodecold
 - bootnodewarm
 - bootalltables
 - bootport
 - boot
 - Argument (only bootport or boot)
 - For bootport, it is the port number.
 - For boot, it is the name with instance number.
-

Command Validation and Response

Introduction

CLI handles commands one at a time. If verification is set to Off, or if CLI is in the execution mode, it parses each command and then validates the input. All parameter/value pairs are validated for the proper ranges before the modified CMEM record is saved.

Physical port validation is performed on the create operation. If the command passes the validation process, it executes immediately. This is an irreversible process. Once executed, the command cannot be aborted or reversed with the Undo menu selection. If errors occur, an error message appears. The CTP or the generates the message.

Errors

If CLI cannot interpret the syntax of entered commands, it displays error messages. Some semantic errors are checked so the command can be performed correctly. For example, setting a parameter on a non-existent record or creating a port record on a non-physical port results in errors.

Command Response

When a command is completed by pressing ENTER, the request is processed. After the process is completed, a response to your command appears on the CTP as shown in this table:

Response	Explanation
OK EXE > <i>command</i>	The command executed successfully.
OK EXE error message > <i>command</i>	The command executed unsuccessfully.
OK VER > <i>command</i>	The command is verified and is a valid command.
ER VER error message > <i>command</i>	The command is verified and is a invalid command.
OK EXE > <i>set command</i> >> <i>another parameter/value</i> >> ;	Corresponds to the continuation of input which occurs for the create and set commands.

Special Characters This table identifies the special characters recognized by the CLI feature:

Character/Key	Meaning
ESC	The ESC key deletes the current command input. It always returns to the message prompt (>) regardless of the where the input is.
\	The backslash character can be used to input delimiter characters, such as “;”, “:” and ‘\’ in the input.
CTRL+T	This character combination exits CLI and returns you to the CTP Main menu.
*	An asterisk at the front of a parameter indicates that the node must reboot for changes to the parameter to take effect.
;	A semi-colon saves the values for the create and set commands.
BACKSPACE	The BACKSPACE key deletes the last character entered.
ENTER	The ENTER key ends the input line and processing of the command buffer takes place.
SPACE	Since command syntax is in free format, spaces are meaningful only between the parameter and value strings. Otherwise, spaces are ignored. Spaces are not allowed in the record name.
?	The ? key character provides context help.

■ **Note**

When you assign names for record type or parameter and input value, use standard printable characters, even though the input can be stored as binary values. Only printable characters reside in the buffer.

Using Context-Sensitive Help

Introduction

This section explains the context-sensitive help for CLI, and gives some examples of how you can use help.

Help Character

CLI's context help facility is available at the prompt or anywhere in the command by typing a question mark (?). This character displays additional information that you can use when creating scripts. Figure 2 shows an example of context help:

```
>
>
>
>
>?
create?
delete?
set?
verify?
get?
getall?
getscript
stat?
tftp?
boot?
bootnodecold?
bootnodearm?
bootport?
bootalltables?
defaultnode?
>
```

Figure 2. Context Help

Using Help in Various Situations

This table shows examples of context-sensitive help in various situations:

Context	Result	Example	Displays
> prompt	A list of available commands appears	> ?	create? delete? set? verify? get? getall? getscript? stat? tftp? boot?
A command	The list of commands appears.	> create ?	create fri-port:? create x25-port:? create calling address:? etc.

Context	Result	Example	Displays (continued)
An instance	A list of the available port numbers which can be created appears.	> create x32:?	Port range 1-7, 13-14, 25-26, 31-32, 37-38, 49-50 Virtual port range 100-155
A parameter	A list of all available parameters for that record appears.	> set node >>?	Node Name: ? Control Port Subaddress: ? etc.
A value	The range and default messages appear.	> set ip:1 >>IP Address: ?	Range = A valid IP address in dotted notation Default = 0.0.0.0
>> prompt	A list of the parameters for that record appears.	> set dora >>?	DORA Subaddress: ? Primary DORM DNA: ? etc.

Finding the Closest Match

Context help can be used to find the closest match. Simply type the first character or the first few characters of your command input and then type a question mark (?). This table shows a few examples of this:

Type ?	Displayed Result
>create f?	create fra: ? create fri: ?
>>Cl ?	Clock Speed: ? Clock Type: ?

Configuring a Device

Introduction

This section describes each of the six CLI commands used for device configuration:

- create
- delete
- set
- get
- getall
- defaultnode

Creating a New CMEM Record

Use the create command to create a CMEM record with the default values. The previous record is deleted and replaced.

The syntax for this command is:

```
>create type:instance.instance  
>>parameter:value  
>>parameter:value;
```

Only one parameter/value per line is appears at the >> prompt. There is no limitation on the number of lines. The instance is used as an index to the CMEM memory area. Any parameter/value not entered is automatically assigned a default value.

■Note

There is a maximum of three levels of instances (for example, instance.instance.instance).

After the command is processed, it displays a response.

- If the record is created properly, the prompt appears.
- If there are errors, then the appropriate error message appears.

This table shows the create command being used to configure a device, with the aid of the context help facility:

Command	Response	Meaning
>c sntp?	create sntp ? No range for this record	CLI responds to your help request by finding a match for the letters c and sntp (in this case, the create command for sntp), and gives you a range of values for this record.
>create sntp:1	OK EXE	CLI executes your command.
>>;	OK EXE	CLI enters input mode, allowing you to assign values to parameters. You have then terminated input mode (when you typed ;). The CMEM record is saved.
>c spfm?	create spfm: ? Table range 1 - 128	CLI responds to your help request by finding a match for the letters c and spfm (in this case, the create command for spfm), and it gives you a range of values for this table.
>create spfm: 2;	OK EXE	Your command, with your selection (2 in this example) based on the range of values displayed above, is executed.

Deleting a CMEM Record

Use the delete command to delete a CMEM record.

The syntax for this command is:

```
delete type :instance.instance
```

After the command is processed, it displays a response.

- If the record is properly deleted, the prompt appears.
- If there are errors, then the appropriate error message appears. An error message is returned if the CMEM record does not exist.

■ Note

There is a maximum of three levels of instances (for example, instance.instance.instance).

This example shows the delete command being used to delete a CMEM record:

Command	Response	Meaning
>delete redirect:1; ENTER	OK EXE	You deleted this record.

Displaying an Existing CMEM Record

Use the get or getall command to display a list of CMEM records, all parameters in a CMEM record, or all the records with the corresponding parameters and values.

The syntax for this command is:

```
get type :instance.instance
getall
get
```

After the command is processed, it displays a response. An error message appears if the CMEM record does not exist.

■ Note

There is a maximum of three levels of instances (for example, instance.instance.instance).

This table shows an example of the get and getall command:

Command	Response	Meaning
>get fri:1; ENTER	Connection Type: SIMP Clock Source: EXT Clock Speed: 64000 *Highest Station Number: 1 Frame Sequence Counting: NORM Packet Sequence Counting: NORM Control Protocol Support: AUTO High Priority Station: 0 Maximum Voice Bandwidth bits per sec: 2048000 Segment Size When Voice Is Present: 64 Segment Size When Voice Is Not Present: Disable OK EXE	All the current parameters and values appear.
>get tcp; ENTER	ER EXE No records	There are no tcp record in the CMEM.

Configuring a Device

Command	Response (continued)	Meaning
>get; ENTER	node manager-password snmp-community:1 bridge-parameter bridge-link-parameter:1 lcon-parameter fri:1 fri-station:1.1 fri:2 fri-station:2.1 OK EXE	Displays the records in CMEM.
>getall; ENTER	{all the records, parameters and values}. OK EXE	Displays all records (with all the parameters and values) in CMEM.

Displaying a Description File and Hardware Information

The getdes command displays a description (DES) file and information about the hardware in the node.

The syntax for this command is:

getdes

This table shows an example of the getdes command.

Command	Response	Meaning
>getdes; ENTER	Des File Size = 984 File name: 55e05.xrc Platform: Vanguard 300 Memory: 4M Bytes Flash Size: 2M Bytes Version string: 5.5_@MS_V300 Generated on: 29-April-00 12:54:08 Selected Option Size: Reserved Memory: 1.7M Available Memory Space: Available Flash Space: Group: Vanguard 300 Platform V300 ETH-V300 ETH-BRIDGE TFTP TELNET CLIM <Card Type> MB : 0 <Port Type> Port 1 Interface Type: ISDN S/T Port 2 Interface Type: EIA-232-D DCE Port 3 Interface Type: EIA-232-D DCE Port 4 Interface Type: EIA-232-D DCE Port 5 : ETHERNET	All the hardware information, including card and port type, and the DES file appear.

Setting Parameters to Values in a CMEM Record

Use the set command to update an existing CMEM record.

The syntax for this command is:

```
>set type:instance.instance
>>parameter:value
>>parameter:value;
```

Only one parameter/value per line is allowed at the >> prompt. There is no limit on the number of lines. The instance is used as an index to the CMEM memory area.

After the command is processed, it displays a response.

- If the record is set properly, the prompt appears.
- If there are errors, then the appropriate error message appears. An error message also appears if the CMEM record does not exist, or if any of the values are incorrect.

To terminate the input mode, type ;. This saves the CMEM record. Any parameter or value not entered, is automatically assigned its original value.

■Note

There is a maximum of three levels of instances (for example, instance.instance.instance).

This table show the Set command being used to set a parameter with a new value to an existing CMEM record:

Command	Response	Meaning
>set redirect:1 ENTER	OK EXE	Input mode is entered, allowing you to assign values to parameters, and you can continue your input.
>>p? ENTER	Primary Address:? RANGE=0-15 BCD digits Default=12	CLI enters input mode, allowing you to assign values to parameters. CLI responds to your help request with a record that matches this letter, and a valid range of values, with a default value.
>>Primary Address: 11 ENTER	OK EXE	Your command, with your selection (11 in this example) based on the range of values displayed above, is valid. You can continue with your input.
>>; ENTER	OK EXE	Your command is executed, input mode is terminated (when you type ;) and the CMEM record is saved.

Sample Script

This table shows a script to configure X.25 on ports 1 and 2:

Command	Result
>create x25:1	Creates a default X.25 record on port 1.
>>Connection Type: simp;	Sets the connection type to <i>simple connection</i> .
>set x25:1	Prepares to set an X.25 parameter.
>>Clock Source: int;	Sets the Clock Source parameter to <i>int</i> .
>set x25:1	Prepares to set an X.25 parameter.
>>Clock Speed: 80000;	Sets the Clock Speed parameter <i>80000</i> .
>set x25:1	Prepares to set an X.25 parameter.
>>Link Address: dce;	Sets the Link Address parameter to <i>dce</i> .
>create x25:2	Creates a default X.25 record on port 2.
>>Connection Type: simp;	Sets the connection type to <i>simple connection</i> .
>set x25:2	Prepares to set an X.25 parameter.
>>Link Address: dte;	Sets the Link Address parameter to <i>dte</i> .
>create route-selection:1	Prepares a route table record on port 1.
>>address:200;	Sets the node address to <i>200</i> .
>create route-selection:1	Prepares to set a new parameter.
>>#1 destination:p1;	Sets the destination to <i>port 1</i> .
CTRL+T	Returns you to the enter selection prompt at the Main Menu.
7.4.y	Performs a node boot from the CTP, so the new configuration can take effect.

Setting Script Verification

Setting the CLI Verification Mode

The verify command sets the CLI script to verification mode. This mode has only two states: on and off.

This is the syntax for the command:

```
verify [on/off]
```

When CLI is in verification mode, all commands are checked for accuracy but no CMEM record is saved.

This table shows the verify option in a configuration script sent to a device. In this script, you are checking to see if your commands are accurate and valid.

Command	Response	Meaning
>v? ENTER	verify OFF verify ON	CLI responds to your help request by finding a match for the letter v (verify) and giving you options for the verify command.
>verify on ENTER	OK VER	CLI is confirming that you have put it in verification mode.
>c at:? ENTER	create atpad:? Port range 1-6 Virtual port range None	CLI responds to your help request by finding a match for the letters c and at (create for ATPAD) and gives you a valid range of values.
>create atpad: 1; ENTER	OK VER	Your command, with your selection (1 in this example) based on the options displayed above, is valid.

Configuring the Device using Script Transfers

Transferring the CLI script using TFTP at the CLI prompt

The tftp command allows you to configure a device via a script transfer. It can also be used to get the current configuration of the device. The script is an ASCII file of CLI commands. TFTP is a background process. You can issue other CLI commands while TFTP starts.

Note

Filenames ending in ^M^J are DOS files; otherwise, they are UNIX files.

The syntax for this command is:

tftp [getscript/setscript] filename IP

Command	Response	Meaning
>tftp getscript script1 219.1.252.122; ENTER	OK EXE	CLI transfers the configuration records in the CMEM to a file named script1 located at IP address 219.1.252.122.
>tftp setscript script1 219.1.252.122 ENTER	OK EXE	CLI transfers and executes the script file named script1 located at IP address 219.1.252.122.
>tftp getscript ENTER	EX EXE Required parameter is missing	The filename and IP are mandatory input.
>tftp getscript ENTER	EX EXE Argument is invalid	This is an Invalid operation.

Transferring Description File and Hardware Information Using TFTP

The tftp command also allows you to obtain description file (.des) information. The .des file contains information about node hardware and Applications Ware options you have chosen.

The syntax for this command is:

tftp command filename IP

Command	Response	Meaning
>tftp getdes des.doc 219.1.252.84 ENTER	OK EXE	CLI transfers the description file and hardware information to a file named des.doc located at IP address 219.1.252.84.
>tftp getnondefault nondef.doc 219.1.252.84 ENTER	OK EXE	CLI transfers all nondefault values in the node to a file named nondef.doc located at IP address 219.1.252.84.
>tftp getdes ENTER	ER EXE	The file name and IP address are mandatory input.

Transferring the CLI script using TFTP in SNMP client

The tftp command is also available at the SNMP client. The SNMP client starts the TFTP via SNMP agent in the device. The device must be configured with IP and have the SNMP agent running with read/write permissions.

Command	OID
start the transfer	.1.3.6.1.4.1.449.2.1.4.2.4 with value = 1
filename	.1.3.6.1.4.1.449.2.1.4.2.3
getdes	.1.3.6.1.4.1.449.2.1.4.2.1 with value = 9
getnondefault	.1.3.6.1.4.1.449.2.1.4.2.1 with value = 10
getscript	.1.3.6.1.4.1.449.2.1.4.2.1 with value = 7
getscript	.1.3.6.1.4.1.449.2.1.4.2.1 with value = 9
IP	.1.3.6.1.4.1.449.2.1.4.2.2
TFTP	.1.3.6.1.4.1.449.2.1.4.2

Getting the Status of TFTP and Configuration Changes

Getting the status of the TFTP transfers using stat command

The stat command displays the current status of the tftp transfer or the date of the last configuration change.

The syntax for this command is:

stat [cftimestamp|clittransfer]

Command	Response	Meaning
>stat cftimestamp; ENTER	OK EXE	CLI displays the time stamp of the last configuration changed.
>stat clitransfer; ENTER	The CLITransfer Status Report No Transfer so far OK EXE	No tftp is executed in the background.
>stat clitransfer; ENTER	The CLITransfer Status Report Transfer complete # of error=0 OK EXE	Tftp has completed and there are no errors in the script.
>stat clitransfer; ENTER	The CLITransfer Status Report Transfer complete # of error=2 OK EXE	Tftp has completed and there are two errors in the script.
>stat clitransfer; ENTER	The CLITransfer Status Report Transfer fail # of error=2 OK EXE	Tftp has failed to complete and there is one error in the script and one error due to the transfer failure.

**TFTP Transfer
Status in SNMP
client**

The status of TFTP transfers is also available at the SNMP client. The SNMP client queries the following objects in the device. The device must be configured with IP and have the SNMP Agent running with read/write permissions.

Command	OID
TFTP	.1.3.6.1.4.1.449.2.1.3.3
operation	.1.3.6.1.4.1.449.2.1.3.3.1
IP address	.1.3.6.1.4.1.449.2.1.3.3.2
filename	.1.3.6.1.4.1.449.2.1.3.3.3
timestamp	.1.3.6.1.4.1.449.2.1.3.3.4
bytecount	.1.3.6.1.4.1.449.2.1.3.3.5
status	.1.3.6.1.4.1.449.2.1.3.3.6

Error Messages for Device Configuration

List of Possible Error Messages

This table lists the possible error messages:

Message	Description
Invalid input	You have entered an incorrect command.
Incorrect operation	You have entered an invalid command. Type the Help character ? for information.
Missing record	You have entered a command without a record name. Type a command, then type the Help character ? for information.
No record for this operation	You have typed the name of a CMEM record that does not exist. Type the Help character ? for information.
Missing parameter	You have typed a value without including a parameter. You need to provide a parameter.
No parameter for this operation	You must provide the correct parameter for this record.
Missing value	You must provide a value for the corresponding parameter or type : for the default value.
Invalid value	You have entered a value that is out of range. Type the Help character ? after the parameter for information.
Record has no instance	This record has no instance.
Missing instance	You must provide an instance (in the form of a value) after the record name. Type the Help character ? after the record name for information.
Failed to create/delete port at this device location	You must provide a value for the port that is within the proper range.
Cannot read CMEM record	You tried to set a parameter in a record that has not been created. Ensure that the record exists.
CTP error message	There is an error on the CTP.
Instance not within allowed range	You must provide an instance that is within the proper range.

Error Messages for Script Transfer and Statistics

List of Possible Error Messages

In TFTP, there are two types of errors that can occur, transmission and CLI errors. For CLI errors you can use the stat command to retrieve the first 20 errors.

This table lists the possible error messages for TFTP and Statistics:

<i>Message</i>	<i>Description</i>
Transfer Fail	No response from the computer at the IP address for over the maximum time limit
CLI Error	There is a script error.
TFTP or Kermit transfer already there	There is a previous tftp transfer in progress.
Required argument is missing	Parameter is missing.
Argument is invalid	Parameter is invalid.

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