Alcatel-Lucent
7705 Service Aggregation Router
Command Line Interface
Quick Reference Card

CLI overview

The 7705 SAR Operating System CLI is a command-driven interface accessible through a console, Telnet, and secure shell (SSH). The CLI can configure and manage a 7705 SAR.

The CLI command tree is a hierarchical inverted tree. At the highest level is the ROOT context (or level). Below ROOT are the major command contexts, referred to as top-level contexts.

In addition to the major command contexts, there are global commands that can be entered at any level in the CLI hierarchy. See "Command contexts and global commands".

If connecting locally to the 7705 SAR via the Console connector, use a standard DTE cable. The default settings are: DTE, 115 200 baud, 8 data bits, no parity, 1 stop bit, no flow control. See the applicable chassis installation guide for the Console connector pinouts.

For detailed information on the CLI, see the 7705 SAR Basic System Configuration Guide.

Session access and login

The CLI supports local (console) session access via the Console connector and remote (Telnet and SSH) CLI session access via the Management connector. There can be multiple inbound and outbound FTP, Telnet, and SSH sessions.

The 7705 SAR uses AAA (Authentication, Authorization, and Accounting) to monitor and control network access security. You can configure the 7705 SAR to use local, RADIUS, or TACACS+ security to validate users who attempt to access the router. You can also select in which order the authentication methods are tried.

When you connect to an available session on the CLI, you see a legal disclaimer (shown below) and the node login prompt. Access the CLI by entering your username and password. If your password is a temporary password, you will be prompted to change it. The default **username** and **password** are both **admin**.

```
TiMOS-B-4.0.B1-24 both/i386 ALCATEL-LUCENT SAR 7705
Copyright (c) 2000-2011 Alcatel-Lucent.
All rights reserved. All use subject to applicable license agreements.
Built on Fri Feb 18 00:46:36 EST 2011 by csabuild in /rel4.0/b1/B1-24/panos/main

CSATEST3 - 7705_custDoc
Login: _
```
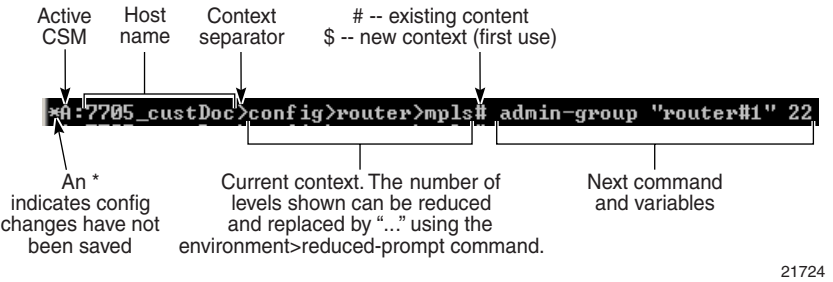Release and load numbers

Access levels and session bumping

User profiles define a set of access permissions to a hierarchical branch or to specific commands. Multiple user profiles can be defined and referenced from a user account. Depending on the authorization requirements, passwords are configured locally or on a RADIUS server.

The **admin>disconnect** command disconnects a user, an IP address, or a console, Telnet, FTP, or SSH session. Only authorized users can execute the commands in the **admin** context.

CLI command prompt

The CLI command prompt indicates the device being accessed and the current CLI context. The > symbol is the context separator. When you first log in, you are in the ROOT context and the CLI displays "A:*router_name#*". The following graphic identifies the parts of the prompt:

Active CSM | Host name | Context separator | # -- existing content $ -- new context (first use)

```
*A:7705_custDoc>config>router>mpls# admin-group "router#1" 22
```

An * indicates config changes have not been saved | Current context. The number of levels shown can be reduced and replaced by "..." using the environment>reduced-prompt command. | Next command and variables

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The ***** disappears when an **admin>save** command is executed. Use of the * indicator is optional and is controlled by the **saved-ind-prompt** command in the **environment** context. See "Environment commands" for more display-related commands.

A **#** or a **$** always indicates the end of the prompt (current context). Enter the next command after the prompt. In the example above, **admin-group** is the command and `router#1` and `22` are user variables. If a user variable uses special characters (#, $, and so on), the variable must be enclosed within double quotes; otherwise, the CLI will reject the command or will accept the command but ignore the special character and all characters after it.

Command contexts and global commands

Under the top-level contexts are subcontexts that contain groups of related commands. Navigate to a lower level by entering the command names of successively lower contexts and pressing ↵. For example, from ROOT, enter **configure** to access the **configure** context. To execute a command, type the command and press ↵.

Immediately below ROOT are the top-level command contexts; for example, **admin**, **bof** (boot option file), **configure**, and **show**. Examples of global commands that are used for navigating within the CLI and displaying information about the console session are **back**, **exit**, **help**, **?**, **history**, **info**, **oam**, **ping**, **telnet**, and **write**.
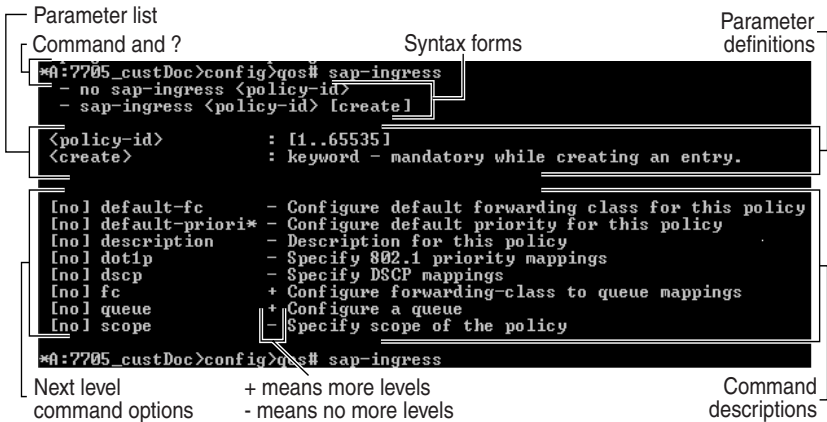
To display a full list of top-level contexts and global commands, enter **?** at the ROOT level. Alternatively, enter **help globals**, **help edit**, or **help special-characters** to display a full list of global commands, editing keystrokes, and special characters, respectively. Use **?** from any context to view all available options (see "Interactive help").

To change context and move up one level, enter **exit** or **back**. To return to ROOT, enter **exit all**. To terminate the CLI session, enter **logout** and press ↵.

Interactive help

The CLI provides context-sensitive help at every level of the command hierarchy. To get help while in the CLI, type **?**. You do not need to press ↵.

If you type **?** at a top-level context, the CLI lists all commands in the context. If you type **?** after a command, the CLI lists the command syntaxes and parameters, followed by the list of commands available at the next level, as shown in the following example.

Parameter list | Command and ? | Syntax forms | Parameter definitions

```
*A:7705_custDoc>config>qos# sap-ingress
 - no sap-ingress <policy-id>
 - sap-ingress <policy-id> [create]

 <policy-id>      : [1..65535]
 <create>         : keyword - mandatory while creating an entry.

 [no] default-fc      - Configure default forwarding class for this policy
 [no] default-priori* - Configure default priority for this policy
 [no] description     - Description for this policy
 [no] dot1p           - Specify 802.1 priority mappings
 [no] dscp            - Specify DSCP mappings
 [no] fc              + Configure forwarding-class to queue mappings
 [no] queue           + Configure a queue
 [no] scope           - Specify scope of the policy

*A:7705_custDoc>config>qos# sap-ingress
```

Next level command options | + means more levels - means no more levels | Command descriptions

If you type **?** in the middle of a command keyword, the CLI lists keyword completions that match what you have entered, then redisplays the original letters typed.

If you type **help** in any context, the CLI provides a brief description of the help feature.

Command search and execution

When you enter a command and press ↵, the CLI compares it to the commands defined in the current context. If it finds a match, it executes the command. If the command does not have a match, the command is rejected and an error message is displayed. For some errors, a ^ is shown to indicate that the error occurs somewhere after that point. In the example below, the user variable "**22**" ——shown in an earlier example——is missing.

Error message

```
*A:7705_custDoc>config>router>mpls# admin-group "router#1"
                                                         ^
Error: Missing parameter
*A:7705_custDoc>config>router>mpls#
```

^ indicates that error occurs after this point

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If an operational command will have a serious effect on the configuration of the system, the CLI displays a warning and requires operator confirmation before executing the command.

Commands can be entered one level at a time or several levels at a time. For example, entering **configure** ↵, **router** ↵, and **mpls** ↵ is the same as entering **configure router mpls** ↵.

Command completion

You can enter a command keyword by typing the first few letters of the command and pressing the Tab key or the spacebar.

If the command is unambiguous, the CLI completes the keyword. If the command is ambiguous, the CLI completes the keyword to the last letter that matches all of the available command possibilities and displays all possible matches.

The command completion function searches only within the current context.

When Tab or spacebar is pressed after "S" in this context, the CLI shows all possible commands.

```
A:7705_custDoc>config)port# s
serial              shutdown            sonet-sdh           sleep
ssh                 show
A:7705_custDoc>config)port# s
                              ^
Error: Ambiguous command
```
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The create command

The **create** command appears when any object in the 7705 SAR is created for the first time. Subsequent CLI references to the object do not use the **create** command and allow you to configure or modify the object's parameters. Examples of objects are ports, profiles, services, and filters.

create must be used for first creation of an object; otherwise, an error message is displayed

```
*A:7705_custDoc>config)service# epipe
  - epipe <service-id> [customer <customer-id>] [create] [vpn <vpn-id>]
    [vc-switching]
  - no epipe <service-id>

*A:7705_custDoc>config)service# epipe 14 create
MINOR: SVCMGR #1101 Invalid customer-id
*A:7705_custDoc>config)service# epipe 14 customer 1 create
*A:7705_custDoc>config)service>epipe$
```

① Error message indicates missing parameter; in this case, **customer-id** must be specified

③ An epipe has been created and the epipe context accessed.

② Error fixed; **customer-id** specified

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CLI cursor and edit shortcuts

Enter **help>edit** at any time to display the available editing keystrokes, such as **Ctrl-z** to enter a command and return to ROOT, **Ctrl-e** to move to the end of the current line, or **Esc-b** to move back one word. Several shortcuts not listed are given in the following table:

Command key	Function
Delete or Backspace	Deletes last character on the command line
CTRL-p or ↑	Moves to previous line in command history
CTRL-n or ↓	Moves to next line in command history
CTRL-f or →	Moves forward one character
CTRL-b or ←	Moves backward one character
CTRL-c	Terminates the command (used while running maintenance or diagnostic commands, but not configuration commands)

Command history

The CLI stores the last 30 commands executed during a CLI session. Use the **history** command to display the CLI command history. Then, enter **"!"** follow by the number of the command in the list to execute that command. Alternatively, you can scroll up and down the list using **CTRL-p** or ↑, and **CTRL-n** or ↓, and press ↵ when the command appears after the prompt. You can also edit the command before you press ↵.

Environment commands

The **environment** commands are top-level commands that control the appearance and behavior of a single CLI session. Type **?** from the **environment** context to display the list below.

alias	Enables or disables the substitution of a command line by an alias
create	Enables or disables the need to use the **create** parameter when creating an entity
more	Configures whether CLI output should be displayed one screen at a time awaiting user input to continue
reduced-prompt	Configures the maximum number of higher-level CLI context nodes to display by name in the CLI prompt for the current CLI session
saved-ind-prompt	Enables the use of the save indicator in the prompt
terminal	Configures the terminal screen length for the current CLI session
time-display	Specifies whether time should be displayed in local time or UTC
time-stamp	Specifies whether a timestamp should be displayed before the prompt

Understanding command syntax symbols

The two displays below show CLI screens when the **?** is entered after the **multilink-bundle** command. The first display shows the two forms of the command syntax. The second display shows the entire **?** output.

In the first form of the command, the first set of square brackets indicates that all the items within them are optional, but if one of the options is needed, it must be either **bundle-id** or **slot/mda** (both user-defined variables), or defined via the **type** keyword (which requires one of the mandatory keywords **mlppp** or **ima-grp**, indicated by the use of braces). The keyword **detail** is optional.

In the second form of the command, the pipe symbol is used without square brackets, indicating that one of the user-defined variables (**bundle-id** or **slot/mda**) must be used. The choice of keywords (**ppp** or **ima**) is optional.

[ ] contents are optional

| means "or" (in User Guide, shown as |)

```
*A:7705_custDoc>show# multilink-bundle
  - multilink-bundle [<bundle-id>|<slot/mda>|type {mlppp|ima-grp}] [detail]
  - multilink-bundle <bundle-id>|<slot/mda> [ppp|ima]
```

< > contents are user-defined variables (in User Guide, shown in italics)

{ } contents are mandatory

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Note that in the display below, **type** is used twice: in the command syntax as a keyword, and in the definition of **bundle-id** as a variable enclosed by < >.

type used as a variable to represent the keywords **ima** and **ppp**.

type used as a keyword associated with the keywords **mlppp** and **ima-grp**.

```
*A:7705_custDoc>show# multilink-bundle
  - multilink-bundle [<bundle-id>|<slot/mda>|type {mlppp|ima-grp}] [detail]
  - multilink-bundle <bundle-id>|<slot/mda> [ppp|ima]

<bundle-id>            : bundle-<type>-slot/mda.<bundle-num>
                          bundle      - keyword
                          type        - ima|ppp
                          bundle-num  - [1..32]
<slot/mda>            : <slot>/<mda>
                          slot        - [1]
                          mda         - [1..6]
<type>               : mlppp   - restricts display to groups of type MLPPP
                        ima-grp - restricts display to groups of type IMA

       ima             + display IMA group data
       ppp             - displays ppp bundle data
```

An example of <bundle-id> is **bundle-ppp-1/4.8**, where "bundle" is a keyword and is entered as is. It is followed by a hyphen and one of the <type> keywords (ima or ppp). <slot> must be the number 1, and <mda> is a number between 1 and 6, and is followed by a period and <bundle-num>, which is a number between 1 and 32.

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