



# **Signaling Delivery Controller**

## CLI Application Guide

4.4

Catalog Number: RD-015-44-19 Ver. 2

Publication Date: May 2015



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## About this Document

Document Name: F5 Signaling Delivery Controller CLI Application Guide

Catalog Number: RD-015-44-19 Ver. 2

Publication Date: May 2015

## Document Objectives

This document provides an overview of the F5 Signaling Deliver Controller (SDC) CLI (Command Line Interface) application that is supported as of Release 4.4.

## Document History

Revision Number	Change Description	Change Location
May 2015 – Ver. 2	Updated trademark text.	


## Conventions

The style conventions used in this document are detailed in Table 1.

**Table 1: Conventions**

Convention	Use
Normal Text	Regular text; style: F5_Normal
<b>Normal Text Bold</b>	Names of menus, commands, buttons, and other elements of the user interface; style: F5_Normal_Bold
<i>Normal Text Italic</i>	Links to figures, tables, and sections in the document, as well as references to other documents; style: <i>F5_Normal_CrossRef</i>
Script	Language scripts; style: F5_Scripts
Calibri	File names; F5_Normal_FileName
Table Heading	Table Headings; style: F5_Table Header Text
Table Text	Table Text; style: F5_Table_Text



Convention	Use
 Note:	Notes which offer an additional explanation or a hint on how to overcome a common problem



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## 1. About the F5 SDC CLI Application

This section provides an overview of the CLI (Command Line Interface) application that is used by F5<sup>®</sup> Traffix<sup>®</sup> Signaling Delivery Controller<sup>™</sup> (SDC).

### 1.1 Introduction

The F5 SDC CLI application provides system administrators with a status overview of an SDC site's related peers and pools. By enabling administrators to easily view the status of the connected peers and pools, administrators can then easily manage an SDC site's peer/pool availability.



Note: This application is being introduced in phases. This document relates to the initial phase that is introduced as part of Release 4.4.

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### 1.2 CLI Application Interface Functionality

The CLI application interface enables a system administrator to use a predefined set of commands to define and manage SDC peers and pools. For example, administrators can get a list of peers/pools or add/enable a specific peer. For a detailed list of the supported commands, see *CLI Application Supported Commands*.



Note: Any configuration change done via the CLI application interface is automatically applied to the site.

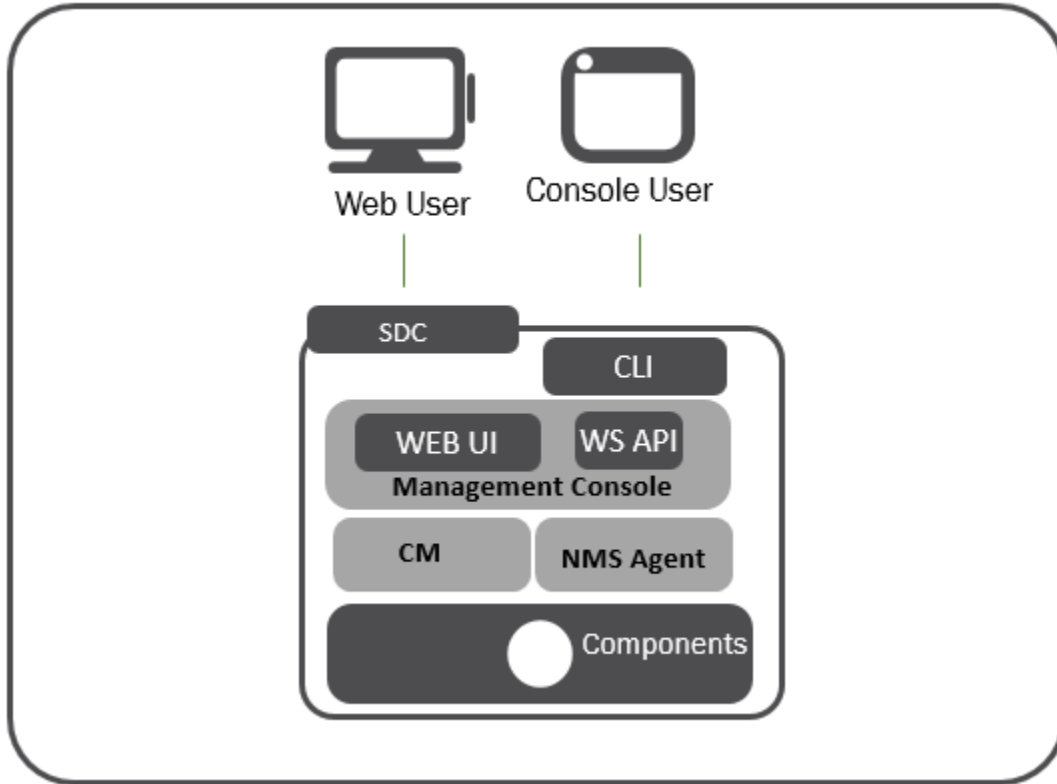
---

### 1.3 Software Architecture

Users access the management console either through the Web UI or the WS API to manage an SDC site. The CLI application interface, using the WS API, provides another way for console users to manage an SDC site. The CLI application interface is installed as a separate utility on an SDC site, as shown in *Figure 1*.



**Figure 1: SDC CLI High Level Architecture**





## 2. Working with the CLI Application

This section describes how to work with the CLI application.

### 2.1 Prerequisites

The following are the prerequisites before installing the CLI application

- The CLI application is available from an .rpm file.
- The CLI application must be installed on a preconfigured and active SDC site.



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Note: The CLI application is currently only supported on SDC sites.

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### 2.2 Installing the CLI Application



Note: The CLI application is included as part of the ISO. If you are performing an upgrade or new installation, you do not need to manually install the application and you can proceed to the next section.

---

Once the CLI application .rpm file has been copied to your server, you need to perform the following installation steps.

**To install the CLI application:**

1. Execute the following command:  
**#rpm -ivh <path to the rpm file>**



---

Note: For example, **#rpm -ivh /tmp/f5cli-1.0-1.86\_64/rpm**

---

The application is now saved in the */opt/traffic/f5cli* directory.

### 2.3 Post-Installation Configuration

You have the option to change the CLI related logging level from the default defined level of INFO to either WARN or DEBUG. The log configuration file is saved in the *env.conf* file.





### To define the log level:

1. Execute the following command:

```
# vi conf/env.conf.
```

The *env.conf* file appears.

Figure 2: The Log Configuration File

```
[f5cli]
logfile = f5cli.log
loglevel = INFO
[root@localhost f5cli]#
```

2. In the `loglevel = INFO` line, change INFO to either WARN or DEBUG.
3. Save the file.



Note: This configuration change must be done before running the application. The CLI application logs are then available in the *log/f5cli.log* file in the *opt/traffix/f5cli* directory. For more information, see *Viewing the CLI Application Logs*.

## 2.4 Accessing the CLI Application

Access to the CLI application is allowed only to authorized LINUX level users who have SDC administrative privileges.

### To access the CLI application:

1. From the shell prompt type **f5cli**.
2. In the prompt:

```
root@(f5console)(default)(inactive)(/Main)#,
```

Connect to the site by running the following command with the SDC Web UI IP address:

```
connect <IP address>
```

3. Enter the SDC username and the password.

If the credentials are acceptable, the following message appears:

“Connected. Use switch to choose a site.”



4. In the prompt:

```
root@(f5console) (default) (Active)(/common)#
```

Define the SDC Site ID as it is defined in the SDC Web UI by running the following command:

```
switch <SDC ID>
```

The site ID that you entered replaces the “default” in the above command prompt line.



## 3. CLI Application Supported Commands

This section describes the different commands that are currently supported by the CLI application. The application is based on a hierarchical structure for common and action application commands.

### 3.1 CLI Application Common Commands


The following table contains all common commands, their descriptions and their options that are based on the application's hierarchical structure.

**Table 2: CLI Application Common Commands**

Command	Description	Command Arguments	How to Use
version	Displays the CLI application version	N/A	version
shell	Provides a way to interact with the Linux shell	Any of the shell Linux commands (i.e. free -m, uptime, date)	shell <Linux command> or ! <Linux command>
disconnect	Returns to main console	N/A	disconnect
switch	Redefines the site ID in the console	The relevant site ID	switch <SDC site ID>
pwd	Displays your current console view (status/site)	N/A	pwd
history	Displays a list of previously used commands during the current CLI session presented by index numbers and can be used to execute one of these commands	<index #>	history: to display the list of previous commands or history <index #> : to execute a previous command
help	Displays help per command.	< name of command>	help <command> or ? <command>




	<i>Note: The help command displays the help that is relevant for the level of the console from which you type in the command</i>		
exit	Exits from the console	N/A	exit
sys	Details the system platform architecture and the OS version of the server	N/A	sys
assistant	Displays the list of all available commands of all the sections	N/A	assistant

 Note: Double-clicking <Tab> displays the available command options for the application level of which you are in.

Command syntax is case-sensitive.

### 3.2 CLI Application Action Commands

The following table contains all supported action commands, their descriptions and their options that are based on the application’s hierarchical structure.

 Note: By applying grep/awk and other Linux commands, the output parameters can be further manipulated. Retrieval of peers/pools can be parsed according to specific criteria. For example, “show peers | grep port” will display those lines that are associated with the filtered request (i.e. port).

**Table 3: CLI Application Action Commands**

Command	Description	Command Arguments	How to Use
show	Displays list of available command options	peers, pools, health, peer, pool	show < command options>
show Command Options:			
show peers	Displays all available peers for an SDC site	N/A	show peers



Command	Description	Command Arguments	How to Use
show pools	Displays all available pools for an SDC site	N/A	show pools
show peer	Displays the specified peer details	<peer name>	show peer <peer name>
show pool	Displays the specified pool details	<pool name>	show pool <pool name>
show health	Displays health and status of all peers and all pools	N/A	show health
show health-map	Displays the health and status per FEP, per CPF for a peer or pool	N/A	show health-map
conf	Modifies an existing peer according to a specified command option	add-peer, remove-peer, disable-peer, enable-peer	conf < command options>
conf Command Options:			
conf add-peer	Adds a peer to an existing pool	<peer name> <pool name>	conf add-peer <peer name> <pool name>
conf remove-peer	Removes a peer from an existing pool	<peer name> <pool name>	conf remove-peer <peer name> <pool name>
conf disable-peer	Disables (disconnects) an existing enabled peer	<peer name>	conf disable-peer <peer name>
conf enable-peer	Enables (connects) an existing disabled peer	<peer name>	conf enable-peer <peer name>



## 4. Viewing the CLI Application Logs

The CLI application logs are displayed in the *log/f5cli.log* file in the *f5cli* directory (*/opt/traffic/f5cli*), as either INFO, WARN, DEBUG logs depending on how they were configured prior to running the application. For more information about this configuration option, see *Post-Installation Configuration*.

### To generate a CLI application log:

1. Execute the following command:

```
# tail -f log/f5cli.log
```

The relevant log appears.

The following is an example of an INFO log.

**Figure 3: A CLI App INFO Log Example**

```
[root@localhost f5cli]# tail -f log/f5cli.log
2014-12-10 01:10:21 root INFO [3586] Connected to 172.29.49.87. use 'switch' to switch site
2014-12-10 01:10:38 root INFO [3586] Switched to site207-A
```



## Appendix A : Examples of Output Parameters for CLI Action Commands

The following screenshot is an example for the show pool command.



Note: The actual output parameters vary depending on how a specific pool is configured.

Figure 4: Show Pool Command Output

```
=====
Properties                               Values
=====
Name                                     Pool.test.com
Status                                   red
Health                                   red
Load Balancing Policy
Policy                                   Round Robin
Minimum Number of Servers                1
Peers                                     peer1.test.com;peer2.test.com
Rate Limit (TPS)                          4
Pool Ramp-Up Time (Seconds)               2
Split By                                  10
Discovery Method                          Static
Time to Live (Millis)
Routing Rules

+ Associated peers
=====
Name                                     peer1.test.com
Administrative State                       Enabled
Health                                     red
Status                                     red
Binding Name                               peerName1

Name                                     peer2.test.com
Administrative State                       Enabled
Health                                     red
Status                                     red
Binding Name                               peer2Name

=====
Properties                               Values
=====
Name                                     pool3.test.net
Status                                   red
Health                                   red
Load Balancing Policy
Policy                                   Weighted Round Robin
Minimum Number of Servers                1
Peers                                     peer1.test.com
Rate Limit (TPS)                          44
Pool Ramp-Up Time (Seconds)               0
Split By                                  request.SESSION_ID
Discovery Method                          Static
Time to Live (Millis)
Routing Rules

+ Associated peers
=====
Name                                     peer1.test.com
Administrative State                       Enabled
Health                                     red
Status                                     red
Binding Name                               peerName1
=====
```



The following screenshot is an example for the show peers command.



Note: The actual output parameters vary depending on how a specific peer is configured.

**Figure 5: Show Peers Command Output**

```
root@ (f5console) (vSDC_Site) (Active) (/Common) # show peers
Common :: Peer Table
=====
Properties                               Values
=====
Name                                     peer2.test.com
Peer Profile
Proxy Group                             fep-tcp-in
Node is static                           true
Administrative State                     Enabled
Health                                   red
Status                                   red
Protocols                                Diameter
Local IP                                 1.1.1.1
Local Port                                11
Local Realm                              Realm2
Local Host                               2.2.2.2
Remote IP                                 55.5.5.5
Remote Port                              55
Define as Server                          true
Discovery Method                          Static
Binding Name                              peer2Name
Use SCTP Transport                        false
TC Timer                                  44
TC Timer Units                            MILLISECONDS
TW Timer                                  22
=====
Properties                               Values
=====
Name                                     peer1.test.com
Peer Profile
Proxy Group                             fep-tcp-in
Node is static                           true
Administrative State                     Enabled
Health                                   red
Status                                   red
Protocols                                Diameter
Local IP                                 2.2.2.2
Local Port                                22
Local Realm                              realm1
Local Host                               host1
Remote IP                                 1.1.1.1
Remote Port                              11
Define as Server                          true
Discovery Method                          Static
Binding Name                              peerName1
Use SCTP Transport                        false
TC Timer                                  11
TC Timer Units                            MILLISECONDS
TW Timer                                  3
=====
root@ (f5console) (vSDC_Site) (Active) (/Common) #
```





## Glossary

The following table lists the terms and abbreviations used in this document.

**Table 4: Terms and Abbreviations**

<b>Term</b>	<b>Definition</b>
AAA	Authentication, Authorization and Accounting.
AF	Application Function
API	Application Programming Interface
CLI	Command Line Interface
Cluster	Group of nodes used to provide services as a single unit.
Cluster Node	A node in the Cluster.
CPF	Control Plane Function
Data Dictionary	Defines the format of a protocol's message and its validation parameters: structure, number of fields, data format, etc.
DRA	Diameter Routing Agent
EMS	Element Management System
FEP	Front End Proxy
HTTP	Hypertext Transfer Protocol
HSS	Home Subscriber Server
IMS	IP Multimedia Subsystem
JMS	Java Message Service
LDAP	Lightweight Directory Access Protocol
Link	The connection joint between the Cluster and Remote Nodes.
LTE	Long Term Evolution
MME	Mobile Management Entity
NGN	Next Generation Networking.
Node	Physical or virtual addressable entity



<b>Term</b>	<b>Definition</b>
PCEF	Policy and Charging Enforcement Function
PCRF	Policy and Charging Rules Function, acts as decision point and enforces policy usage for a subscribers
Peer	Physical or virtual addressable entity. A Client or Server Peer in the NGN network that provides or consumes AAA services
Pool	A group of server remote nodes.
RADIUS	Remote Authentication Dial In User Service
Remote Node	A client or server node in the network that provides or consumes AAA services.
Scenario	Logical policies of translation flow.
SDC	Signaling Delivery Controller
SNMP	Simple Network Management Protocol
SS7	Signaling System No. 7
TCP	Transmission Control Protocol
TLS	Transport Layer Security
UDP	User Datagram Protocol
URI	Universal Resource Identification.
WS	Web Service