

Service Management on Third Party Devices



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Service Management on Third Party Devices

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Documentation and Release Notes

To obtain the most current version of all Juniper Networks® technical documentation, see the product documentation page on the Juniper Networks website at <http://www.juniper.net/techpubs/>.

If the information in the latest release notes differs from the information in the documentation, follow the product Release Notes.

Juniper Networks Books publishes books by Juniper Networks engineers and subject matter experts. These books go beyond the technical documentation to explore the nuances of network architecture, deployment, and administration. The current list can be viewed at <http://www.juniper.net/books>.

Supported Platforms

For the features described in this document, the following platforms are supported:

- C Series

Documentation Conventions

Table 1 on page viii defines notice icons used in this guide.

Table 1: Notice Icons

Icon	Meaning	Description
	Informational note	Indicates important features or instructions.
	Caution	Indicates a situation that might result in loss of data or hardware damage.
	Warning	Alerts you to the risk of personal injury or death.
	Laser warning	Alerts you to the risk of personal injury from a laser.

Documentation Conventions

Table 1 on page viii defines the notice icons used in this guide. Table 3 on page viii defines text conventions used throughout this documentation.

Table 2: Notice Icons





Icon	Meaning	Description
	Informational note	Indicates important features or instructions.
	Caution	Indicates a situation that might result in loss of data or hardware damage.
	Warning	Alerts you to the risk of personal injury or death.
	Laser warning	Alerts you to the risk of personal injury from a laser.

Table 3: Text Conventions

Convention	Description	Examples
Bold text like this	<ul style="list-style-type: none"> Represents keywords, scripts, and tools in text. Represents a GUI element that the user selects, clicks, checks, or clears. 	<ul style="list-style-type: none"> Specify the keyword exp-msg. Run the install.sh script. Use the pkgadd tool. To cancel the configuration, click Cancel.

Table 3: Text Conventions (*continued*)

Bold text like this	Represents text that the user must type.	user@host# set cache-entry-age <i>cache-entry-age</i>
Fixed-width text like this	Represents information as displayed on your terminal's screen, such as CLI commands in output displays.	<pre> nic-locators { login { resolution { resolver-name /realms/ login/A1; key-type LoginName; value-type SaeId; } } </pre>
Regular sans serif typeface	<ul style="list-style-type: none"> Represents configuration statements. Indicates SRC CLI commands and options in text. Represents examples in procedures. Represents URLs. 	<ul style="list-style-type: none"> system ldap server{ stand-alone; Use the request sae modify device failover command with the force option user@host# ... http://www.juniper.net/techpubs/software/management/sdx/api-index.html
<i>Italic sans serif typeface</i>	Represents variables in SRC CLI commands.	user@host# set local-address <i>local-address</i>
Angle brackets	In text descriptions, indicate optional keywords or variables.	Another runtime variable is <gfwif>.
Key name	Indicates the name of a key on the keyboard.	Press Enter.
Key names linked with a plus sign (+)	Indicates that you must press two or more keys simultaneously.	Press Ctrl + b.
<i>Italic typeface</i>	<ul style="list-style-type: none"> Emphasizes words. Identifies book names. Identifies distinguished names. Identifies files, directories, and paths in text but not in command examples. 	<ul style="list-style-type: none"> There are two levels of access: <i>user</i> and <i>privileged</i>. <i>SRC-PE Getting Started Guide</i>. <i>o=Users, o=UMC</i> The <i>/etc/default.properties</i> file.
Backslash	At the end of a line, indicates that the text wraps to the next line.	<pre> Plugin.radiusAcct-1.class=\ net.juniper.smgmt.sae.plugin\ RadiusTrackingPluginEvent </pre>
Words separated by the symbol	Represent a choice to select one keyword or variable to the left or right of this symbol. (The keyword or variable may be either optional or required.)	diagnostic line

Documentation Feedback

We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation. You can send your comments to techpubs-comments@juniper.net, or fill out the documentation feedback form at

<https://www.juniper.net/cgi-bin/docbugreport/> . If you are using e-mail, be sure to include the following information with your comments:

- Document or topic name
- URL or page number
- Software release version (if applicable)

Requesting Technical Support

Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC). If you are a customer with an active J-Care or JNASC support contract, or are covered under warranty, and need post-sales technical support, you can access our tools and resources online or open a case with JTAC.

- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the *JTAC User Guide* located at <http://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf> .
- Product warranties—For product warranty information, visit <http://www.juniper.net/support/warranty/> .
- JTAC hours of operation—The JTAC centers have resources available 24 hours a day, 7 days a week, 365 days a year.

Self-Help Online Tools and Resources

For quick and easy problem resolution, Juniper Networks has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: <http://www.juniper.net/customers/support/>
- Search for known bugs: <http://www2.juniper.net/kb/>
- Find product documentation: <http://www.juniper.net/techpubs/>
- Find solutions and answer questions using our Knowledge Base: <http://kb.juniper.net/>
- Download the latest versions of software and review release notes: <http://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications: <https://www.juniper.net/alerts/>
- Join and participate in the Juniper Networks Community Forum: <http://www.juniper.net/company/communities/>
- Open a case online in the CSC Case Management tool: <http://www.juniper.net/cm/>

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: <https://tools.juniper.net/SerialNumberEntitlementSearch/>

Opening a Case with JTAC

You can open a case with JTAC on the Web or by telephone.

- Use the Case Management tool in the CSC at <http://www.juniper.net/cm/> .
- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, see <http://www.juniper.net/support/requesting-support.html> .

PART 1

Overview

- [Software Features Overview on page 3](#)
- [CoA Script Service on page 9](#)

CHAPTER 1

Software Features Overview

- [SRC Component Overview on page 3](#)

SRC Component Overview

The SRC software is a dynamic system. It contains many components that you use to build a subscriber management environment. You can use these tools to customize and extend the SRC software for your use and to integrate the SRC software with other systems. The SRC software also provides the operating system and management tools for C Series Controllers.

[Table 4 on page 3](#) gives a brief description of the components that make up the SRC software.

Table 4: Descriptions of SRC Components

Component	Description
Server Components	
Service activation engine (SAE)	<ul style="list-style-type: none">• Authorizes, activates, and deactivates subscriber and service sessions by interacting with systems such as Juniper Networks routers, cable modem termination system (CMTS) devices, RADIUS servers, and directories.• Collects accounting information about subscribers and services from routers, and stores the information in RADIUS accounting servers, flat files, and other accounting databases.• Provides plug-ins and application programming interfaces (APIs) for starting and stopping subscriber and service sessions and for integrating with systems that authorize subscriber actions and track resource usage.
Subscriber Information Collector (SIC)	Used in conjunction with the MX Series router running the packet-triggered subscribers and policy control (PTSP) solution, the SIC listens for RADIUS accounting events from IP edge devices (accounting clients) and stores them in the Session State Registrar (SSR), or forwards them to a remote AAA server, allowing the SRC software to gain increased subscriber awareness. Additionally, the SIC can optionally edit accounting events before routing them.
Juniper Policy Server (JPS)	Acts as a policy decision point (PDP) and policy enforcement point (PEP) that manages the relationships between application managers and CMTS devices in a PCMM environment.

Table 4: Descriptions of SRC Components *(continued)*

Component	Description
Network information collector (NIC)	Collects information about the state of the network and can provide a mapping from a given type of network data to another type of network data.
Redirect Server	Redirects HTTP requests received from IP Filter to a captive portal page.
3GPP Gateway	The SRC Third-Generation Partnership Project (3GPP) gateway is a Diameter-based component in the SRC software, which provides integration with 3GPP Policy and Charging Control environments, to provide fixed-mobile convergence (FMC). The SRC 3GPP gateway provides Gx-based integration with the Policy and Charging Rules Function (PCRF). The SRC 3GPP gateway uses the Gx interface to mediate between the PCRF and Juniper Networks routers like the E Series Broadband Services routers and MX Series routers. The Gx interface on the SRC 3GPP gateway communicates with the PCRF using the Diameter protocol.
Web Application Service	The SRC software includes a Web application server that hosts the Web Services Gateway and the Volume Tracking Application (SRC VTA). In production environments, this application server is designed to host only these applications. However, you can load your own applications into this server for testing or demonstration purposes.
Web Services Gateway	<p>Allows a gateway client—an application that is not part of the SRC network—to interact with SRC components through a Simple Object Access Protocol (SOAP) interface.</p> <p>The Web Services Gateway provides the Dynamic Service Activator which allows a gateway client to dynamically activate and deactivate SRC services for subscribers and to run scripts that manage the SAE.</p>
Repository	
Directory	<p>The SRC software includes the Juniper Networks database, which is a built-in Lightweight Directory Access Protocol (LDAP) directory for storing all SRC data including services, policies, and small subscriber databases.</p> <p>For large subscriber databases, you must supply your own directory.</p>
Session State Registrar (SSR)	The SSR is a stateless, highly reliable and highly available database cluster. When used in conjunction with an MX Series router running the packet-triggered subscribers and policy control (PTSP) solution, the SSR stores the IP edge attachment subscriber sessions data learned from IP edge devices in the centralized SSR database.

SRC Configuration and Management Tools

Table 4: Descriptions of SRC Components (*continued*)

Component	Description
SRC command line interface (CLI)	Provides a way to configure the SRC software on a C Series Controller from a Junos OS–like CLI. The SRC CLI includes the policies, services, and subscribers CLI, which has separate access privileges.
C-Web interface	Provides a way to configure, monitor, and manage the SRC software on a C Series Controller through a Web browser. The C-Web interface includes a policies, services, and subscribers component, which has separate access privileges.
Simple Network Management Protocol (SNMP) agent	Monitors system performance and availability. It runs on all the SRC hosts and makes management information available through SNMP tables and sends notifications by means of SNMP traps.
Service Management Applications (Run on external system)	
IMS Services Gateway	Integrates into an IP multimedia system (IMS) environment. The SRC software provides a Diameter protocol-based interface that allows the SRC software to integrate with services found on the application layer of IMS.
SRC Programming Interfaces	
NETCONF API	Allows you to configure or request information from the NETCONF server on a C Series Controller that runs the SRC software. Applications developed with the NETCONF API run on a system other than a C Series Controller.
CORBA plug-in service provider interface (SPI)	Tracks sessions and enables linking the rest of the service provider's operations support system (OSS) with the SRC software so that the OSS can be notified of events in the life cycle of SAE sessions. Hosted plug-ins only.
CORBA remote API	Provides remote access to the SAE core API. Applications that use these extensions to the SRC software run on a system other than a C Series Controller.
NIC access API	Performs NIC resolutions. Applications that use these extensions to the SRC software run on a system other than a C Series Controller.
SAE core API	Controls the behavior of the SRC software. Applications that use these extensions to the SRC software run on a system other than a C Series Controller.

Table 4: Descriptions of SRC Components (*continued*)

Component	Description
Script services	Provides an interface to call scripts that supply custom services such as provisioning policies on a number of systems across a network.
VTA API	The Volume Tracking Application (VTA) API is a Simple Object Access Protocol (SOAP) interface that allows developers to create gateway clients and that administrators use to manage VTA subscribers and sessions. The SRC Web Services Gateway allows a gateway client—an application that is not part of the SRC network—to interact with SRC components, such as the VTA, through a SOAP interface.
Authorization and Accounting Applications	
AAA RADIUS servers	Authenticates subscribers and authorizes their access to the requested system or service. Accepts accounting data—time active and volume of data sent—about subscriber and service sessions. RADIUS servers run on a system other than a C Series Controller.
SRC Admission Control Plug-In (SRC ACP)	Authorizes and tracks subscribers' use of network resources associated with services that the SRC application manages.
Flat file accounting	Stores tracking data to accounting flat files that can be made available to external systems that send the data to a rating and billing system.
Volume Tracking Application	<p>The SRC Volume Tracking Application (SRC VTA) is an SRC component that allows service providers to track and control the network usage of subscribers and services. You can control volume and time usage on a per-subscriber or per-service basis. This level of control means that service providers can offer tiered services that use volume as a metric, while also controlling abusive subscribers and applications.</p> <p>When a subscriber or service exceeds bandwidth limits (or quotas), the SRC VTA can take actions including imposing rate limits on traffic, sending an e-mail notification, or charging extra for additional bandwidth consumed.</p>
Demonstration Applications (available on the Juniper Networks Web site)	
Enterprise Audit Plug-In	Defines a callback interface, which receives events when IT managers complete specified operations.
Enterprise Manager Portal	<p>Allows service providers to provision services for enterprise subscribers on routers running JunosE or Junos OS and allows IT managers to manage services.</p> <p>Enterprise Manager Portal can be used with NAT Address Management Portal to allow service providers to manage public IP addresses for use with NAT services on routers running Junos OS and to allow IT managers to make requests about public IP addresses through the Enterprise Manager Portal.</p>

Table 4: Descriptions of SRC Components (*continued*)

Component	Description
Monitoring Agent application	Integrates IP address managers, such as a DHCP server or a RADIUS server, into an SRC-managed network so that the SAE is notified about subscriber events. The Monitoring Agent application runs on a Solaris platform.
Residential service selection portals	Provides a framework for building Web applications that allow residential and enterprise subscribers to manage their own network services. It comes with several full-featured sample Web applications that are easy to customize and suitable for deployment. The Residential service selection portals run on a Solaris platform.
Sample enterprise service portal	Lets service providers supply an interface to their business customers for managing and provisioning services.

Related Documentation

- SRC Product Description

CHAPTER 2

CoA Script Service

- [Overview of COA Script Service on page 9](#)
- [Parameters for Sample COA Script Service on page 9](#)

Overview of COA Script Service

The SAE can use change-of-authorization (COA) messages to manage services for a specific subscriber session. The COA script service allows the SAE to exchange COA messages with third-party devices that do not support Common Open Policy Service (COPS) protocol to activate or deactivate services for specific subscriber sessions. When the SAE activates a COA script service session, the session sends COA messages to a RADIUS-enabled device. This method uses RADIUS attributes and RADIUS vendor-specific attributes (VSAs) to identify a subscriber session whose services are to be activated or deactivated.

Related Documentation

- [Configuring COA Script Services on page 13](#)
- [Configuring Subscriptions to the COA Script Service on page 16](#)
- [Configuring Monitoring Agent to Receive RADIUS Accounting Messages on page 14](#)
- [Parameters for Sample COA Script Service on page 9](#)
- [Example: Using the Sample COA Script Service on page 19](#)

Parameters for Sample COA Script Service

[Table 5 on page 9](#) lists the parameters specified by the sample COA script service, which is the `/SDK/scriptServices/coa/ldif/BOD1M.ldif` file in the **SDK+AppSupport+Demos+Samples.tar.gz** file. You can use the sample script service as a starting point.

Table 5: Parameter Substitutions for COA Services

Parameter Name	Description
dynClientIp	IP address of the third-party device.
dynClientPort	UDP port number of the third-party device.

Table 5: Parameter Substitutions for COA Services *(continued)*

Parameter Name	Description
dynServerIp	IP address of the C Series Controller.
dynServerPort	UDP port number of the C Series Controller.
dynSecret	Shared secret between RADIUS server and RADIUS client.
dynRetry	Number of retries for sending COA messages when no RADIUS response is received. The retry interval is 3 seconds.
dynConfig	<p>Content of service definition in the format <code><action>. <radiusAttributeName>=<pluginEventAttribute>\n</code></p> <ul style="list-style-type: none"> • action—Action that is executed on packet content (attribute): <ul style="list-style-type: none"> • start • stop • start-stop • radiusAttributeName—Valid RADIUS attribute specified as follows: <ul style="list-style-type: none"> • Standard RADIUS attribute name or number • Third-party VSA in the format vendor-specific.<vendor#>.<vsa#>.string • pluginEventAttribute—Valid expression in the format: <ul style="list-style-type: none"> • Python expression • <code><commandCode><serviceName></code>; the entire expression must be enclosed in single quotation marks and you must use three backslashes (\\\) to escape the backslash that starts a <code><commandCode></code> For example: <code>\x0b</code> would be replaced by <code>\\\\x0b</code> • \n—New-line character included between the lines of a configuration containing multiple lines; the entire configuration must be enclosed in quotation marks. For example: start-stop.Acct-Session-Id = ifSessionId " start-stop.Acct-Session-Id=ifSessionId\nstart.vendor-specific.9.252.string=\\\\x0bBODIM"\nstop.vendor-specific.9.252.string=\\\\x0cBODIM\n"

You can also configure dynamic RADIUS requests with the `sendDynamicRadius` method of the `ServiceSessionInfo` interface (see [“Defining RADIUS Attributes for COA Requests with the API” on page 16](#)).

Related Documentation

- [Overview of COA Script Service on page 9](#)
- [Configuring Monitoring Agent to Receive RADIUS Accounting Messages on page 14](#)
- [Creating the COA Script Service \(SRC CLI\) on page 14](#)
- [Configuring COA Script Services on page 13](#)
- [Example: Using the Sample COA Script Service on page 19](#)

PART 2

Configuration

- [Configuration Tasks for CoA Script Services on page 13](#)
- [Example on page 19](#)

CHAPTER 3

Configuration Tasks for CoA Script Services

- [Configuring COA Script Services on page 13](#)
- [Configuring Monitoring Agent to Receive RADIUS Accounting Messages on page 14](#)
- [Creating the COA Script Service \(SRC CLI\) on page 14](#)
- [Configuring the COA Script Service \(SRC CLI\) on page 15](#)
- [Configuring Subscriptions to the COA Script Service on page 16](#)
- [Defining RADIUS Attributes for COA Requests with the API on page 16](#)

Configuring COA Script Services

To support COA message exchange in an SRC network, configure a script service that can be activated on a third-party device. The script service defines the parameters needed to activate or deactivate services for a subscriber session, such as the address of the third-party device. This script service is activated for the subscriber session whose services are activated or deactivated. For detailed information about configuring script services, see *Customizing Service Implementations*.

When you use the COA script service with third-party devices that do not notify the SAE about subscriber events, you must set up the Monitoring Agent application to handle RADIUS accounting request packets.

For information about configuring services on the third-party device, see the device's software documentation.

The tasks to set up the SRC software for COA message exchange are:

- [“Configuring Monitoring Agent to Receive RADIUS Accounting Messages” on page 14](#)
- [“Creating the COA Script Service \(SRC CLI\)” on page 14](#)
- [“Configuring the COA Script Service \(SRC CLI\)” on page 15](#)
- [“Configuring Subscriptions to the COA Script Service” on page 16](#)

The SRC software includes a sample script service that you can configure to exchange COA messages with the third-party device. You can use the sample service definition

and customize it for your environment by modifying the service substitutions. For information about the sample COA script service, see [“Example: Using the Sample COA Script Service” on page 19](#).

**Related
Documentation**

- [Overview of COA Script Service on page 9](#)
- [Defining RADIUS Attributes for COA Requests with the API on page 16](#)
- [Setting Up Script Services](#)
- [Parameters for Sample COA Script Service on page 9](#)

Configuring Monitoring Agent to Receive RADIUS Accounting Messages

If you install the Monitoring Agent application on the same host as the RADIUS server, you must disable the `MonAgent.radius.server` property.

You can configure Monitoring Agent to act as a pseudo-RADIUS server that listens for RADIUS accounting packets sent to the RADIUS accounting port. To receive RADIUS packets from RADIUS clients:

- Make sure there is no other RADIUS server listening on the RADIUS accounting port, and enable the `MonAgent.radius.server` property.
- Configure the shared secret between the RADIUS server and the RADIUS client by specifying the `MonAgent.radius.secret.<IP address>` property.

For information about installing and using Monitoring Agent, see the *SRC Sample Applications Guide*.

**Related
Documentation**

- [Configuring the COA Script Service \(SRC CLI\) on page 15](#)
- [Defining RADIUS Attributes for COA Requests with the API on page 16](#)

Creating the COA Script Service (SRC CLI)

To create the script service:

1. From configuration mode, enter the service configuration. In this sample procedure, the service is configured in the global service scope, and `COAservice` is the name of the service.

```
user@host# edit services global service COAservice
```

2. Configure the type of service.

```
[edit services global service COAservice]  
user@host# set type script
```

3. (Optional) Specify whether the service is visible only to administrators who have permission to see secret information.

```
[edit services global service COAservice]
```

```
user@host# set secret
```

4. Configure URL as the type of script that the sample COA script service uses.

```
[edit services global service COAservice]
user@host# set script script-type url
```

5. Configure `net.juniper.smgmt.sae.coa.CoaService` as the name of the class that implements the script service.

```
[edit services global service COAservice]
user@host# set script class-name net.juniper.smgmt.sae.coa.CoaService
```

6. Configure the URL of the script service or the path and filename of the service. Copy the `/lib/coa.jar` file used by the script service to a location that is accessible by a URL (such as an FTP or HTTP server). In this sample procedure, the `coa.jar` file was copied to the `/opt/UMC/sae/var/run` directory.

```
[edit services global service COAservice]
user@host# set file file:///opt/UMC/sae/var/run/coa.jar
```

7. (Optional) Verify your configuration.

```
[edit services global service COAservice]
user@host# show
type script;
status active;
available;
script {
  script-type url;
  class-name net.juniper.smgmt.sae.coa.CoaService;
  file file:///opt/UMC/sae/var/run/coa.jar;
}
```

After you create the script service, you need to configure parameters for the script service. For more information about configuring script services and parameters, see [Overview of SRC Script Services](#).

Related Documentation

- [Overview of COA Script Service on page 9](#)
- [Configuring Subscriptions to the COA Script Service on page 16](#)
- [Configuring COA Script Services on page 13](#)
- [Configuring the COA Script Service \(SRC CLI\) on page 15](#)
- [Parameters for Sample COA Script Service on page 9](#)

Configuring the COA Script Service (SRC CLI)

To configure the script service, you provide parameter substitutions with the values that are in the service definitions.

To configure parameters:

1. From configuration mode, enter the service parameter configuration. In this sample procedure, the service called COAservice is configured in the global service scope.

```
user@host# edit services global service COAservice parameter
```

2. (Optional) Configure actual values for other parameters.

```
[edit services global service COAservice parameter]  
user@host# set substitution [ substitution... ]
```

The script file `/SDK/scriptServices/coa/ldif/BOD1M.ldif` in the **SDK+AppSupport+Demos+Samples.tar.gz** file provides parameters specified by the sample COA script service. You can use the sample script service as a starting point. See [“Parameters for Sample COA Script Service” on page 9](#).

**Related
Documentation**

- [Overview of COA Script Service on page 9](#)
- [Configuring Subscriptions to the COA Script Service on page 16](#)
- [Creating the COA Script Service \(SRC CLI\) on page 14](#)
- [Configuring COA Script Services on page 13](#)
- [Example: Using the Sample COA Script Service on page 19](#)

Configuring Subscriptions to the COA Script Service

You need to configure subscriptions to the COA script service. You can set up the subscriptions to activate immediately on login.

For more information, see [Adding Subscribers \(SRC CLI\)](#).

**Related
Documentation**

- [Overview of COA Script Service on page 9](#)
- [Configuring COA Script Services on page 13](#)
- [Configuring the COA Script Service \(SRC CLI\) on page 15](#)
- [Example: Using the Sample COA Script Service on page 19](#)

Defining RADIUS Attributes for COA Requests with the API

The SRC software provides two ways to define RADIUS attributes for dynamic RADIUS authorization requests:

- Service definition (see [“Configuring the COA Script Service \(SRC CLI\)” on page 15](#))
- SAE core API



NOTE: Parameters set in the API override parameters set by the service definition.

To send dynamic RADIUS authorization requests with the SAE core API, the script service uses the `sendDynamicRadius` and `getRouterDynRadiusAddr` methods in the `ServiceSessionInfo` interface to provide the content of the RADIUS packet for the dynamic authorization request to the router that is attached to the service session.

For information about the `ServiceSessionInfo` interface, see the script service documentation in the SAE core API documentation on the Juniper Networks Web site at <http://www.juniper.net/techpubs/software/management/src/api-index.html>.

For a sample implementation, see the following file in the **SDK+AppSupport+Demos+Samples.tar.gz** file:

SDK/scriptServices/coa/java/net/juniper/smgt/scriptServices/coa/CoaService.java.

**Related
Documentation**

- [Overview of COA Script Service on page 9](#)
- [Configuring COA Script Services on page 13](#)
- [Creating the COA Script Service \(SRC CLI\) on page 14](#)
- [Configuring Monitoring Agent to Receive RADIUS Accounting Messages on page 14](#)

CHAPTER 4

Example

- [Example: Using the Sample COA Script Service on page 19](#)

Example: Using the Sample COA Script Service

To use the sample COA script service provided:

1. Import the sample script service using an LDAP browser.

The `/SDK/scriptServices/coa/ldif/BODIM.ldif` file (in the **SDK+AppSupport+Demos+Samples.tar.gz** file) is the sample service definition for exchanging COA messages with a Cisco 10000 Series router.

2. Copy the `/lib/coa.jar` file used by the script service to a location that is accessible to the SAE by a URL, such as an FTP or HTTP server. If you do not have multiple SAEs, it can be convenient to copy the file to the `/var/run` directory in the SAE installation directory (`/opt/UMC/sae` by default).

3. Modify the service substitutions for your device.

You can make these substitutions by defining the parameter substitutions in the BODIM service with the SRC CLI or by passing the values through the SAE core API.

For information about parameter substitutions, see [“Configuring the COA Script Service \(SRC CLI\)” on page 15](#). For information about passing the values through the SAE core API, see [“Defining RADIUS Attributes for COA Requests with the API” on page 16](#).

4. Configure a subscription to the BODIM service that is activated on login.

For more information about subscriptions, see [Overview of Subscriptions](#).

If you are modifying the sample application, add the `sae.jar` and `logger.jar` files to the classpath when you compile your application. These two files can be found in the `lib` directory of the SAE installation directory.

Related Documentation

- [Overview of COA Script Service on page 9](#)
- [Configuring Subscriptions to the COA Script Service on page 16](#)
- [Configuring COA Script Services on page 13](#)
- [Creating the COA Script Service \(SRC CLI\) on page 14](#)

PART 3

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