



Service Schedules



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Service Schedules

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About the Documentation

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Documentation and Release Notes

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

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Supported Platforms







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

- [C Series](#)

Documentation Conventions

[Table 1 on page x](#) 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.
	Tip	Indicates helpful information.
	Best practice	Alerts you to a recommended use or implementation.

Documentation Conventions

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

Table 2: Notice Icons







Icon	Meaning	Description
	Informational note	Indicates important features or instructions.
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	Laser warning	Alerts you to the risk of personal injury from a laser.
	Tip	Indicates helpful information.
	Best practice	Alerts you to a recommended use or implementation.

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.
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

Table 3: Text Conventions (*continued*)

<i>Italic sans serif typeface</i>	Represents variables in SRC CLI commands.	<code>user@host# set local-address local-address</code>
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.	<code>Plugin.radiusAcct-1.class=\ net.juniper.smgmt.sae.plugin\ RadiusTrackingPluginEvent</code>
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.)	<code>diagnostic line</code>

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: <http://kb.juniper.net/InfoCenter/>
- 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](#)
- [Service Schedules 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	
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.

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

Component	Description
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.
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.

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

Component	Description
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 all IT managers to make requests about public IP addresses through the Enterprise Manager Portal.</p>
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.

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

Component	Description
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

Service Schedules

- [Service Schedules Overview on page 9](#)
- [Schedule Configuration Guidelines on page 14](#)
- [Guidelines for Entering Time Values for Service Schedules on page 15](#)
- [Authorizing Scheduled Services Overview \(SRC CLI\) on page 16](#)

Service Schedules Overview

Service schedules define when specified services will be activated or deactivated and can also indicate when specified services are available or unavailable to subscribers. You can configure a service schedule for all subscribers to a service, or for a selected subscriber or subscribers. Schedules are composed of a number of rules expressed as schedule entries in the schedule configuration.

You can exclude specified times, such as a day of the week, a specific date, or a time interval, from schedule rules. These times are referred to as schedule exclusions.

There are three types of schedules:

- **Event-based schedules**—The SAE activates or deactivates a service at a specified time. You specify the time the action is to occur, and any intervals to extend that time.
- **Authorization schedules**—The SAE allows or disallows access to a service during a specified interval; it can also deactivate sessions for current subscribers to a service at the beginning or end of an interval.
- **State-based schedules**—The SAE controls the times at which a service is available. Subscribers cannot change these schedules.

Event-Based Schedules

For each rule in event-based schedules, you specify a time at which the SAE activates or deactivates a specified service. In most cases for schedules configured under the global service configuration (for example, `o=Services`), a subscriber must be logged in at the time that the event occurs. For example, if a service is scheduled to be activated at 8 AM, the subscriber must already be logged in to the system at 8 AM.

You can extend the time at which a scheduled action can be initiated by configuring the following for event-based schedules:

- Action threshold—Interval after a scheduled time that an action can occur. The action threshold is configured globally for the SAE server.
- Preparation time—Interval before a scheduled time that an action can occur. The preparation time is configured globally for the SAE server.

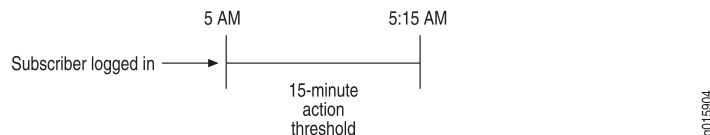
Extending the time gives subscribers flexibility in when they can log in and in the time they can perform a task. It also gives the system time to complete a transition from one state to another and distributes the load on the system.

You can also configure an interval after a scheduled time that an action can occur for individual schedules and event-based schedules.

Action Threshold

The action threshold indicates the maximum delay that a service allows for a time-related change to occur. For example, you can allow a 15-minute delay so that if an event is scheduled for 5:00 AM but the system is not able to perform the event at 5:00 AM, the SAE attempts to perform the action until 5:15 AM, as shown in [Figure 1 on page 10](#).

Figure 1: Sample Action Threshold

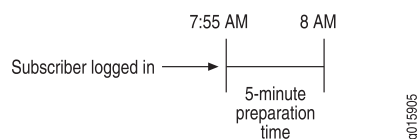


Preparation Time

Because the transition from one state to another does not occur instantaneously, the SAE uses the preparation time to allow for the time that the SAE needs to make the transition. For example, if you have a pay-per-view service and many subscribers need to have the service activated by a certain time, you can configure the service schedule preparation time to begin the process early to make sure that everyone gets his or her service activated by the time the event starts. Or you could schedule a few minutes of preparation time for setting up a videoconference.

A preparation time applies only to subscribers who have a service schedule and who are logged in to their subscriber session before the preparation time starts. For example, if you define a service schedule that activates service Audio-Gold at 8:00 AM, this service is activated only for subscribers who are subscribed to this service and are logged in as of 7:55 AM (assuming a default preparation time of 5 minutes). The service is not activated for subscribers who log in between 7:55 AM and 8:00 AM, as shown in [Figure 2 on page 10](#).

Figure 2: Sample Preparation Time





NOTE: To avoid applying the preparation time of a service to scheduled deactivate events of the service, set the `disable-preparation-time` option under the `[edit shared sae configuration time-based-policies]` hierarchy. When this option is set, the SRC software does not calculate the preparation time for scheduled events that contain only deactivate actions. You can enable the `disable-preparation-time` option to ensure that the preparation time is applied only to activate events at the beginning of the service and not to deactivate events at the end of the service. The preparation time is applied to scheduled events that contain various action types (such as activate, deactivate, deny, and deny-deactivate) even though the `disable-preparation-time` option is enabled.

Authorization Schedules

SAE uses authorization schedules to restrict access to both activate-on-login (AOL) services and manual services during a specified time period. For an authorization schedule, the types of action can be:

- Deny—Denies service activations in the specified time period and does not deactivate services that are already active for current subscribers.
- Deny deactivate—Denies new activation requests during the specified time period and deactivates the service sessions that are already active for current subscribers.

For authorization schedules, a service is either available or unavailable. You can configure intervals during which subscribers can log in and activate a specified service and intervals during which subscribers cannot activate a specified service. In addition, an authorization schedule can deactivate a service at a specified time for subscribers who are using the service.

For example, you could use an authorization schedule to offer a service only between 5 PM and 8 PM. In this case, you can configure a schedule that denies activation of the service during any other time period. If a subscriber attempts to activate the service at a time other than between 5 PM and 8 PM, the activation is denied.

You can configure authorization schedules only for services that use authorization; that is, a service configured to use an authorization plug-in, such as the `scheduleAuth` plug-in provided by the sample data.

State-Based Schedules

For state-based schedules, you create service schedules that are controlled administratively. A state-based schedule defines when a service is available or unavailable.

For example, you could configure a schedule to provide a service at 5 Mbps from 8 AM to 4 PM and another service at 2 Mbps from 3:45 PM to 8:15 AM. The time overlap ensures that one of the services is available at transition time.

You create state-based service schedules from:

- Enterprise Manager Portal—Service providers make schedules available to IT managers in enterprises. IT managers can then configure service schedules for their enterprises.

See the *SRC PE Sample Applications Guide*.

- An application that uses the CORBA remote API—You can incorporate service schedules, including schedules that affect subscriber sessions, in an application that has been created with the CORBA remote API, such as a residential portal.



NOTE: The only way to associate a session with a service schedule is through the CORBA remote API.

For information about the residential portal, see the *SRC PE Sample Applications Guide*.

For information about the SAE CORBA remote API, see the documentation for the API on the Juniper Networks website at

<http://www.juniper.net/techpubs/software/management/src/api-index.html>.

Effective Period for Service Activation or Deactivation

You can configure an effective period for a schedule rule to give subscribers an opportunity to take advantage of a scheduled action for a specified amount of time, rather than for one specific time. If users log in after a scheduled action but before the end of the effective period, they can take advantage of the service. Although similar to an action threshold, an effective period can be configured for each schedule rule, whereas the action threshold applies to all schedules on an SAE.

An effective period is active for service schedules assigned to subscribers under the subscriber tree (for example, *o=Users*), but not for services under the global service configuration or a defined service scope (for example, *o=Services* or *o=Scopes*).

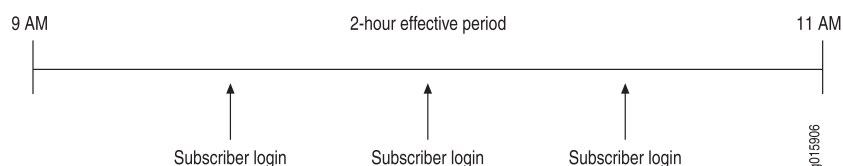
An effective period applies to subscribers who:

- Have a service schedule that includes an effective period
- Are logging in to their subscriber session

An effective period does not apply to subscribers who are already logged in to the system.

For example, you could create a schedule that includes a scheduled event to start at 9 AM and an effective period of 2 hours; subscribers can log in between 9 AM and 11 AM and have the event take place, as shown in [Figure 3 on page 12](#).

Figure 3: Sample Effective Period



You can use effective periods rather than activate-on-login for subscriptions. If activate-on-login is configured for a subscription, we recommend that the service for the subscription not have an effective period configured.



NOTE: If an effective period is configured so that it overlaps with an excluded time, the scheduled event does not take place because it is within an excluded time period. To clearly define when a scheduled event can occur, do not configure an effective period to overlap with an excluded time.

One-Time Events and Recurring Events

You can specify service schedules for numerous situations. For example, you can set up:

- A one-time event—Performs an action at a specified time; for example, activating a gold Internet service at 7:00 AM on January 1, 2006.
- A recurring event—Performs an action over a period of time at specified intervals; for example, activating a gold video service at 7:00 AM every morning.
- A working-hours service—Performs actions at specified times on Monday through Friday; for example, a gold Internet service that is activated Monday through Friday at 8:00 AM and deactivated Monday through Friday at 5:00 PM. This type of service requires two schedule entries—one that activates the service and one that deactivates the service.

Schedule Availability to Subscribers

Which subscribers a service schedule affects depends on the configuration for the schedule. [Table 5 on page 13](#) shows which subscribers are affected by a schedule.

Table 5: Schedule Availability to Service Subscribers

Schedule Configured for This Object	Applies to These Subscribers
Service	All subscribers to that service
Scope	All subscribers to the specified service in that scope
Retailer	Any subscriber subordinate to the retailer for whom the service schedule is configured
Subscriber	The subscriber for whom the service schedule is configured or, in the case of enterprise subscribers, any subscribers subordinate to that subscriber

When a service provider or IT manager creates a schedule and attaches it to a service, the service schedule can be assigned to enterprise subscribers or residential subscribers. In some instances, subscribers can also create their own service schedules. When the

scheduled action occurs, it applies to subscribers who are logged in and have a subscription to the scheduled service.

Schedule Exclusions

You can also exclude specific time intervals from a service schedule. For example, you can set:

- A holiday schedule—Ignores the service schedule for a specified day; for example, for January 1.
- A promotional period—Ignores the service schedule for a specified interval; for example, a 2-week period after the start date for the promotion.

Excluded times can apply to event schedules and authorization schedules. You can create numerous exclusion intervals to specify different actions and different times.

Related Documentation

- [Schedule Configuration Guidelines on page 14](#)
- [Planning Service Schedules on page 21](#)
- [Setting the Action Threshold and Preparation Time \(SRC CLI\) on page 22](#)
- [Associating the Authorization Plug-In with a Scheduled Service \(SRC CLI\) on page 25](#)
- [Adding a Service Schedule \(SRC CLI\) on page 26](#)
- [Authorizing Scheduled Services Overview \(SRC CLI\) on page 16](#)

Schedule Configuration Guidelines

Use the following guidelines when you plan and configure service schedules:

- Do not configure schedules for services that are configured as persistent services on the router.
- If activate-on-login is configured for a subscription, do not configure an effective period in a schedule for the associated service.
Consider changing the configuration for this subscription to use an effective period, rather than activate-on-login.
- Make sure you know the values for preparation time and action threshold that have been configured for the SAE.
- Do not configure an effective period to overlap with an excluded time.
- To avoid schedule conflicts, configure one service schedule to include all rules that control a service.
- Determine whether or not a service to be scheduled has an authorization plug-in configured. If an authorization plug-in is configured for a service, you can create an authorization schedule for that service.
- Create a schedule for a service under one of the following:
 - The subscriber tree (for example, *o=Users*)

- The global service configuration (for example, `o=Services`)
- A defined service scope (for example, `o=Scopes`)
- Do not specify the time in a schedule entry that is more than 5 years in the past or 15 years in the future.

Related Documentation

- [Service Schedules Overview on page 9](#)
- [Planning Service Schedules on page 21](#)
- [Associating the Authorization Plug-In with a Scheduled Service \(SRC CLI\) on page 25](#)

Guidelines for Entering Time Values for Service Schedules

When you enter time schedules, you can use the values in the following list. See “[Setting the Time Schedule \(SRC CLI\)](#)” on page 34 for a description of the options.



NOTE: Dates in the **to** statements apply only to services that have an authorization plug-in configured. If an authorization plug-in is not configured for the service associated with the schedule, the entries in the **to** statements are ignored.

- *—Asterisks are interpreted as follows:
 - Minutes and hours:
 - 0 if used in the **from** or **to** statements of a scheduled event
 - First or last if used in the statements of a schedule exclusion
 - Time zones—Local SAE time zone
 - All other options—First through last
 - For options in the **to** statements, * for the end time is equivalent to “deny service activation after this start date.”
 - For dates in the **from** statements, * is equivalent to “deny service activation before this end date.”
- Range of numbers separated by a hyphen. The range is inclusive; for example, 1-5 for the hour specifies hours 1, 2, 3, 4, and 5.
- List of numbers or ranges separated by commas. For example, 1,2,5,9 or 0-4,8-12.
- Skip values in ranges:
 - To skip a number’s value through the range, follow a range with /<number>. For example, 0-23/2 used in the **hour** option specifies that the event occurs every other hour.
 - Skip values with *. If you want to specify every two hours, use */2.

**NOTE:**

- In general, if you set both a **day-of-month** and a **day-of-week**, then the service scheduler uses the **day-of-month** configuration. However, using the weekly recurrence feature, if you set both a **day-of-month** and a **day-of-week**, then the service scheduler uses the **day-of-week** configuration.
- When the **day-of-week** is configured and the **weekly-recur-freq** is set to a value greater than 1, then the service scheduler performs the scheduled service changes based on the **weekly-recur-freq** configuration, whereas if the **weekly-recur-freq** is set to 0 or 1, then the service scheduler performs the scheduled service changes based on the **day-of-week** configuration.

- Related Documentation**
- [Service Schedules Overview on page 9](#)
 - [Adding a Service Schedule \(SRC CLI\) on page 26](#)
 - [Schedule Configuration Guidelines on page 14](#)

Authorizing Scheduled Services Overview (SRC CLI)

To configure authorization of scheduled services, you need to create an authorization plug-in and associate the authorization plug-in with a service that requires authorization before it can be activated. Then you create the authorization schedule for the service at either the global or retailer level.

To authorize scheduled services:

1. Create an authorization plug-in for a scheduled service.
See [““Creating an Authorization Plug-In for a Scheduled Service \(SRC CLI\)” on page 24”](#).
2. Associate the authorization plug-in with a service.
See [““Associating the Authorization Plug-In with a Scheduled Service \(SRC CLI\)” on page 25”](#).
3. Create the authorization schedule for the service at either the global or retailer level.
See [““Adding a Service Schedule \(SRC CLI\)” on page 26”](#).
For more information about substitutions and schedules, see [““Example: Configuring Different Service Tiers for Different Days \(SRC CLI\)” on page 39”](#).

- Related Documentation**
- [Service Schedules Overview on page 9](#)
 - [Authorizing Scheduled Services \(C-Web Interface\) on page 26](#)
 - [Defining Attributes for Service Activation \(SRC CLI\) on page 37](#)
 - [Example: Configuring a Service to Be Active During Nonwork Hours \(SRC CLI\) on page 43](#)

- [Example: Configuring a Service to Be Available for a Specified Interval \(SRC CLI\) on page 49](#)
- [Example: Configuring the Scheduler to Activate Services with a Weekly Recurrence Pattern for a Specified Time Period \(SRC CLI\) on page 52](#)

PART 2

Configuration

- Configuration Tasks on page 21
- Examples on page 39

CHAPTER 3

Configuration Tasks

- [Planning Service Schedules on page 21](#)
- [Setting the Action Threshold and Preparation Time \(SRC CLI\) on page 22](#)
- [Setting the Action Threshold and Preparation Time \(C-Web Interface\) on page 24](#)
- [Creating an Authorization Plug-In for a Scheduled Service \(SRC CLI\) on page 24](#)
- [Associating the Authorization Plug-In with a Scheduled Service \(SRC CLI\) on page 25](#)
- [Authorizing Scheduled Services \(C-Web Interface\) on page 26](#)
- [Adding a Service Schedule \(SRC CLI\) on page 26](#)
- [Adding a Service Schedule \(C-Web Interface\) on page 28](#)
- [Setting the Time Schedule \(SRC CLI\) on page 34](#)
- [Setting the Action for a Service Schedule \(SRC CLI\) on page 36](#)
- [Defining Attributes for Service Activation \(SRC CLI\) on page 37](#)

Planning Service Schedules

Before you configure service schedules, carefully plan individual rules for the schedule to avoid conflicts between the rules. The rules become entries when you configure the schedule. The SAE evaluates each schedule entry independently of the others.

The following list of planning activities applies to both event-based and authorization schedules unless otherwise indicated.

For each service schedule:

1. Decide whether to configure the schedule for a group of subscribers. Configure a schedule that includes rules for the same service under only one of the following:
 - The global service configuration (for example, *o=Services*)
 - A defined service scope *o=Scopes*)
 - The subscriber tree *o=Users*)
2. For each rule in a service schedule, list the following information for each service included in the schedule:
 - Time to activate the service and any effective time associated with this action.

- Time to deactivate the service.

or

(Optional for authorization schedules) Time to deny or to deny and deactivate the service.

Times can include a date and day of the week.

3. (Event-based schedules) Make sure that the scheduled times take into consideration a preparation time or an action threshold that has been configured for the SAE.

For example, if a schedule entry activates a service at 8:00, a schedule entry to deny access to the service should have a time before 8:00, such as 7:59. If a preparation time of 15 minutes is configured for the SAE, a schedule entry to deny access to the service should have a time before 7:45. The deny period ends before the service can be activated, with the time between the end of the deny interval and the activation time greater than the preparation time.

4. List any exclusions to a schedule, including:

- Time the exclusion starts
- Time the exclusion ends

Times can include a date and day of the week.

5. Review all rules for the schedule, and make sure that individual rules do not conflict with one another. Make sure that activate and deactivate times do not overlap for the same service.

Related Documentation

- [Service Schedules Overview on page 9](#)
- [Schedule Configuration Guidelines on page 14](#)
- [Adding a Service Schedule \(SRC CLI\) on page 26](#)
- [Associating the Authorization Plug-In with a Scheduled Service \(SRC CLI\) on page 25](#)

Setting the Action Threshold and Preparation Time (SRC CLI)

You can set the action threshold and preparation time for all schedules; you cannot set these values for individual schedules.

Use the following configuration statements to set the action threshold and preparation time:

```
shared sae configuration time-based-policies {  
    action-threshold action-threshold;  
    disable-preparation-time;  
    preparation-time preparation-time;  
    max-worker-threads max-worker-threads;  
}
```

To set the action threshold and preparation time for an SAE:

1. From configuration mode, access the configuration statement that configures time-based policies.

```
user@host# edit shared sae configuration time-based-policies
```

2. Configure the maximum delay that the service allows for a time-related change to occur. The recommended range is 60,000–300,000 milliseconds. The minimum value supported is 60,000 milliseconds.

```
[edit shared sae configuration time-based-policies]
user@host# set action-threshold action-threshold
```

3. Configure the preparation time permitted for a state transition.

```
[edit shared sae configuration time-based-policies]
user@host# set preparation-time preparation-time
```

When you set a value for the preparation time, take into consideration system load and performance. Factors such as the number of subscribers, the number of active services, the number of schedule services, the speed of the processor on the system, as well as other conditions might affect the amount of time to process all the scheduled actions at a specified schedule time.

4. (Optional) Enable the **disable-preparation-time** option to prevent the SRC software from calculating the preparation time for scheduled events that contain only deactivate actions. By default, the **disable-preparation-time** option is disabled and the preparation time is calculated for all scheduled events, including those that contain only deactivate actions.

```
[edit shared sae configuration time-based-policies]
user@host# set disable-preparation-time
```



NOTE: You can enable the **disable-preparation-time** option to ensure that the preparation time is applied only to activate events at the beginning of the service, and not to deactivate events at the end of the service. The preparation time is applied to scheduled events that contain various action types (such as activate, deactivate, deny, and deny-deactivate) even though the **disable-preparation-time** option is enabled.

5. (Optional) Configure the maximum number of threads for service scheduling.

```
[edit shared sae configuration time-based-policies]
user@host# set max-worker-threads max-worker-threads
```

6. (Optional) Verify your configuration.

```
[edit shared sae configuration time-based-policies]
user@host# show
action-threshold 1;
disable-preparation-time;
max-worker-threads 1;
preparation-time 1;
```

- Related Documentation**
- [Service Schedules Overview on page 9](#)
 - [Adding a Service Schedule \(SRC CLI\) on page 26](#)
 - [Setting the Action Threshold and Preparation Time \(C-Web Interface\) on page 24](#)
 - [Setting the Time Schedule \(SRC CLI\) on page 34](#)
 - [Setting the Action for a Service Schedule \(SRC CLI\) on page 36](#)

Setting the Action Threshold and Preparation Time (C-Web Interface)

You can set the action threshold and preparation time for all schedules; you cannot set these values for individual schedules.

To set the action threshold and preparation time for an SAE:

1. Click **Configure**, expand **Shared>SAE>Configuration**, and click **Time Based Policies**.
The Time Based Policies pane appears.
2. Click the **Create** button.
3. Enter the information as described in the Help text in the main pane, and click **Apply**.

- Related Documentation**
- [Service Schedules Overview on page 9](#)
 - [Adding a Service Schedule \(C-Web Interface\) on page 28](#)
 - [Setting the Action Threshold and Preparation Time \(SRC CLI\) on page 22](#)

Creating an Authorization Plug-In for a Scheduled Service (SRC CLI)

To create an authorization plug-in that authorizes a scheduled service, you need to configure the authorization plug-in to authorize the scheduled service by specifying the name of the plug-in that authorizes the schedule in the service definition.

To create an authorization plug-in:

1. From configuration mode, enter the following configuration statement.

```
[edit]  
user@host# edit shared sae configuration plugins name name schedule-authorization
```

- Related Documentation**
- [Associating the Authorization Plug-In with a Scheduled Service \(SRC CLI\) on page 25](#)
 - [Authorizing Scheduled Services Overview \(SRC CLI\) on page 16](#)
 - [Adding a Service Schedule \(SRC CLI\) on page 26](#)
 - [Authorizing Scheduled Services \(C-Web Interface\) on page 26](#)
 - [Defining Attributes for Service Activation \(SRC CLI\) on page 37](#)

Associating the Authorization Plug-In with a Scheduled Service (SRC CLI)

After you create an authorization plug-in, you need to associate it with a scheduled service. A scheduled service needs to be authenticated before it is activated.

To authenticate a scheduled service, specify the name of the authentication plug-in in the service definition. The default schedule authorization plug-in is named `scheduleAuth`.

Use the following configuration statement to configure an authorization plug-in for a service configured in the global configuration:

```
services global service name {
  authorization-plug-in [authorization-plug-in...];
}
```

Use the following configuration statement to configure an authorization plug-in for a service configured in the service scope:

```
services scope name service name {
  authorization-plug-in [authorization-plug-in...];
}
```

To define an authorization plug-in for a service:

1. From configuration mode, access the configuration statement that configures the service configuration in the global configuration or in the service scope.

```
user@host# edit services global service name
user@host# edit services scope name service name
```

For example, to configure the service named `Video-Gold` in the global configuration:

```
user@host# edit services global service Video-Gold
```

2. Enter the name of the authorization plug-in that will authorize the schedule for this service.

```
user@host# set authorization-plug-in [authorization-plug-in...]
```

For example, to specify the default schedule authorization plug-in:

```
user@host# set authorization-plug-in scheduleAuth
```

Related Documentation

- [Creating an Authorization Plug-In for a Scheduled Service \(SRC CLI\) on page 24](#)
- [Authorizing Scheduled Services Overview \(SRC CLI\) on page 16](#)
- [Service Schedules Overview on page 9](#)
- [Adding a Service Schedule \(SRC CLI\) on page 26](#)
- [Authorizing Scheduled Services \(C-Web Interface\) on page 26](#)
- [Defining Attributes for Service Activation \(SRC CLI\) on page 37](#)

Authorizing Scheduled Services (C-Web Interface)

You can configure an authorization plug-in to authorize a scheduled service in the following ways:

1. [Defining an Authorization Plug-In for a Scheduled Service in the Global Configuration \(C-Web Interface\) on page 26](#)
2. [Defining an Authorization Plug-In for a Scheduled Service in the Service Scope \(C-Web Interface\) on page 26](#)

Defining an Authorization Plug-In for a Scheduled Service in the Global Configuration (C-Web Interface)

To define an authorization plug-in for a scheduled service in the global configuration:

1. Click **Configure**, and expand **Services>Global**.
The Global pane appears.
2. Click the specified **Service**.
The Service: *<name>* pane appears.
3. In the Authorization Plug In box, select the name of the authorization plug-in that will authorize the schedule for this service. For example, select **scheduleAuth** in the Suggested values box, and click the right arrow to move it to the Selected values box.
4. Click **Apply**.

Defining an Authorization Plug-In for a Scheduled Service in the Service Scope (C-Web Interface)

To define an authorization plug-in for a scheduled service in the service scope:

1. Click **Configure**, and expand **Services** and the specified scope.
2. Click the specified service.
The Service: *<name>* pane appears.
3. In the Authorization Plug In box, select the name of the authorization plug-in that will authorize the schedule for this service. For example, select **scheduleAuth** in the Suggested values box, and click the right arrow to move it to the Selected values box.
4. Click **Apply**.

Related Documentation

- [Adding a Service Schedule \(C-Web Interface\) on page 28](#)

Adding a Service Schedule (SRC CLI)

You can create a service schedule for the following objects:

- Scopes
- Services
- Retailers
- Enterprises
- Subscribers in an enterprise



NOTE: If you change or remove the name of a service that is referenced by a schedule, the SRC software treats this case like one in which no subscribers have a subscription to this service. In both cases, the action for the service is not taken. The software does not regard either case as an error in the schedule; a failure is not reported.

Use the following statements to configure a service schedule:

```
schedule name {
  description description;
}
```

To add a service schedule:

1. From configuration mode, access the configuration statement that configures the service schedule for the objects for which you can create a service schedule. Enter a unique name for the service schedule.

For example:

```
user@host# edit services scope name schedule name
```

```
user@host# edit services global schedule name
```

```
user@host# edit subscribers retailer name schedule name
```

```
user@host# edit subscribers retailer name subscriber-folder folder-name enterprise
name schedule name
```

```
user@host# edit subscribers retailer name subscriber-folder folder-name subscriber
name schedule name
```

2. (Optional) Describe the service schedule.

```
user@host# set description description
```

3. Create schedule entries for the service schedule. A number of schedule entries, or rules, constitute each service schedule.

```
user@host# set event name
```

An entry consists of the schedule time, any excluded times, and a list of actions. To create an entry:

- Specify the time schedule.
See “Setting the Time Schedule (SRC CLI)” on page 34.
- Specify the actions.
See “Setting the Action for a Service Schedule (SRC CLI)” on page 36.

Related Documentation

- [Service Schedules Overview on page 9](#)
- [Planning Service Schedules on page 21](#)
- [Associating the Authorization Plug-In with a Scheduled Service \(SRC CLI\) on page 25](#)
- [Adding a Service Schedule \(C-Web Interface\) on page 28](#)
- [Example: Configuring a Service to Be Active During Nonwork Hours \(SRC CLI\) on page 43](#)
- [Example: Configuring a Service to Be Available for a Specified Interval \(SRC CLI\) on page 49](#)
- [Authorizing Scheduled Services Overview \(SRC CLI\) on page 16](#)

Adding a Service Schedule (C-Web Interface)

The following tasks describe how to create service schedules for SRC objects:

1. [Adding a Service Schedule for Scopes \(C-Web Interface\) on page 28](#)
2. [Adding a Service Schedule for Services \(C-Web Interface\) on page 29](#)
3. [Adding a Service Schedule for Retailers \(C-Web Interface\) on page 30](#)
4. [Adding a Service Schedule for Enterprises \(C-Web Interface\) on page 30](#)
5. [Adding a Service Schedule for Subscribers in an Enterprise \(C-Web Interface\) on page 31](#)
6. [Setting the Time Schedule \(C-Web Interface\) on page 32](#)
7. [Setting the Action \(C-Web Interface\) on page 33](#)
8. [Defining Attributes for Service Activation \(C-Web Interface\) on page 33](#)

Adding a Service Schedule for Scopes (C-Web Interface)

To add a service schedule for scopes:

1. Click **Configure**, expand **Services**, and click the specified scope.
The Scope:<name> pane appears.
2. From the Create new list, select **Schedule**.
3. In the dialog box, enter a name for the new Schedule, and click **OK**.
The Schedule:<name> pane appears.

4. In the Description box, type a unique name for the service schedule, and click **Apply**.
5. A number of schedule events, or rules, constitute each service schedule. To create schedule events for the service schedule:
 - a. From the Create new list, select **Event**.
 - b. In the dialog box, type a name for the new Event, and click **OK**.

An event consists of the schedule time, any excluded times, and a list of actions.

- To specify the time schedule, see [“Setting the Time Schedule \(C-Web Interface\)” on page 32](#).
- To specify the actions, see [“Setting the Action \(C-Web Interface\)” on page 33](#).



NOTE: If you change or remove the name of a service that is referenced by a schedule, the SRC module treats this case like one in which no subscribers have a subscription to this service. In both cases, the action for the service is not taken. The software does not regard either case as an error in the schedule; a failure is not reported.

Adding a Service Schedule for Services (C-Web Interface)

To add a service schedule for services:

1. Click **Configure**, expand **Services**, and click **Global**.
The Global pane appears.
2. From the Create new list, select **Schedule**.
3. In the dialog box, enter a name for the new Schedule, and click **OK**.
The Schedule: *<name>* pane appears.
4. In the Description box, type a name for the service schedule, and click **Apply**.
5. A number of schedule events, or rules, constitute each service schedule. To create schedule events for the service schedule:
 - a. From the Create new list, select **Event**.
 - b. In the dialog box, type a name for the new Event, and click **OK**.

An event consists of the schedule time, any excluded times, and a list of actions.

- To specify the time schedule, see [“Setting the Time Schedule \(C-Web Interface\)” on page 32](#).
- To specify the actions, see [“Setting the Action \(C-Web Interface\)” on page 33](#).



NOTE: If you change or remove the name of a service that is referenced by a schedule, the SRC module treats this case like one in which no subscribers have a subscription to this service. In both cases, the action for the service is not taken. The software does not regard either case as an error in the schedule; a failure is not reported.

Adding a Service Schedule for Retailers (C-Web Interface)

To add a service schedule for retailers:

1. Click **Configure**, expand **Subscribers**, and click a specified retailer.
The Retailer: <name> pane appears.
2. From the Create new list, select **Schedule**.
3. In the dialog box, enter a name for the new Schedule, and click **OK**.
The Schedule: <name> pane appears.
4. In the Description box, type a name for the service schedule, and click **Apply**.
5. A number of schedule events, or rules, constitute each service schedule. To create schedule events for the service schedule:
 - a. From the Create new list, select **Event**.
 - b. In the dialog box, type a name for the new Event, and click **OK**.

An event consists of the schedule time, any excluded times, and a list of actions.

- To specify the time schedule, see [“Setting the Time Schedule \(C-Web Interface\)” on page 32](#).
- To specify the actions, see [“Setting the Action \(C-Web Interface\)” on page 33](#).



NOTE: If you change or remove the name of a service that is referenced by a schedule, the SRC module treats this case like one in which no subscribers have a subscription to this service. In both cases, the action for the service is not taken. The software does not regard either case as an error in the schedule; a failure is not reported.

Adding a Service Schedule for Enterprises (C-Web Interface)

To add a service schedule for enterprises:

1. Click **Configure**, and expand **Subscribers**.
2. Navigate to the enterprise for which you want to configure a schedule. For example, expand the following specified folders:
retailer>subscriber folder>enterprise>schedule.

The Schedule: <name> pane appears.

3. From the Create new list, select **Schedule**.
4. In the dialog box, enter a name for the new Schedule, and click **OK**.

The Schedule: <name> pane appears.

5. In the Description box, type a name for the service schedule, and click **Apply**.
6. A number of schedule events, or rules, constitute each service schedule. To create schedule events for the service schedule:
 - a. From the Create new list, select **Event**.
 - b. In the dialog box, type a name for the new Event, and click **OK**.

An event consists of the schedule time, any excluded times, and a list of actions.

- To specify the time schedule, see [“Setting the Time Schedule \(C-Web Interface\)” on page 32](#).
- To specify the actions, see [“Setting the Action \(C-Web Interface\)” on page 33](#).



NOTE: If you change or remove the name of a service that is referenced by a schedule, the SRC module treats this case like one in which no subscribers have a subscription to this service. In both cases, the action for the service is not taken. The software does not regard either case as an error in the schedule; a failure is not reported.

Adding a Service Schedule for Subscribers in an Enterprise (C-Web Interface)

To add a service schedule for subscribers in an enterprise:

1. Click **Configure**, and expand **Subscribers**.
2. Navigate to the schedule configuration for the specified schedule. For example, expand the following specified folders:
retailer>subscriber folder>subscriber>schedule.

The Schedule: <name> pane appears.

3. From the Create new list, select **Schedule**.
4. In the dialog box, enter a name for the new Schedule, and click **OK**.

The Schedule: <name> pane appears.

5. In the Description box, type a description for the service schedule, and click **Apply**.
6. A number of schedule events, or rules, constitute each service schedule. To create schedule events for the service schedule:
 - a. From the Create new list, select **Event**.
 - b. In the dialog box, type a name for the new Event, and click **OK**.

An event consists of the schedule time, any excluded times, and a list of actions.

- To specify the time schedule, see “[Setting the Time Schedule \(C-Web Interface\)](#)” on page 32.
- To specify the actions, see “[Setting the Action \(C-Web Interface\)](#)” on page 33.



NOTE: If you change or remove the name of a service that is referenced by a schedule, the SRC module treats this case like one in which no subscribers have a subscription to this service. In both cases, the action for the service is not taken. The software does not regard either case as an error in the schedule; a failure is not reported.

Setting the Time Schedule (C-Web Interface)

Before you configure the time schedule, create the schedule.

When you set up a time schedule for an event, you specify:

- For event schedules—Time at which an action is to occur; the from date and time information
- For schedules for services that have authorization configured—Beginning and end of the interval; the to date and time information
- For exclusions—Times to be excluded from that schedule

To configure the time schedule:

1. Click **Configure**, and navigate to the specified service schedule.
2. From the Create new list, select **Except** (to set an exclusion).
3. In the dialog box, type a name for the new Except. The specified name is not stored as an identifier, so the arbitrary value can be as simple as a number.
4. Click **From** in the side pane.

The From pane appears.

5. Click the **Create** button.

The From pane reappears. This pane allows you to specify the effective period in which to schedule the event. This period is the interval after the associated from or to time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

6. Enter the information as described in the Help text in the main pane, and click **Apply**.
7. Click **To** in the side pane.

The To pane appears.

8. Click the **Create** button.

The To pane reappears. This pane allows you to specify the effective period in which to schedule the event. This period is the interval after the associated from or to time

during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

9. Enter the information as described in the Help text in the main pane, and click **Apply**.

Setting the Action (C-Web Interface)

Before you configure the time schedule, create the schedule.

To configure the actions for the service schedule:

1. Click **Configure**, and navigate to the specified service schedule.
2. Click **Event** in the side pane.

The Event: *<name>* pane appears.

3. From the Create new list:

- a. Select **Action**.

- b. In the dialog box, type a name for the new Action, and click **OK**. The specified name is not stored as an identifier, so the arbitrary value can be as simple as a number.

The Action: *<name>* pane appears.

4. Enter the information as described in the Help text in the main pane, and click **Apply**.
 - The Type values (deny and deny-deactivate) apply only to services that have an authorization plug-in configured. For more information, see “[Authorizing Scheduled Services \(C-Web Interface\)](#)” on page 26.
 - For more information about the Substitution box, see the activateService method of the SAE external interface in the SAE CORBA remote API documentation on the Juniper Networks Web site at

<http://www.juniper.net/techpubs/software/management/src/api-index.html>

Defining Attributes for Service Activation (C-Web Interface)

To define the attributes for service activation:

1. Click **Configure** and access the service schedule for the objects for which you can create a service schedule. The following example provides steps for defining attributes for service activation for a subscriber action.
2. Expand **Subscribers** and expand the following specified folders: retailer>subscriber folder>subscriber>schedule>event>action.
3. Click **Attribute**.

The Attribute pane appears.

4. From the Create new list, select the attribute to set before the service is activated.

The Attribute *<name>* pane appears.

5. In the dialog box, type a value as described in the Help text in the main pane, and click **Apply**.

Subscription attributes apply only to service activations.

**Related
Documentation**

- [Service Schedules Overview on page 9](#)
- [Planning Service Schedules on page 21](#)
- [Authorizing Scheduled Services \(C-Web Interface\) on page 26](#)
- [Adding a Service Schedule \(SRC CLI\) on page 26](#)

Setting the Time Schedule (SRC CLI)

When you set up a time schedule, you specify:

- For event schedules—Time at which an action is to occur; the from date and time information
- For schedules for services that have authorization configured—Beginning and end of the interval; the to date and time information
- For exclusions—Times to be excluded from that schedule

Use the following statements to configure a time schedule for an event:

```
schedule name event name from {
    effective effective;
    hour hour;
    minute minute;
    day-of-month day-of-month;
    day-of-week day-of-week;
    month month;
    year year;
    time-zone time-zone;
    weekly-recur-freq weekly-recur-freq;
}
schedule name event name to {
    effective effective;
    hour hour;
    minute minute;
    day-of-month day-of-month;
    day-of-week day-of-week;
    month month;
    year year;
    time-zone time-zone;
    weekly-recur-freq weekly-recur-freq;
}
```

Use the following statements to configure time exclusions from the schedule:

```
schedule name event name except name from {
    hour hour;
```



```

minute minute;
day-of-month day-of-month;
day-of-week day-of-week;
month month;
year year;
time-zone time-zone;
}
schedule name event name except name to {
  hour hour;
  minute minute;
  day-of-month day-of-month;
  day-of-week day-of-week;
  month month;
  year year;
  time-zone time-zone;
}

```

To configure the time schedule:

1. From configuration mode, access the configuration statement that configures the service schedule for the objects for which you can create a service schedule. Enter a name for the event and the exclusion. The specified name is not stored as an identifier, so the arbitrary value can be as simple as a number.
2. (Optional) Specify the effective period in which to schedule the event. This period is the interval after the associated from or to time during which the scheduled action can be initiated by a subscriber who is logging in to a subscriber session.

```
user@host# set effective effective
```

3. (Optional) Specify the hour of the day in the indicated month in which to schedule the event or exclusion.

```
user@host# set hour hour
```

4. (Optional) Specify the minutes past the indicated hour in which to schedule the event or exclusion.

```
user@host# set minute minute
```

5. (Optional) Specify the day of the month in which to schedule the event or exclusion.

```
user@host# set day-of-month day-of-month
```

6. (Optional) Specify the day of the week in which to schedule the event or exclusion.

```
user@host# set day-of-week day-of-week
```

7. (Optional) Specify the month of the year in which to schedule the event or exclusion.

```
user@host# set month month
```

8. (Optional) Specify the year in which to schedule the event or exclusion.

```
user@host# set year year
```

9. (Optional) Specify the time zone to use in the schedule.

```
user@host# set time-zone time-zone
```



NOTE: If the schedule time-zone is not the same as the system time-zone, a warning message is displayed when you commit the changes.

10. (Optional) Specify the weekly recurrent pattern to be used to schedule the event.

```
user@host# set weekly-recur-freq weekly-recur-freq
```

Related Documentation

- [Service Schedules Overview on page 9](#)
- [Guidelines for Entering Time Values for Service Schedules on page 15](#)
- [Adding a Service Schedule \(SRC CLI\) on page 26](#)
- [Setting the Action for a Service Schedule \(SRC CLI\) on page 36](#)

Setting the Action for a Service Schedule (SRC CLI)

Use the following configuration statements to configure the list of actions for the service schedule:

```
schedule name event name action name {
  type (activate | deactivate | deny | deny-deactivate);
  service service;
}
```

To configure the actions:

1. From configuration mode, access the configuration statement that configures the service schedule for the objects for which you can create a service schedule. Enter a name for the event and the action. The specified name is not stored as an identifier, so the arbitrary value can be as simple as a number.
2. Specify the type of action. The deny and the deny-deactivate values apply only to services that have an authorization plug-in configured. For more information, see [“Associating the Authorization Plug-In with a Scheduled Service \(SRC CLI\)” on page 25](#).

```
user@host# set type (activate | deactivate | deny | deny-deactivate)
```

3. Specify the name of the service.

```
user@host# set service service
```

4. (Optional) Specify substitutions to be used when the service is activated. Substitutions apply only to service activations.

```
user@host# set substitution [substitution...]
```

For more information, see the `activateService` method of the SAE external interface in the SAE CORBA remote API documentation on the Juniper Networks Web site at <http://www.juniper.net/techpubs/software/management/src/api-index.html>.

For more information about substitutions and schedules, see “[Example: Configuring Different Service Tiers for Different Days \(SRC CLI\)](#)” on page 39.

For information about the syntax for substitutions, see *Parameters and Substitutions*.

Related Documentation

- [Service Schedules Overview on page 9](#)
- [Adding a Service Schedule \(SRC CLI\) on page 26](#)
- [Setting the Time Schedule \(SRC CLI\) on page 34](#)
- [Setting the Action \(C-Web Interface\) on page 33](#)

Defining Attributes for Service Activation (SRC CLI)

Use the following statement to configure attributes for service activation:

```
schedule name event name action name attribute (sessionName | sessionTag |
  sessionTimeout | downStreamBandwidth | upStreamBandwidth) {
  value;
}
```

To define the attributes:

1. From configuration mode, access the configuration statement that configures the service schedule for the objects for which you can create a service schedule.
2. Specify the value for the attribute that is set before the service is activated.

```
user@host# set attribute (sessionName | sessionTag | sessionTimeout |
  downStreamBandwidth | upStreamBandwidth) value
```

Subscription attributes apply only to service activations.

Related Documentation

- [Adding a Service Schedule \(SRC CLI\) on page 26](#)
- [Service Schedules Overview on page 9](#)
- For more information about subscription attributes, see the *Subscription.html* file in the SAE core portal API documentation on the Juniper Networks Web site at <http://www.juniper.net/techpubs/software/management/src/api-index.html>

CHAPTER 4

Examples

- [Example: Configuring Different Service Tiers for Different Days \(SRC CLI\) on page 39](#)
- [Example: Configuring Different Service Tiers for Different Days \(C-Web Interface\) on page 41](#)
- [Example: Configuring a Service to Be Active During Nonwork Hours \(SRC CLI\) on page 43](#)
- [Example: Configuring a Service to Be Active During Nonwork Hours \(C-Web Interface\) on page 46](#)
- [Example: Configuring a Service to Be Available for a Specified Interval \(SRC CLI\) on page 49](#)
- [Example: Configuring a Service to Be Available for a Specified Interval \(C-Web Interface\) on page 50](#)
- [Example: Configuring the Scheduler to Activate Services with a Weekly Recurrence Pattern for a Specified Time Period \(SRC CLI\) on page 52](#)

Example: Configuring Different Service Tiers for Different Days (SRC CLI)

This example shows how to configure a schedule for an audio service to provide:

- Gold level of service on weekends
- Bronze level of service on weekdays

The sample schedule:

- Uses the Audio-Gold and Audio-Bronze services in the sample data.
- Activates the Audio-Gold service and denies the Audio-Bronze service on Saturday.
- Activates the Audio-Bronze service and denies and deactivates the Audio-Gold service on Monday.
- Does not have a preparation time configured for the SAE.

For demonstration purposes, the sample schedule is configured in the global configuration to make the service schedule available to all subscribers to the two audio services. It is assumed that subscribers are continuously logged in to the system to access the audio services.

To configure a schedule to make the Audio-Gold service available on Saturday and Sunday and the Audio-Bronze service available for the rest of the week:

1. From configuration mode, access the configuration statement that configures the service configuration named Audio-Bronze in the global configuration. Specify the default schedule authorization plug-in.

```
user@host# edit services global service Audio-Bronze
```

```
[edit services global service Audio-Bronze]  
user@host# set authorization-plug-in scheduleAuth
```

2. From configuration mode, access the configuration statement that configures the service schedule in the global configuration. Enter a unique name for the service schedule; for example, audioSchedule.

```
user@host# edit services global schedule audioSchedule
```

Enter a description of the schedule.

```
[edit services global schedule audioSchedule]  
user@host# set description description
```

3. From configuration mode, access the configuration statement that configures the schedule entry. Enter a name for the schedule entry; for example, audioTime1.

```
user@host# edit services global schedule audioSchedule event audioTime1
```

4. For the time, specify the day of the week as Saturday. For the actions, specify **activate** for the Audio-Gold service (named Action-1) and **deny-deactivate** for the Audio-Bronze service (named Action-2).

```
[edit services global schedule audioSchedule event audioTime1]  
user@host# set from day-of-week 6  
user@host# set action action-1 type activate service Audio-Gold  
user@host# set action action-2 type deny-deactivate service Audio-Bronze
```

5. From configuration mode, access the configuration statement that configures the schedule entry. Enter a name for the schedule entry; for example, audioTime2.

```
user@host# edit services global schedule audioSchedule event audioTime2
```

6. For the time, specify the day of the week as Monday. For the actions, specify **activate** for the Audio-Bronze service (named Action-1) and **deny-deactivate** for the Audio-Gold service (named Action-2).

```
[edit services global schedule audioSchedule event audioTime2]  
user@host# set from day-of-week 1  
user@host# set action action-1 type activate service Audio-Bronze  
user@host# set action action-2 type deny-deactivate service Audio-Gold
```

- Related Documentation**
- [Creating an Authorization Plug-In for a Scheduled Service \(SRC CLI\) on page 24](#)
 - [Associating the Authorization Plug-In with a Scheduled Service \(SRC CLI\) on page 25](#)
 - [Adding a Service Schedule \(SRC CLI\) on page 26](#)
 - [Example: Configuring a Service to Be Active During Nonwork Hours \(SRC CLI\) on page 43](#)
 - [Example: Configuring a Service to Be Available for a Specified Interval \(SRC CLI\) on page 49](#)

Example: Configuring Different Service Tiers for Different Days (C-Web Interface)

This example shows how to configure a schedule for an audio service to provide:

- Gold level of service on weekends
- Bronze level of service on weekdays

The sample schedule:

- Uses the Audio-Gold and Audio-Bronze services in the sample data.
- Activates the Audio-Gold service and denies the Audio-Bronze service on Saturday.
- Activates the Audio-Bronze service and denies and deactivates the Audio-Gold service on Monday.
- Does not have a preparation time configured for the SAE.

For demonstration purposes, the sample schedule is configured in the global configuration to make the service schedule available to all subscribers to the two audio services. It is assumed that subscribers are continuously logged in to the system to access the audio services.

To configure a schedule to make the Audio-Gold service available on Saturday and Sunday and the Audio-Bronze service available for the rest of the week:

1. Enter a unique name for the service schedule (for example, audioSchedule):
 - a. Click **Configure**, expand **Services**, and Click **Global**.
The Global pane appears.
 - b. From the Create new list, select **Schedule**.
 - c. In the dialog box, type **audioSchedule** as the name of the new Schedule, and click **OK**.
The Schedule: audioSchedule pane appears.
 - d. In the Description box, type a description of the service schedule, and click **Apply**.
2. Enter a name for the schedule event (for example, audioTime1):
 - a. From the Create new list, select **Event**.
 - b. In the dialog box, type **audioTime1** as the name of the new Event, and click **OK**.

- c. From the Create new list, select **Action**.
 - d. In the dialog box, type **action-1**, and click **OK**.

The Action: action-1 pane appears.

 - From the Service list, select **Audio-Gold**.
 - From the Type list, select **activate**, and click **Apply**.
 - e. In the side pane, click **From** under the **Event: audioTime1** folder.

The From pane appears.
 - f. Click the **Create** button.

The From pane reappears.
3. For the time, specify the day of the week as Saturday, and for the actions, specify activate for the Audio-Gold Service and deny-deactivate for the Audio-Bronze service:
 - a. In the Day Of Week box, type **6** (specifying Saturday), and click **Apply**.
 - b. In the side pane, click **Event: audioTime1**.

The Event: audioTime1 pane appears.
 - c. From the Create new list, select **Action**.
 - d. In the dialog box, type **action-2**, and click **OK**.

The Action: action-2 pane appears.

 - From the Service list, select **Audio-Bronze**.
 - From the Type list, select **deny-deactivate**, and click **Apply**.
4. Enter a name for the schedule event (for example, audioTime2):
 - a. In the side pane, click **Schedule: audioSchedule**.

The Schedule: audioSchedule pane appears.
 - b. From the Create new list, select **Event**.
 - c. In the dialog box, type **audioTime2** as the name of the new Event, and click **OK**.
 - d. From the Create new list, select **Action**.
 - e. In the dialog box, type **action-1**, and click **OK**.

The Action: action-1 pane appears.

 - From the Service list, select **Audio-Bronze**.
 - From the Type list, select **activate**, and click **Apply**.
 - f. In the side pane, click **From** under the **Event: audioTime2** folder.

The From pane appears.
 - g. Click the **Create** button.

The From pane reappears.

5. For the time, specify the day of the week as Monday, and for the actions, specify activate for the Audio-Bronze service and deny-deactivate for the Audio-Gold service:
 - a. In the Day Of Week box, type 1 (specifying Monday), and click **Apply**.
 - b. In the side pane, click **Event: audioTime2**.

The Event: audioTime2 pane appears.

- c. From the Create new list, select **Action**.
- d. In the dialog box, type **action-2**, and click **OK**.

The Action: action-2 pane appears.

- From the Service list, select **Audio-Gold**.
- From the Type list, select **deny-deactivate**, and click **Apply**.

Related Documentation

- [Adding a Service Schedule \(C-Web Interface\) on page 28](#)
- [Authorizing Scheduled Services \(C-Web Interface\) on page 26](#)
- [Example: Configuring Different Service Tiers for Different Days \(SRC CLI\) on page 39](#)

Example: Configuring a Service to Be Active During Nonwork Hours (SRC CLI)

This example shows how to configure a schedule for an Internet gold service to be active:

- Monday–Friday outside the 8:30 AM to 4:30 PM work day
- January 1 of the following year—All day

The example uses the Internet-GoldAuth service. This service is based on the Internet-Gold service in the sample data with the addition of the scheduleAuth plug-in defined as the authorization plug-in for the service.

The sample schedule:

- Deactivates the Internet-GoldAuth service from 8:30 AM through 4:29 PM.
- Activates the service at 4:30 PM.
- Does not have a preparation time configured for the SAE.

This configuration avoids schedule overlap.

For demonstration purposes, the sample schedule is configured in the global configuration to make the service schedule available to all subscribers to the Internet-GoldAuth service.

To configure a schedule to make a service available outside work hours and on January 1:

1. From configuration mode, access the configuration statement that configures the service configuration named Internet-GoldAuth in the global configuration. Specify the default schedule authorization plug-in.

```
user@host# edit services global service Internet-GoldAuth
```

```
[edit services global service Internet-GoldAuth]  
user@host# set authorization-plug-in scheduleAuth
```

2. From configuration mode, access the configuration statement that configures the service schedule. Enter a unique name for the service schedule; for example, afterHours.

```
user@host# edit services global schedule afterHours
```

Enter a description for the schedule.

```
[edit services global schedule afterHours]  
user@host# set description description
```

3. From configuration mode, access the configuration statement that configures the schedule entry. Enter a name for the schedule entry; for example, goldTime.

```
user@host# edit services global schedule afterHours event goldTime
```

4. From configuration mode, access the configuration statement that configures the time schedule. For the time, specify the day of the week as Monday through Friday, and specify that the schedule start at 8:30 AM and end at 4:29 PM (16:29) each day.

```
user@host# edit services global schedule afterHours event goldTime from
```

```
[edit services global schedule afterHours event goldTime from]  
user@host# set day-of-week 1  
user@host# set hour 8  
user@host# set minute 30
```

```
user@host# edit services global schedule afterHours event goldTime to
```

```
[edit services global schedule afterHours event goldTime to]  
user@host# set day-of-week 5  
user@host# set hour 16  
user@host# set minute 29
```

5. From configuration mode, access the configuration statement that configures the exclusion. Enter a name for the exclusion; for example, exclude-1. Specify a one-time exclusion for January 1.

```
user@host# edit services global schedule afterHours event goldTime except exclude-1  
from
```

```
[edit services global schedule afterHours event goldTime except exclude-1 from]  
user@host# set month 1  
user@host# set day-of-month 1
```

By excluding January 1 from the schedule, the Internet-GoldAuth service is active all day.

- From configuration mode, access the configuration statement that configures the action. Enter a name for the action; for example, action-1. Specify **deny-deactivate** for the Internet-GoldAuth service.

```
user@host# edit services global schedule afterHours event goldTime action action-1
```

```
[edit services global schedule afterHours event goldTime action action-1]
user@host# set type deny-deactivate
user@host# set service Internet-GoldAuth
```

- From configuration mode, access the configuration statement that configures the schedule entry. Enter a name for the schedule entry; for example, goldTime2.

```
user@host# edit services global schedule afterHours event goldTime2
```

- From configuration mode, access the configuration statement that configures the time schedule. Specify 4:30 PM (that is, 16:30).

```
user@host# edit services global schedule afterHours event goldTime2 from
```

```
[edit services global schedule afterHours event goldTime2 from]
user@host# set hour 16
user@host# set minute 30
```

- From configuration mode, access the configuration statement that configures the exclusion. Enter a name for the exclusion; for example, exclude-2. Specify a one-time exclusion for January 1.

```
user@host# edit services global schedule afterHours event goldTime2 except
exclude-2 from
```

```
[edit services global schedule afterHours event goldTime2 except exclude-2 from]
user@host# set month 1
user@host# set day-of-month 1
```

By excluding January 1 from the schedule, the Internet-GoldAuth service is active all day.

- From configuration mode, access the configuration statement that configures the action. Enter a name for the action; for example, action-2. Specify **activate** for the Internet-GoldAuth service.

```
user@host# edit services global schedule afterHours event goldTime2 action action-2
```

```
[edit services global schedule afterHours event goldTime2 action action-2]
user@host# set type activate
user@host# set service Internet-GoldAuth
```

- Related Documentation**
- [Adding a Service Schedule \(SRC CLI\) on page 26](#)
 - [Example: Configuring Different Service Tiers for Different Days \(SRC CLI\) on page 39](#)
 - [Example: Configuring a Service to Be Available for a Specified Interval \(SRC CLI\) on page 49](#)

Example: Configuring a Service to Be Active During Nonwork Hours (C-Web Interface)

This example shows how to configure a schedule for the Internet-Gold service in the sample data to be active:

- Monday–Friday outside the 8:30 AM to 4:30 PM work day
- January 1 of the following year—All day

The sample schedule:

- Deactivates the Internet-Gold service from 8:30 AM through 4:29 PM.
- Activates the service at 4:30 PM.
- Does not have a preparation time configured for the SAE.

This configuration avoids schedule overlap.

For demonstration purposes, the sample schedule is configured in the global configuration to make the service schedule available to all subscribers to the Internet-Gold service.

To configure a schedule to make a service available outside work hours and on January 1:

1. Specify the default schedule authorization plug-in for the Internet-Gold service:
 - a. Click **Configure**, expand **Services>Global**, and click **Service: Internet-Gold**.
The Service: Internet-Gold pane appears.
 - b. In the Authorization Plug In box:
 - Type **scheduleAuth** in the Optionally, add a new value box, and click **Add**.
ScheduleAuth displays in the Selected values box.
 - In the Selected values box, select **scheduleAuth** and click **Apply**.
2. Enter a unique name for the service schedule (for example, afterHours):
 - a. Click **Global**.
The Global pane appears.
 - b. From the Create new box, select **Schedule**.
 - c. In the dialog box, type **afterHours** as the name of the new Schedule, and click **OK**.

The Schedule: afterHours pane appears.

- d. In the Description box, enter a description for the schedule, and click **Apply**.
3. Enter a name for the schedule event (for example, goldTime):
 - a. From the Create new list, select **Event**.
 - b. In the dialog box, type **goldTime** as the name of the new Event, and click **OK**.
4. For the time, specify the day of the week as Monday through Friday, and the schedule starting at 8:30 AM and ending at 4:29 PM (16:29) each day:
 - a. In the side pane, expand **Event: goldTime**, and click **From**.

The From pane appears.

- b. Click the **Create** button, and enter these values in the following boxes:
 - Day Of Week: 1
 - Hour: 8
 - Minute: 30
- c. Click **Apply**.
- d. In the side pane, click **To** under the **Event: goldTime** folder.

The To pane appears.

- e. Click the **Create** button, and enter these values in the following boxes:
 - Day Of Week: 5
 - Hour: 16
 - Minute: 29
- f. Click **Apply**.
5. Enter a name for the exclusion (for example, exclude-1), and specify a one-time exclusion for January 1:
 - a. In the side pane, click **Event: goldTime**.
 - b. From the Create new box, select **Except**.
 - c. In the dialog box, type **exclude-1**
 - d. In the side pane, click **From** under the **Except: exclude-1** folder.

The From pane appears.

- e. Enter these values in the following boxes:
 - Day of Month: 1
 - Month: 1

By excluding January 1 from the schedule, the Internet-Gold service is active all day.

- f. Click **Apply**.
6. Enter a name for the action (for example, action-1), and specify deny-deactivate for the Internet-Gold service:
 - a. In the side pane, click **Event: goldTime**.

The Event: goldTime pane appears.
 - b. From the Create new list, select **Action**.
 - c. In the dialog box, type **action-1** as the name of the new Action, and click **OK**.

The Action: action-1 pane appears.

 - In the Service list, select **Internet-Gold**.
 - In the Type list, select **deny-deactivate**, and click **Apply**.
7. Enter a name for the schedule event (for example, goldTime2):
 - a. In the side pane, click **Schedule: afterHours**.

The Schedule: afterHours pane appears.
 - b. In the Create new list, select **Event**.
 - c. In the dialog box, type **goldTime2**, and click **OK**.
8. Specify the time schedule as 4:30 PM (that is, 16:30):
 - a. In the side pane, expand **Event: goldTime2**, and click **From**.

The From pane appears.
 - b. Click the **Create** button.

The From pane reappears.
 - c. Enter these values in the following boxes:
 - Hour: 16
 - Minute: 30
 - d. Click **Apply**.
9. Enter a name for the exclusion (for example, exclude-2), and specify a one-time exclusion for January 1:
 - a. In the side pane, click **Event: goldTime2**.
 - b. From the Create new box, select **Except**.
 - c. In the dialog box, type **exclude-2**, and click **OK**.
 - d. In the side pane, click **From** under the **Except: exclude-2** folder.

The From pane appears.

e. Enter these values in the following boxes:

- Set Month: 1
- Set Day-Of-Month: 1

By excluding January 1 from the schedule, the Internet-Gold service is active all day.

f. Click **Apply**.

10. Enter a name for the action (for example, action-2), and specify activate for the Internet-Gold service:

a. In the side pane, click **Event: goldTime2**.

The Event: goldTime pane appears.

b. From the Create new list, select **Action**.

c. In the dialog box, type **action-2** as the name of the new Action, and click **OK**.

The Action: action-2 pane appears.

- In the Service list, select **Internet-Gold**.
- In the Type list, select **activate**, and click **Apply**.

Related Documentation

- [Adding a Service Schedule \(C-Web Interface\) on page 28](#)
- [Authorizing Scheduled Services \(C-Web Interface\) on page 26](#)
- [Example: Configuring Different Service Tiers for Different Days \(C-Web Interface\) on page 41](#)
- [Example: Configuring a Service to Be Active During Nonwork Hours \(SRC CLI\) on page 43](#)

Example: Configuring a Service to Be Available for a Specified Interval (SRC CLI)

You can use an effective period for a schedule to make a service available to subscribers who log in during a specified time period. The following example shows how to configure a schedule to make a service available from 8 AM until 4 PM.

To make a specified service available from 8 AM until 4 PM:

1. From configuration mode, access the configuration statement that configures the service schedule in the global configuration. Enter a unique name for the service schedule; for example, effectiveHours.

```
user@host# edit services global schedule effectiveHours
```

Enter a description for the schedule.

```
[edit services global schedule effectiveHours]
user@host# set description description
```

2. From configuration mode, access the configuration statement that configures the schedule entry. Enter a name for the schedule entry; for example, `availableTime`.

```
user@host# edit services global schedule effectiveHours event availableTime
```

3. From configuration mode, access the configuration statement that configures the time schedule. Specify the time when the service is first available—8 AM— and for how long the service is to be available—480 minutes.

```
user@host# edit services global schedule effectiveHours event availableTime from
```

```
[edit services global schedule effectiveHours event availableTime from]
```

```
user@host# set hour 8
```

```
user@host# set effective 480
```

4. From configuration mode, access the configuration statement that configures the action. Enter a name for the action; for example, `action-1`. Specify **activate** for the service; for example, `Internet-GoldAuth` service.

```
user@host# edit services global schedule effectiveHours event availableTime action
action-1
```

```
[edit services global schedule effectiveHours event availableTime action action-1]
```

```
user@host# set type activate
```

```
user@host# set service Internet-GoldAuth
```

Related Documentation

- [Adding a Service Schedule \(SRC CLI\) on page 26](#)
- [Example: Configuring Different Service Tiers for Different Days \(SRC CLI\) on page 39](#)
- [Example: Configuring a Service to Be Active During Nonwork Hours \(SRC CLI\) on page 43](#)

Example: Configuring a Service to Be Available for a Specified Interval (C-Web Interface)

You can use an effective period for a schedule to make a service available to subscribers who log in during a specified time period. The following example shows how to configure a schedule to make a service available from 8 AM until 4 PM.

To make a specified service available from 8 AM until 4 PM:

1. Enter a unique name for the service schedule (for example, `effectiveHours`):
 - a. Click **Configure**, expand **Services**, and click **Global**.
The Global pane appears.
 - b. From the Create new list, select **Schedule**.
 - c. In the dialog box, type **effectiveHours**, and click **OK**.

The Schedule: effectiveHours pane appears.

- d. In the Description box, enter a description for the schedule, and click **Apply**.
2. Enter a name for the schedule event (for example, availableTime):
 - a. From the Create new list, select **Event**.
 - b. In the dialog box, type **availableTime** as the name of the new Event, and click **OK**.
3. For the time, specify when the service is first available — 8:00 AM — and for how long the service is to be available — 480 minutes:
 - a. In the side pane, expand **Event: availableTime**, and click **From**.

The From pane appears.

- b. Click the **Create** button and enter these values in the following boxes:
 - Hour: 8
 - Effective: 480
- c. Click **Apply**.
4. Enter a name for the action (for example, action-1), and specify activate for the Internet-Gold service:

- a. In the side pane, click **Event: availableTime**.

The Event: availableTime pane appears.

- b. From the Create new list, select **Action**.
- c. In the dialog box, type **action-1** as the name of the new Action, and click **OK**.

The Action: action-1 pane appears.

- In the Service list, select **Internet-Gold**.
- In the Type list, select **activate**, and click **Apply**.

Related Documentation

- [Adding a Service Schedule \(C-Web Interface\) on page 28](#)
- [Authorizing Scheduled Services \(C-Web Interface\) on page 26](#)
- [Example: Configuring a Service to Be Active During Nonwork Hours \(C-Web Interface\) on page 46](#)
- [Example: Configuring a Service to Be Available for a Specified Interval \(SRC CLI\) on page 49](#)

Example: Configuring the Scheduler to Activate Services with a Weekly Recurrence Pattern for a Specified Time Period (SRC CLI)

This example shows how to activate a service with a weekly recurrence pattern.

- [Requirements on page 52](#)
- [Overview on page 52](#)
- [Configuration on page 52](#)
- [Verification on page 56](#)

Requirements

This example uses the following hardware and software components:

- One or more C Series Controllers running the Juniper Networks Session and Resource Control (SRC) software
- SRC Release 4.3.0 or later

No special configuration beyond device initialization is required before you can configure this feature.

Overview

You can schedule services with a weekly recurrence pattern that uses the following ranges of occurrence:

- Repeat with no end date
- Repeat until the defined end date

A weekly recurrence pattern defines the number of weeks after which the action for the scheduled service is to be repeated based on the following settings:

- Scheduled period—Start and end dates along with a time period within which the action is repeated, where the end date and time period are optional
- Except period—Start and end dates along with a time period within which the action is not performed, where the time period is optional
- Duration—Period of the action, which can also be more than a week

You can set the action for the scheduled service to be activated or deactivated for the specified weekly recurrence pattern.

Configuration

CLI Quick Configuration To quickly configure the global parameter, copy the following commands into a text editor, and modify them as needed; then load the configuration from the file

```
[edit]
set services global schedule videoSchedule event weeklyrecur action activate_video
service Video-Gold type activate
```

```

set services global schedule videoSchedule event weeklyrecur from day-of-month 4
set services global schedule videoSchedule event weeklyrecur from effective 120
set services global schedule videoSchedule event weeklyrecur from hour 14
set services global schedule videoSchedule event weeklyrecur from minute 0
set services global schedule videoSchedule event weeklyrecur from month 6
set services global schedule videoSchedule event weeklyrecur from day-of-week 1
set services global schedule videoSchedule event weeklyrecur from year 2012

```

```

set services global schedule videoSchedule event weeklyrecur to day-of-month 27
set services global schedule videoSchedule event weeklyrecur to hour 13
set services global schedule videoSchedule event weeklyrecur to minute 0
set services global schedule videoSchedule event weeklyrecur to month 8
set services global schedule videoSchedule event weeklyrecur to year 2012

```

```

set services global schedule videoSchedule event weeklyrecur except exclude from
  day-of-month 15
set services global schedule videoSchedule event weeklyrecur except exclude from hour
  8
set services global schedule videoSchedule event weeklyrecur except exclude from minute
  0
set services global schedule videoSchedule event weeklyrecur except exclude from month
  7
set services global schedule videoSchedule event weeklyrecur except exclude from year
  2012

```

```

set services global schedule videoSchedule event weeklyrecur except exclude to
  day-of-month 20
set services global schedule videoSchedule event weeklyrecur except exclude to hour 8
set services global schedule videoSchedule event weeklyrecur except exclude to minute
  0
set services global schedule videoSchedule event weeklyrecur except exclude to month
  7
set services global schedule videoSchedule event weeklyrecur except exclude to year
  2012

```

Step-by-Step Procedure

To activate the Video-Gold service for subscribers with the following recurrence pattern:

- Activate a service from 4-Jun-2012, 2:00 PM to 27-Aug-2012, 1:00 PM.
- Repeat the service for 120 minutes every third Monday between 2:00 PM to 4:00 PM.
- Exclude the activation from 15-Jul-2012, 8:00 AM to 20-Jul-2012, 8:00 AM.

1. From configuration mode, access the configuration statement that configures the service schedule in the global configuration. Enter a unique name for the service schedule—for example, `videoSchedule`.

```
user@host# edit services global schedule videoSchedule
```

2. Configure the schedule entry. Enter a name for the schedule entry—for example, `weeklyrecur`.

```
[edit services global schedule videoSchedule]
user@host# edit event weeklyrecur
```

3. Specify `activate` as the action for the Video-Gold service.

```
[edit services global schedule videoSchedule event weeklyrecur]
user@host# set action activate_video service Video-Gold type activate
```

4. Configure the weekly schedule.

```
[edit services global schedule videoSchedule event weeklyrecur]
user@host# edit from
[edit services global schedule videoSchedule event weeklyrecur from]
user@host# set day-of-month 4
user@host# set effective 120
user@host# set hour 14
user@host# set minute 0
user@host# set month 6
user@host# set day-of-week 1
user@host# set year 2012
user@host# up
[edit services global schedule videoSchedule event weeklyrecur]
user@host# edit to
[edit services global schedule videoSchedule event weeklyrecur to]
user@host# set day-of-month 27
user@host# set hour 13
user@host# set minute 0
user@host# set month 8
user@host# set year 2012
user@host# up
[edit services global schedule videoSchedule event weeklyrecur]
```

5. Configure the exclusion. Enter a name for the exclusion—for example, exclude.

```
user@host# edit except
[edit services global schedule videoSchedule event weeklyrecur except]
user@host# set exclude from day-of-month 15
user@host# set exclude from hour 8
user@host# set exclude from minute 0
user@host# set exclude from month 7
user@host# set exclude from year 2012
[edit services global schedule videoSchedule event weeklyrecur except]
user@host# set exclude to day-of-month 20
user@host# set exclude to hour 8
user@host# set exclude to minute 0
user@host# set exclude to month 7
user@host# set exclude to year 2012
[edit services global schedule videoSchedule event weeklyrecur except]
```



NOTE: For the same scenario, if you want to repeat the service every third Wednesday instead of every third Monday, then the scheduler does *not* start on 4-Jun-2012 (even if it is the configured start date). Instead, the scheduler's first event falls on the first Wednesday—that is, 6-Jun-2012 (because *day-of-week* has more precedence than *day-of-month*).

Results From configuration mode, confirm your configuration by entering the **show services global schedule videoschedule** command. If the output does not display the intended configuration, repeat the configuration instructions in this example to correct it.

This configuration activates the Video-Gold service on 4-Jun-2012, 25-Jun-2012, and 6-Aug-2012 with the following exceptions:

- You cannot activate the Video-Gold service on 16-Jul-2012 because it falls within the configured exclusion period.
- You cannot activate the Video-Gold service on 27-Aug-2012 because the scheduled activation time falls beyond the configured end time of the recurrence pattern.

```
[edit]
user@host# show services global schedule videoschedule
event weeklyrecur {
  action activate_video {
    service Video_Gold;
    type activate;
  }
  except exclude {
    from {
      day-of-month 15;
      hour 8;
      minute 0;
      month 7;
      year 2012;
    }
    to {
      day-of-month 20;
      hour 8;
      minute 0;
      month 7;
      year 2012;
    }
  }
  from {
    day-of-month 4;
    day-of-week 1;
    effective 120;
    hour 14;
    minute 0;
    month 6;
    year 2012;
  }
  to {
    day-of-month 27;
    hour 13;
    minute 0;
    month 8;
    year 2012;
  }
}
```

If you are done configuring the device, enter **commit** from configuration mode.

Verification

To confirm that the configuration is working properly, perform this task:

- [Verifying That the Service is Configured in a Weekly Recurrence Pattern on page 56](#)

Verifying That the Service is Configured in a Weekly Recurrence Pattern

Purpose	Verify that the service is configured in a weekly recurrence pattern.
Action	From operational mode, enter the show services global schedule videoschedule command to display the output of the configured weekly recurrence pattern.
Meaning	The output displays information about the weekly recurrence pattern configured on the system. Verify the following information: <ul style="list-style-type: none">• Action type• From and To period• From and To exclusion period
Related Documentation	<ul style="list-style-type: none">• Setting the Time Schedule (SRC CLI) on page 34• Adding a Service Schedule (SRC CLI) on page 26

PART 3

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