

Chapter 2

Overview of Subscribers and Subscriptions on a Solaris Platform

This chapter provides an overview of subscribers, subscriptions, and operators in the Solaris version of the SRC software. Topics include:

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- Enterprise Subscriber and Subscription Hierarchy on page 11
- Overview of Operators on page 12

Overview of Subscribers

A subscriber is an object in the directory for which you can configure subscriptions to services. The SRC software distinguishes between types of subscribers, as described in Table 6.

Table 6: Types of Subscribers

Subscriber	Description
Retailers	Internet service providers who either manage their own subscribers or outsource the management of subscribers to a service provider who deploys the SRC software. The SRC software uses retailer objects to group subscribers who belong to an administrative domain.
Residential	Individual subscribers or households—multiple subscribers who use one or more computers and share the same connection. In a household, subscribers can share the same service subscription or can have their own individualized service profiles.
Enterprise	An organization, such as a corporation. An enterprise subscriber can contain site subscribers that represent physical locations or groups within the organization. Enterprises and sites contain access subscribers; an access represents a layer 2 connection between a device at a customer's physical location and a router that gives the enterprise subscribers access to the Internet and, in some cases, a virtual private network (VPN).
Sites	One or more locations—physical or virtual—within an enterprise that share service subscriptions and physical access to services and that are each managed as a unique entity. For example, the XYM Corporation might have a site in Boston and a site in Toronto. Each of these sites can have its own set of subscribed services.

Table 6: Types of Subscribers (continued)

Subscriber	Description
Access	A physical access (usually within a site) from the customer to the service provider's router; the router is configured to access the SRC environment and the Internet and/or the customer's network-based VPN. An access line can have its own set of subscribed services.
Router	An SRC-managed router that is used to activate services on nonsubscriber interfaces. It is used primarily to provide integration with applications that use traffic mirroring on JUNOS routing platforms. For information about traffic mirroring, see <i>SDX Application Library Guide</i> .
Subscriber folders	Objects that group subscribers. The object immediately subordinate to a retailer must be a subscriber folder. Subscriber folders can also be subordinate to enterprises, accesses, and sites.

Overview of Subscriptions

A subscription is an object in the directory that represents an enrollment to a service. Each subscription provides access to a particular service for that subscriber. A subscriber can have multiple subscriptions to a service. Table 7 shows the type of subscriptions you can configure for each type of subscriber.

Table 7: Allowable Service Subscriptions for Different Types of Subscribers

Type of Subscriber	Service Subscriptions You Can Configure
Retailer	Outsourced service subscription Value-added subscription
Subscriber folder	Value-added subscription
Enterprise	Access subscription Value-added subscription
Site	Access subscription Value-added subscription
Access	RADIUS subscription Value-added subscription
Residential subscriber	RADIUS subscription Value-added subscription

If the service provider uses the SRC directory to hold all their subscriber data, residential subscribers must subscribe to primary services—such as Broadband Remote Access Server (B-RAS) through Point-to-Point protocol (PPP) or B-RAS through Dynamic Host Configuration Protocol (DHCP)—before subscribing to a value-added service.

Enterprise subscribers must subscribe to an access service (that is, a leased line), either directly or in a site or subscriber folder that is subordinate to the enterprise. Without an access subscription, a service session cannot run in the network.

Retailers can subscribe to outsourced services if a service provider sources the access out through tunneling (Layer 2 Tunneling Protocol [L2TP] or PPP Terminated Aggregation [PTA]).

Enterprise Subscriber and Subscription Hierarchy

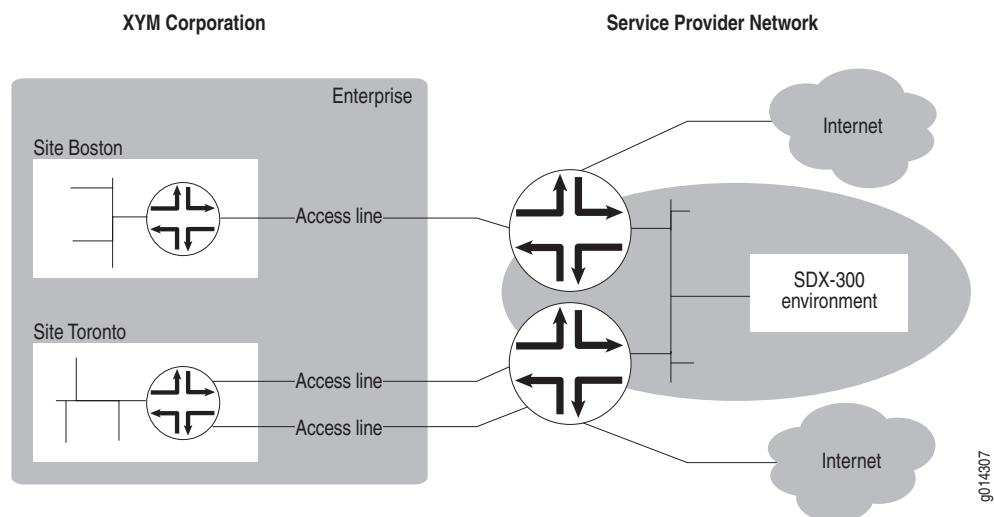
In the enterprise model, a subscriber is an individual physical access line managed through the enterprise service portal over which services are delivered by the service provider. In the enterprise, the SRC software supports the organization of the enterprise in the following hierarchy (Figure 2):

- Enterprise—The business itself as a customer of the service provider; for example, the XYM Corporation. An enterprise can have its own set of subscriptions over a physical access line.
- Site—One or more locations, physical or virtual, within the enterprise that share service subscriptions and physical access to services and that are each managed as a unique entity. For example, the XYM Corporation might have a site in Boston and a site in Toronto. Each of these sites can have its own set of subscribed services.
- Access line—A physical access line (usually within a site) from the customer to the service provider's router; the router is configured to access the SRC environment and the Internet and/or the customer's network-based VPN. An access line can have its own set of subscribed services.

Enterprise IT managers can use the enterprise service portal to manage interfaces connecting enterprise sites to the network. These interfaces can be leased-line connections or authenticated PPP and DHCP connections.

Figure 2 shows an enterprise hierarchy.

Figure 2: Enterprise Hierarchy



Sites and access lines are subordinate to an enterprise; the enterprise is sometimes said to contain sites and access lines. Access lines are subordinate to a site; the site contains access lines.

In Figure 2, The XYM Corporation enterprise contains two subordinate sites, Boston and Toronto. The Boston site contains a single subordinate access line, whereas the Toronto site contains two subordinate access lines. All three access lines connect to a router in the service provider network. An individual access line, for example, might be a T1 line running PPP or a T3 line running Frame Relay.

Enterprise Subscription Hierarchy

The different organizational levels of the enterprise receive subscribed services in a hierarchical manner. The availability of a subscription to a higher level affects its availability to a lower level.

- Enterprise—Subscriptions apply to all sites and all access lines across the enterprise.
- Site—Subscriptions apply to all access lines grouped within a site.
- Access line—Subscriptions apply to a given access line that connects the enterprise to the service provider's network.

Overview of Operators

This section describes operators for subscribers and subscriptions. You can also configure operators for various SRC components. For information about setting up a multilayered access control scheme for operators, see *SRC-PE Integration Guide, Chapter 8, Access Control Scheme*.

In relation to subscribers and subscriptions, an operator is an object in the directory that represents an IT manager in an organization or a manager who works for a wholesaler and has control over all retailers. Retailers, subscriber folders, enterprises, sites, and accesses can support one or more operators.

When you add an enterprise with SDX Admin, the software creates a default operator for that enterprise. You can add additional operators for enterprises and create operators for retailers, subscriber folders, sites, and accesses.

You can also add an operator that has control over all retailers. See *Operators That Control All Retailers* on page 206.

Operator Read Privileges

Operators have privileges to read:

- The objects they control
- Parent subscribers, up to the retailer
- Subscriptions of parent subscribers, up to the retailer
- All objects that represent services, service scopes, policies, and global variables that are defined for the subscriber to which the operator is added

Operator Management Privileges

You can specify one or more management privileges for operators. If you do not specify privileges for an operator, the operator has only read privileges. The default operator that SDX Admin adds to an enterprise has the highest privilege level, called administrator. Table 8 shows the privilege levels and the privileges associated with the levels.

Table 8: Privilege Levels and Associated Tasks

Privilege Level	Tasks That Operators with This Privilege Can Perform
Administrator	<ul style="list-style-type: none"> ■ Add, delete and modify operators ■ Add, delete, and modify subscriptions ■ Modify subscribers, including the ability to add, delete, and modify substitutions for subscribers ■ Manually activate and deactivate subscription sessions
Subscription	<ul style="list-style-type: none"> ■ Add, delete, and modify subscriptions ■ Manually activate and deactivate subscription sessions
Substitution	Add, delete, and modify substitutions in subscribers and subscriptions
Activation	<ul style="list-style-type: none"> ■ Configure automatic activation of services ■ Manually activate and deactivate subscription sessions
VPNs	Modify, export, and cancel the export of VPNs

An operator has management privileges for its associated subscriber and for that subscriber's subordinate objects. For example, operators in an enterprise have control over the enterprise and all sites and accesses in the enterprise. Similarly, operators in a site have control over the site and all accesses it contains. Operators in an access have control over only that access.

For example, in the directory shown in Figure 3, the operator substitutionMgr:

- Can manage substitutions of the site called Ottawa and its subordinate objects.
- Has read access to all services, service scopes, policies, and global variables that are defined for the site called Ottawa.
- Has read access to the site called Ottawa and its subordinate objects.
- Has read access to the parent subscribers: the enterprise ABCInc, the subscriber folder local, and the retailer default.
- Has read access to the subscriptions of the parent subscribers.

Figure 3: Sample Operator Access Privileges