



Junos[®] Space

Junos[®] Space Security Director Restful Web Services API Reference



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Juniper Networks, Inc.
1133 Innovation Way
Sunnyvale, California 94089
USA
408-745-2000
www.juniper.net

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Table of Contents

	About This Guide	v
	Junos Space Documentation and Release Notes	v
	Documentation Conventions	v
	Documentation Feedback	vi
	Requesting Technical Support	vi
	Self-Help Online Tools and Resources	vi
	Opening a Case with JTAC	vii
Chapter 1	Security Director RESTful Web Services	9
	Security Director RESTful Web Services Overview	9
	Using Security Director RESTful Web Services	11
	Format and Conventions	11
	Media Types	11
	Security Director RESTful Web Services	12
	Address Management RESTful Web Services	12
	GET	12
	POST	16
	PUT	17
	DELETE	18
	PATCH	18
	Service Management RESTful Web Services	19
	GET	19
	POST	26
	PUT	27
	DELETE	28
	PATCH	29
	Firewall Policy Management RESTful Web Services	30
	GET	30
	POST	41
	PUT	47
	DELETE	48
	Scheduler Management RESTful Web Services	49
	GET	49
	POST	51
	DELETE	53
	Policy Profile Management RESTful Web Services	53
	GET	53
	POST	54
	PUT	55
	DELETE	56
	PATCH	56

VPN Management RESTful Web Services	57
GET	57
POST	61
DELETE	66
Extranet Device Management RESTful Web Services	66
GET	66
POST	68
PUT	68
PATCH	69
DELETE	70
VPN Profile Management RESTful Web Services	70
GET	70
POST	72
PUT	73
PATCH	74
DELETE	75
Device Management RESTful Web Services	75
GET	75
POST	80
Variables Management RESTful Web Services	81
GET	81
POST	84
PUT	85
DELETE	86
PATCH	87
Application Signature Management RESTful Web Services	87
GET	87
IPS Management RESTful Web Services	91
GET	91
Job Management RESTful Web Services	92
GET	92

About This Guide

- [Junos Space Documentation and Release Notes on page v](#)
- [Documentation Conventions on page v](#)
- [Documentation Feedback on page vi](#)
- [Requesting Technical Support on page vi](#)

Junos Space Documentation and Release Notes

For a list of related Junos Space documentation, see <http://www.juniper.net/techpubs/>.



If the information in the latest release notes differs from the information in the documentation, follow the *Junos Space Release Notes*.

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

Documentation Conventions

[Table 1 on page v](#) defines notice icons used in this documentation.

Table 1: Notice Icons

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

Documentation Feedback

We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation. You can provide feedback by using either of the following methods:

- Online feedback rating system—On any page of the Juniper Networks TechLibrary site at <http://www.juniper.net/techpubs/index.html>, simply click the stars to rate the content, and use the pop-up form to provide us with information about your experience. Alternately, you can use the online feedback form at <http://www.juniper.net/techpubs/feedback/>.
- E-mail—Send your comments to techpubs-comments@juniper.net. Include the document or topic name, URL or page number, and software version (if applicable).

Requesting Technical Support

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

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

Self-Help Online Tools and Resources

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

- Find CSC offerings: <http://www.juniper.net/customers/support/>
- Search for known bugs: <http://www2.juniper.net/kb/>
- Find product documentation: <http://www.juniper.net/techpubs/>
- Find solutions and answer questions using our Knowledge Base: <http://kb.juniper.net/>
- Download the latest versions of software and review release notes: <http://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications: <https://www.juniper.net/alerts/>

- Join and participate in the Juniper Networks Community Forum:
<http://www.juniper.net/company/communities/>
- Open a case online in the CSC Case Management tool: <http://www.juniper.net/cm/>

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

Opening a Case with JTAC

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

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

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

CHAPTER 1

Security Director RESTful Web Services

- [Security Director RESTful Web Services Overview on page 9](#)
- [Using Security Director RESTful Web Services on page 11](#)
- [Security Director RESTful Web Services on page 12](#)

Security Director RESTful Web Services Overview

Security Director RESTful Web Services provide programmatic access to the resources that are defined in Junos Space Security Director. Security Director RESTful Web Services follow the same standards and conventions as the Junos Space Platform RESTful Web Services. The Security Director RESTful Web Services are exposed under the Juniper Networks Junos Space RESTful Web Services root URI (/api). Security Director-related RESTful Web Services are exposed under the /api/juniper/sd URI.

The following RESTful Web Services are exposed under the Junos Space Security Director root URI:

- Address management
- Service management
- Firewall policy management
- Application signature management
- Device management
- IPS management
- Job management
- Variable management
- VPN management

URI: /api/juniper/sd

Sample XML Output

```
<space>
  <services>
    <service rel="info" href="/api/info"/>
    <service rel="sd" href="/api/juniper/sd"/>
    <service rel="address-management" href="/api/juniper/sd/address-management"/>
```

```

<service rel="app-sig-management" href="/api/juniper/sd/app-sig-management"/>

<service rel="device-management" href="/api/juniper/sd/device-management"/>
<service rel="fwpolicy-management" href="/api/juniper/sd/fwpolicy-management"/>

<service rel="ips-management" href="/api/juniper/sd/ips-management"/>
<service rel="job-management" href="/api/juniper/sd/job-management"/>
<service rel="scheduler-management"
href="/api/juniper/sd/scheduler-management"/>
<service rel="service-management" href="/api/juniper/sd/service-management"/>
<service rel="utm-management" href="/api/juniper/sd/utm-management"/>
<service rel="variable-management" href="/api/juniper/sd/variable-management"/>

<service rel="vpn-management" href="/api/juniper/sd/vpn-management"/>
</services>
</space>

```

You can get the basic information such as Content-Type and URI for each RESTful Web services. The following example shows getting basic information for Firewall Management RESTful Web Services.

URI: /api/info?uri=/api/juniper/sd/fwpolicy-management/firewall-policies

Sample Output

```

<XRD>
<Subject>/api/juniper/sd/fwpolicy-management/firewall-policies</Subject>
<Link rel="describedBy" type="application/xrd+xml"
href="/api/info?type=vnd.juniper.sd.fwpolicy-management.firewall-policy"/>
<http-methods>
<http-method type="POST">
<primary-uri>/api/juniper/sd/fwpolicy-management/firewall-policies</primary-uri>
<query-parameters/>
<headers>
<header type="Accept">
<Link rel="describedBy" type="application/xrd+xml"
href="/api/info?type=vnd.juniper.sd.fwpolicy-management.firewall-policy"/>
<representations>

<representation>application/vnd.juniper.sd.fwpolicy-management.firewall-policy+json;version=1;q=0.01</representation>

<representation>application/vnd.juniper.sd.fwpolicy-management.firewall-policy+xml;version=1;q=0.01</representation>

</representations>
</header>
<header type="Content-Type">
<Link rel="describedBy" type="application/xrd+xml"
href="/api/info?type=vnd.juniper.sd.fwpolicy-management.firewall-policy"/>
<representations>
<representation>application/vnd.juniper.sd.fwpolicy-management.firewall-policy+xml;version=1; charset=UTF-8</representation>
<representation>application/vnd.juniper.sd.fwpolicy-management.firewall-policy+json;version=1; charset=UTF-8</representation>
</representations>
</header>
</headers>
</http-method>
<http-method type="GET">
<primary-uri>/api/juniper/sd/fwpolicy-management/firewall-policies</primary-uri>

```

```

<query-parameters/>
<headers>
<header type="Accept">
<Link rel="describedBy" type="application/xrd+xml"
href="/api/info?type=vnd.juniper.sd.fwpolicy-management.firewall-policies"/>
<representations>
<representation>application/vnd.juniper.sd.fwpolicy-management.firewall-policies+json;version=tq=001</representation>
<representation>application/vnd.juniper.sd.fwpolicy-management.firewall-policies+xml;version=tq=001</representation>
</representations>
</header>
</headers>
</http-method>
</http-methods>
</XRD>

```

Using Security Director RESTful Web Services

- [Format and Conventions on page 11](#)

Format and Conventions

Media Types

Junos Space uses custom media types to define objects that are accessible as HTTP resources and valid targets to HTTP methods, such as GET, PUT, POST, DELETE, and PATCH. For each media type, Junos Space encodes three primary pieces of information about the resources on the wire representation: type, syntax, and version.

Media-Type String Format

Custom media types defined for Junos Space applications must have the following specified format:

```
application/<vendor>.sd.<service>.<type>+<syntax>;version=<version>
```

For example, Security Director custom media types have the following format:

```
application/vnd.juniper.sd.service-management.services+xml;version="1"
```

[Table 2 on page 11](#) describes these parameters.

Table 2: Media-Type String Format Parameters

Parameter	Description
<vendor>	Vendor of the media type. Media types defined by Juniper Networks use vnd.net.juniper. Third parties must use their own vendor string in the event that they want to define their own Web services in their applications that are deployed on Junos Space.
<service>	Name of the Junos Space-specific service. Service names are all lowercase alphanumeric tokens with hyphen separators.
<type>	Type of resource. Types are all lowercase alphanumeric tokens with hyphen separators.

Table 2: Media-Type String Format Parameters (*continued*)

Parameter	Description
<syntax>	Representation of the resource.
<version>	Version of the API; versions begin with the numeral 1.

Security Director RESTful Web Services

- [Address Management RESTful Web Services on page 12](#)
- [Service Management RESTful Web Services on page 19](#)
- [Firewall Policy Management RESTful Web Services on page 30](#)
- [Scheduler Management RESTful Web Services on page 49](#)
- [Policy Profile Management RESTful Web Services on page 53](#)
- [VPN Management RESTful Web Services on page 57](#)
- [Extranet Device Management RESTful Web Services on page 66](#)
- [VPN Profile Management RESTful Web Services on page 70](#)
- [Device Management RESTful Web Services on page 75](#)
- [Variables Management RESTful Web Services on page 81](#)
- [Application Signature Management RESTful Web Services on page 87](#)
- [IPS Management RESTful Web Services on page 91](#)
- [Job Management RESTful Web Services on page 92](#)

Address Management RESTful Web Services

GET

The Security Director Address Management RESTful Web Service is used to collect all the address objects that are configured in Security Director.

URI	/api/juniper/sd/address-management/addresses
HTTP Method	HTTP GET
Content-Type	application/vnd.juniper.sd.address-management.address-refs+xml;version="1" application/vnd.juniper.sd.address-management.address-refs+JSON;version=1;q=0.01
Consumes	None
Produces	Collection of address objects

Sample Address Management Output

Sample XML Output <addresses total="12" uri="/api/juniper/sd/address-management/addresses">
 <address href="/api/juniper/sd/address-management/addresses/98932">

```

uri="/api/juniper/sd/address-management/addresses/98932">
  <name>Any</name>
  <address-type>ANY</address-type>
  <description>Predefined any address</description>
  <host-name>
  </host-name>
  <id>98932</id>
</address>
<address href="/api/juniper/sd/address-management/addresses/98933"
uri="/api/juniper/sd/address-management/addresses/98933">
  <name>Any-IPv4</name>
  <address-type>ANY_IPV4</address-type>
  <description>Predefined any-ipv4 address</description>
  <host-name>
  </host-name>
  <id>98933</id>
</address>
<address href="/api/juniper/sd/address-management/addresses/98934"
uri="/api/juniper/sd/address-management/addresses/98934">
  <name>Any-IPv6</name>
  <address-type>ANY_IPV6</address-type>
  <description>Predefined any-ipv6 address</description>
  <host-name>
  </host-name>
  <id>98934</id>
</address>
</addresses>

```

Sample JSON Ouput

```

{
  "addresses": {
    "@total": "3",
    "@uri": "/api/juniper/sd/address-management/addresses/",
    "address": [
      {
        "@href": "/api/juniper/sd/address-management/addresses/98932",
        "@uri": "/api/juniper/sd/address-management/addresses/98932",
        "name": "Any",
        "address-type": "ANY",
        "description": "Predefined any address",
        "host-name": "",
        "id": 98932
      },
      {
        "@href": "/api/juniper/sd/address-management/addresses/98933",
        "@uri": "/api/juniper/sd/address-management/addresses/98933",
        "name": "Any-IPv4",
        "address-type": "ANY_IPV4",
        "description": "Predefined any-ipv4 address",
        "host-name": "",
        "id": 98933
      },
      {
        "@href": "/api/juniper/sd/address-management/addresses/98934",
        "@uri": "/api/juniper/sd/address-management/addresses/98934",
        "name": "Any-IPv6",
        "address-type": "ANY_IPV6",

```

```

    "description": "Predefined any-ipv6 address",
    "host-name": "",
    "id": 98934
  }
]
}
}

```

Sample Address Management input and output to get address by ID

URI:/api/juniper/sd/address-management/addresses/98933

This API lists detailed information of the address mentioned in the address ID field. If it is an address-group, the API returns the list of member addresses part of this address group.

Sample XML Output

```

<address uri="/api/juniper/sd/address-management/addresses/98933">
  <name>Any-IPv4</name>
  <edit-version>0</edit-version>
  <members uri="/api/juniper/sd/address-management/addresses/98933/members"/>

  <address-type>ANY_IPV4</address-type>
  <description>Predefined any-ipv4 address</description>
  <host-name>
</host-name>
  <address-version>IPv4</address-version>
  <definition-type>PREDEFINED</definition-type>
  <created-by-user-name>Juniper Networks Inc.</created-by-user-name>
  <created-time>2013-04-23T02:31:35Z</created-time>
  <last-modified-time>2013-04-23T02:31:35Z</last-modified-time>
  <id>98933</id>
</address>

```

Sample JSON Output

```

{
  "address": {
    "@uri": "/api/juniper/sd/address-management/addresses/6991",
    "addressType": "Wildcard",
    "addressVersion": "IPv4",
    "createdTime": "2012-10-16T05:26:10Z",
    "definitionType": "CUSTOM",
    "description": "Wildcard Address",
    "id": 6991,
    "ipAddress": "192.168.0.11/255.255.0.255",
    "lastModifiedTime": "2012-10-16T05:26:10Z",
    "name": "Wildcard_1"
  }
}

```

Sample Address Management input and output with Pagination

URI:/api/juniper/sd/address-management/addresses?paging=(limit eq 10)

The first 10 addresses in the first page are listed.

URI:/api/juniper/sd/address-management/addresses?paging=(start eq 5, limit eq 10)

Starting from record 5, next 10 records are fetched.

Sample Address Management Input and Output with Filtering

URI: /api/juniper/sd/address-management/addresses?filter=(global eq 'vpn')

This address search is similar to the address search in the Security Director addresses page. All address names matching with *vpn* are listed.

Sample XML Output

```
<addresses total="8" uri="/api/juniper/sd/address-management/addresses">
  <address href="/api/juniper/sd/address-management/addresses/655616"
uri="/api/juniper/sd/address-management/addresses/655616">
    <name>VPN_AD1</name>
    <address-type>IPADDRESS</address-type>
    <ip-address>1.1.1.1</ip-address>
    <description>First Address</description>
    <id>655616</id>
  </address>
  <address href="/api/juniper/sd/address-management/addresses/655617"
uri="/api/juniper/sd/address-management/addresses/655617">
    <name>VPN_AD2</name>
    <address-type>IPADDRESS</address-type>
    <ip-address>2.2.2.2</ip-address>
    <description>Second Address</description>
    <id>655617</id>
  </address>
  <address href="/api/juniper/sd/address-management/addresses/655618"
uri="/api/juniper/sd/address-management/addresses/655618">
    <name>VPN_AD3</name>
    <address-type>IPADDRESS</address-type>
    <ip-address>3.3.3.3</ip-address>
    <description>Third Address</description>
    <id>655618</id>
  </address>
</addresses>
```

URI: /api/juniper/sd/address-management/addresses?filter=(global eq '1.1.1.1') to list addresses have IP address 1.1.1.1

Sample XML Output

```
<addresses total="1" uri="/api/juniper/sd/address-management/addresses">
  <address href="/api/juniper/sd/address-management/addresses/655616"
uri="/api/juniper/sd/address-management/addresses/655616">
    <name>VPN_AD1</name>
    <address-type>IPADDRESS</address-type>
    <ip-address>1.1.1.1</ip-address>
    <description>First Address</description>
    <id>655616</id>
  </address>
</addresses>
```

Sample Address Management Input and Output with Sorting

URI: /api/juniper/sd/address-management/addresses?sorting=(name(ascending))

This request lists the addresses in an ascending order.

Sample XML Output

```
<addresses total="12" uri="/api/juniper/sd/address-management/addresses">
  <address href="/api/juniper/sd/address-management/addresses/98932"
uri="/api/juniper/sd/address-management/addresses/98932">
```

```

<name>Any</name>
<address-type>ANY</address-type>
<description>Predefined any address</description>
<host-name>
</host-name>
<id>98932</id>
</address>
<address href="/api/juniper/sd/address-management/addresses/98933"
uri="/api/juniper/sd/address-management/addresses/98933">
  <name>Any-IPv4</name>
  <address-type>ANY_IPV4</address-type>
  <description>Predefined any-ipv4 address</description>
  <host-name>
  </host-name>
  <id>98933</id>
</address>
<address href="/api/juniper/sd/address-management/addresses/98934"
uri="/api/juniper/sd/address-management/addresses/98934">
  <name>Any-IPv6</name>
  <address-type>ANY_IPV6</address-type>
  <description>Predefined any-ipv6 address</description>
  <host-name>
  </host-name>
  <id>98934</id>
</address>
</addresses>

```

URI: /api/juniper/sd/address-management/addresses?sorting=(name(descending))

This request lists the addresses in a descending order.

POST

This request is used to create an address. If you are creating an address group, you must create a list of member addresses.

URI	/api/juniper/sd/address-management/addresses
HTTP Method	HTTP POST
Content-Type	application/vnd.juniper.sd.address-management.address+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.address-management.address+json;version=1;charset=UTF-8
Consumes	None
Produces	Creates a new address object

To create a new address object:

1. Send the new address object information to the Junos Space server, as shown in the following example. Copy this information in the Body window, and send it to the Junos Space server.

```

<address>
  <name>iXS_AD1</name>
  <address-type>IPADDRESS</address-type>
  <host-name />
  <edit-version />
  <members />
  <address-version>IPV4</address-version>
  <definition-type>CUSTOM</definition-type>
  <ip-address>207.81.132.32</ip-address>
  <description> A new address</description>
</address>

```

2. A new address object is created. You can verify the same by querying Security Director to return all address objects.

PUT

This request is used to modify an address. Because this is a full replace and if it is an address group, all the member addresses must be part of this address group.

URI	/api/juniper/sd/address-management/addresses/{address-id}
HTTP Method	HTTP PUT
Content-Type	application/vnd.juniper.sd.address-management.address+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.address-management.address+json;version=1;charset=UTF-8
Consumes	None
Produces	Modifies an address object

To modify any address object:

1. Send the modified information to the Junos Space server, as shown in the following example. In this example, edit version value and ID are modified.

Sample Modified Values

```

<address>
  <name>IX_AD1</name>
  <address-type>IPADDRESS</address-type>
  <host-name />
  <edit-version>0</edit-version>
  <id>32768</id>
  <members />
  <address-version>IPV4</address-version>
  <definition-type>CUSTOM</definition-type>
  <ip-address>207.81.132.32</ip-address>
  <description>desc1</description>
</address>

```

Sample XML Input After the Modification

```

<address uri="/api/juniper/sd/address-management/addresses/33413">
  <name>IX_AD1</name>
  <edit-version>1</edit-version>
  <members
uri="/api/juniper/sd/address-management/addresses/33413/members"/>
    <address-type>IPADDRESS</address-type>
    <ip-address>207.81.132.32</ip-address>
    <description>desc1</description>
    <host-name>
    </host-name>
    <address-version>IPV4</address-version>
    <definition-type>CUSTOM</definition-type>
    <created-time>2013-03-21T08:56:57Z</created-time>
    <last-modified-time>2013-03-21T10:20:05.341Z</last-modified-time>
    <id>33413</id>
  </address>

```

DELETE

This request is used to delete a particular address.

URI	/api/juniper/sd/address-management/addresses/{address-id}
HTTP Method	HTTP DELETE
Content-Type	application/vnd.juniper.sd.address-management.delete-address-response+xml;version=1;q=0.01 application/vnd.juniper.sd.address-management.delete-address-response+json;version=1;q=0.01
Consumes	None
Produces	Deletes an address object

PATCH

This request is used to patch or partially modify an address.

URI	/api/juniper/sd/address-management/addresses/{address-id}
HTTP Method	HTTP PATCH
Content-Type	application/vnd.juniper.sd.address-management.address_patch+xml;version=1;charset=UTF-8
Consumes	None
Produces	Partially modifies an address object

To patch an address:

1. Send the patch information to the Junos Space server, as shown in the following example. Copy this information in the Body window, and send it to the Junos Space server.

Sample XML Input 1

```
<diff>
  <replace sel="address/name">
    <name>User_AD1_patch</name>
  </replace>
  <replace sel="address/description">
    <description>description modified</description>
  </replace>
</diff>
```

Sample XML Input to Patch Address Name

```
<diff>
  <replace sel="address/name">
    <name>User_AD1_patch</name>
  </replace>
</diff>
```

Sample XML Input to Add Member in the existing address group

```
<diff>
  <add sel="address/members">
    <address>
      <id/>
      <name>User_AD3</name>
    </address>
  </add>
</diff>
```

Sample XML Input

```
<diff>
  <remove sel="address/members/member[name='User_AD_Group3']"/>
</diff>
```

2. The partially modified address information can be viewed in the device.

Service Management RESTful Web Services

GET

The Security Director Service Management RESTful Web Service is used collect all the service-management services and their associated parameters that are configured in Security Director.

URI	api/juniper/sd/service-management/services
HTTP Method	HTTP GET

Content-Type	application/vnd.juniper.sd.service-management.services+xml;version=1;q=0.01 application/vnd.juniper.sd.service-management.services+json;version=1;q=0.01
Consumes	None
Produces	Collection of services

Sample Service Management Output

Sample XML Output

```
<services total="223" uri="/api/juniper/sd/service-management/services">
  <service href="/api/juniper/sd/service-management/services/98304"
uri="/api/juniper/sd/service-management/services/98304">
    <id>98304</id>
    <name>Any</name>
    <description>predefined any service</description>
    <is-group>false</is-group>
  </service>
  <service href="/api/juniper/sd/service-management/services/98305"
uri="/api/juniper/sd/service-management/services/98305">
    <id>98305</id>
    <name>ftp</name>
    <description>predefined service</description>
    <is-group>false</is-group>
  </service>
  <service href="/api/juniper/sd/service-management/services/98307"
uri="/api/juniper/sd/service-management/services/98307">
    <id>98307</id>
    <name>tftp</name>
    <description>predefined service</description>
    <is-group>false</is-group>
  </service>
  <service href="/api/juniper/sd/service-management/services/98309"
uri="/api/juniper/sd/service-management/services/98309">
    <id>98309</id>
    <name>rtsp</name>
    <description>predefined service</description>
    <is-group>false</is-group>
  </service>
  <service href="/api/juniper/sd/service-management/services/98311"
uri="/api/juniper/sd/service-management/services/98311">
    <id>98311</id>
    <name>netbios-session</name>
    <description>predefined service</description>
    <is-group>false</is-group>
  </service>
  .
  .
  .
  .
  <service href="/api/juniper/sd/service-management/services/99014"
uri="/api/juniper/sd/service-management/services/99014">
    <id>99014</id>
    <name>sun-rpc-any</name>
    <description>
```

```

</description>
<is-group>true</is-group>
</service>
</services>

```

Sample JSON Output

```

{
  "services": {
    "@total": "199",
    "@uri": "/api/juniper/sd/service-management/services",
    "service": [
      {
        "@href": "/api/juniper/sd/service-management/services/98304",
        "@uri": "/api/juniper/sd/service-management/services/98304",
        "id": 98304,
        "name": "Any",
        "description": "predefined any service",
        "is-group": false
      },
      {
        "@href": "/api/juniper/sd/service-management/services/98305",
        "@uri": "/api/juniper/sd/service-management/services/98305",
        "id": 98305,
        "name": "ftp",
        "description": "predefined service",
        "is-group": false
      },
      {
        "@href": "/api/juniper/sd/service-management/services/98965",
        "@uri": "/api/juniper/sd/service-management/services/98965",
        "id": 98965,
        "name": "ms-rpc-any",
        "description": "",
        "is-group": true
      }
    ]
  }
}

```

Sample Service Management Input and Output to get service by ID

URI: /api/juniper/sd/service-management/services/98307

This API will give more information of the service mentioned in the service ID field.

Sample XML Output

```

<service href="/api/juniper/sd/service-management/services/98307"
uri="/api/juniper/sd/service-management/services/98307">
  <last-modified-time>2013-04-23T02:30:58Z</last-modified-time>
  <id>98307</id>
  <created-time>2013-04-23T02:30:58Z</created-time>
  <created-by-user-name>Juniper Networks Inc.</created-by-user-name>
  <protocols>
    <protocol>
      <sunrpc-protocol-type>17</sunrpc-protocol-type>
      <msrpc-protocol-type>17</msrpc-protocol-type>
      <protocol-number>17</protocol-number>
      <name>tftp</name>
    
```

```
<alg>tftp</alg>
<dst-port>69</dst-port>
<disable-timeout>>false</disable-timeout>
<protocol-type>1</protocol-type>
<rpc-program-number>0</rpc-program-number>
<icmp-code>0</icmp-code>
<icmp-type>0</icmp-type>
</protocol>
</protocols>
<edit-version>0</edit-version>
<name>tftp</name>
<is-group>>false</is-group>
<description>predefined service</description>
<members total="0"
uri="/api/juniper/sd/service-management/services/98307/members"/>
</service>
```

Sample JSON Output

```
{
  "service": {
    "@uri": "/api/juniper/sd/service-management/services/6954",
    "createdTime": "2012-10-16T05:26:09Z",
    "description": "User predefined application",
    "id": 6954,
    "lastModifiedTime": "2012-10-16T05:26:09Z",
    "name": "App4_SUN-RPC",
    "protocols": [
      {
        "name": "one_sun",
        "protocolNumber": 17,
        "protocolType": "SUN-RPC",
        "rpcProgramNumber": 123,
        "sunrpcProtocolType": 17
      },
      {
        "name": "two_sun",
        "protocolNumber": 6,
        "protocolType": "SUN-RPC",
        "rpcProgramNumber": 124,
        "sunrpcProtocolType": 6
      }
    ]
  }
}
```

Sample Service Management Input and Output with Pagination

URI:/api/juniper/sd/service-management/services?paging=(start eq 10, limit eq 5)

The input parameters to this API are the record number and the number of records to display in each page.

Sample XML Output

```
<services total="223" uri="/api/juniper/sd/service-management/services">
  <service href="/api/juniper/sd/service-management/services/98323"
uri="/api/juniper/sd/service-management/services/98323">
    <id>98323</id>
    <name>dhcp-client</name>
```

```

    <description>predefined service</description>
    <is-group>>false</is-group>
  </service>
  <service href="/api/juniper/sd/service-management/services/98325"
uri="/api/juniper/sd/service-management/services/98325">
    <id>98325</id>
    <name>dhcp-server</name>
    <description>predefined service</description>
    <is-group>>false</is-group>
  </service>
  <service href="/api/juniper/sd/service-management/services/98327"
uri="/api/juniper/sd/service-management/services/98327">
    <id>98327</id>
    <name>bootpc</name>
    <description>predefined service</description>
    <is-group>>false</is-group>
  </service>
  <service href="/api/juniper/sd/service-management/services/98329"
uri="/api/juniper/sd/service-management/services/98329">
    <id>98329</id>
    <name>bootps</name>
    <description>predefined service</description>
    <is-group>>false</is-group>
  </service>
  <service href="/api/juniper/sd/service-management/services/98331"
uri="/api/juniper/sd/service-management/services/98331">
    <id>98331</id>
    <name>finger</name>
    <description>predefined service</description>
    <is-group>>false</is-group>
  </service>
</services>

```

Sample JSON Output

```

{
  "services": {
    "@total": "223",
    "@uri": "/api/juniper/sd/service-management/services",
    "service": [
      {
        "@href": "/api/juniper/sd/service-management/services/98323",
        "@uri": "/api/juniper/sd/service-management/services/98323",
        "id": 98323,
        "name": "dhcp-client",
        "description": "predefined service",
        "is-group": false
      },
      {
        "@href": "/api/juniper/sd/service-management/services/98325",
        "@uri": "/api/juniper/sd/service-management/services/98325",
        "id": 98325,
        "name": "dhcp-server",
        "description": "predefined service",
        "is-group": false
      },
      {
        "@href": "/api/juniper/sd/service-management/services/98327",

```

```
"@uri": "/api/juniper/sd/service-management/services/98327",
"id": 98327,
"name": "bootpc",
"description": "predefined service",
"is-group": false
},
{
"@href": "/api/juniper/sd/service-management/services/98329",
"@uri": "/api/juniper/sd/service-management/services/98329",
"id": 98329,
"name": "bootps",
"description": "predefined service",
"is-group": false
},
{
"@href": "/api/juniper/sd/service-management/services/98331",
"@uri": "/api/juniper/sd/service-management/services/98331",
"id": 98331,
"name": "finger",
"description": "predefined service",
"is-group": false
}
]
}
}
```

URI: /api/juniper/sd/service-management/services?paging=(limit eq 10) displays only 10 records from the first page.

Sample Service Management Input and Output with Filtering

URI: /api/juniper/sd/service-management/services?filter=(global eq 'smtp')

This Service search is similar to the service search in the Security Director Services page. All the GUI search support is available using this API.

Sample XML Output

```
<services total="1" uri="/api/juniper/sd/service-management/services">
  <service href="/api/juniper/sd/service-management/services/98317"
uri="/api/juniper/sd/service-management/services/98317">
    <id>98317</id>
    <name>smtp</name>
    <description>predefined service</description>
    <is-group>>false</is-group>
  </service>
</services>
```

Sample JSON Output

```
{
  "services": {
    "@total": "1",
    "@uri": "/api/juniper/sd/service-management/services",
    "service": {
      "@href": "/api/juniper/sd/service-management/services/98317",
      "@uri": "/api/juniper/sd/service-management/services/98317",
      "id": 98317,
      "name": "smtp",
      "description": "predefined service",
```

```

    "is-group": false
  }
}

```

Sample Service Management Input and Output with Sorting

URI: /api/juniper/sd/service-management/services?sortby=(name(ascending))

Services are listed in an ascending order.

Sample XML Output

```

<services total="223" uri="/api/juniper/sd/service-management/services">
  <service href="/api/juniper/sd/service-management/services/98304"
uri="/api/juniper/sd/service-management/services/98304">
    <id>98304</id>
    <name>Any</name>
    <description>predefined any service</description>
    <is-group>false</is-group>
  </service>
  <service href="/api/juniper/sd/service-management/services/98385"
uri="/api/juniper/sd/service-management/services/98385">
    <id>98385</id>
    <name>aol</name>
    <description>predefined service</description>
    <is-group>false</is-group>
  </service>
  <service href="/api/juniper/sd/service-management/services/98674"
uri="/api/juniper/sd/service-management/services/98674">
    <id>98674</id>
    <name>apple-ichat</name>
    <description>predefined service</description>
    <is-group>true</is-group>
  </service>
  <service href="/api/juniper/sd/service-management/services/98618"
uri="/api/juniper/sd/service-management/services/98618">
    <id>98618</id>
    <name>apple-ichat-snatmap</name>
    <description>predefined service</description>
    <is-group>false</is-group>
  </service>

```

URI: /api/juniper/sd/service-management/services?sortby=(name(descending))

Services are listed in a descending order.

Sample XML Output

```

<services total="223" uri="/api/juniper/sd/service-management/services">
  <service href="/api/juniper/sd/service-management/services/98558"
uri="/api/juniper/sd/service-management/services/98558">
    <id>98558</id>
    <name>ymsg</name>
    <description>predefined service</description>
    <is-group>false</is-group>
  </service>
  <service href="/api/juniper/sd/service-management/services/98379"
uri="/api/juniper/sd/service-management/services/98379">
    <id>98379</id>
    <name>xnm-ssl</name>

```

```

    <description>predefined service</description>
    <is-group>>false</is-group>
  </service>
  <service href="/api/juniper/sd/service-management/services/98381"
uri="/api/juniper/sd/service-management/services/98381">
    <id>98381</id>
    <name>xnm-clear-text</name>
    <description>predefined service</description>
    <is-group>>false</is-group>
  </service>
  <service href="/api/juniper/sd/service-management/services/98556"
uri="/api/juniper/sd/service-management/services/98556">
    <id>98556</id>
    <name>x-windows</name>
    <description>predefined service</description>
    <is-group>>false</is-group>
  </service>
  <service href="/api/juniper/sd/service-management/services/98560"
uri="/api/juniper/sd/service-management/services/98560">
    <id>98560</id>
    <name>wxcontrol</name>
    <description>predefined service</description>
    <is-group>>false</is-group>
  </service>
  <service href="/api/juniper/sd/service-management/services/98554"
uri="/api/juniper/sd/service-management/services/98554">
    <id>98554</id>
    <name>winframe</name>
    <description>predefined service</description>
    <is-group>>false</is-group>
  </service>

```

POST

This request is used to create a new service.

URI	/api/juniper/sd/service-management/services
HTTP Method	HTTP POST
Content-Type	application/vnd.juniper.sd.service-management.service+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.service-management.service+json;version=1;charset=UTF-8
Consumes	None
Produces	Creates a new service

To create a new service:

1. Send the new service information to the device, as shown in the following example. Copy this information in Body window, and send to the device.

```

<service>
  <name>App1</name>
  <created-by-user-name />
  <edit-version />
  <id />
  <description>predefined application</description>
  <is-group>false</is-group>
  <domain-id>0</domain-id>
  <members />
  <protocols>
    <protocol>
      <name>one</name>
      <sunrpc-protocol-type>6</sunrpc-protocol-type>
      <msrpc-protocol-type>6</msrpc-protocol-type>
      <protocol-number>6</protocol-number>
      <dst-port>21</dst-port>
      <disable-timeout>true</disable-timeout>
      <protocol-type>0</protocol-type>
      <rpc-program-number>0</rpc-program-number>
      <icmp-code>0</icmp-code>
      <icmp-type>0</icmp-type>
      <alg>ftp</alg>
    </protocol>
    <protocol>
      <name>two</name>
      <sunrpc-protocol-type>6</sunrpc-protocol-type>
      <msrpc-protocol-type>6</msrpc-protocol-type>
      <protocol-number>6</protocol-number>
      <dst-port>100</dst-port>
      <disable-timeout>true</disable-timeout>
      <protocol-type>0</protocol-type>
      <rpc-program-number>0</rpc-program-number>
      <icmp-code>0</icmp-code>
      <icmp-type>0</icmp-type>
      <alg>ftp</alg>
    </protocol>
  </protocols>
</service>

```

2. A new service is created.

PUT

This request is used to modify a service.

URI	/api/juniper/sd/service-management/services/{service-id}
HTTP Method	HTTP PUT
Content-Type	application/vnd.juniper.sd.service-management.service+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.service-management.service+json;version=1;charset=UTF-8
Consumes	None

Produces

Modifies any service

To modify any service

1. Send the modification information to the device, by copying the information in the Body window. In the following example, edit version and ID are modified.

```
<service>
  <name>App1</name>
  <created-by-user-name />
  <edit-version >1</edit-version/>
  <id>333 </id>
  <description>predefined application</description>
  <is-group>false</is-group>
  <domain-id>0</domain-id>
  <members />
  <protocols>
    <protocol>
      <name>one</name>
      <sunrpc-protocol-type>6</sunrpc-protocol-type>
      <msrpc-protocol-type>6</msrpc-protocol-type>
      <protocol-number>6</protocol-number>
      <dst-port>21</dst-port>
      <disable-timeout>true</disable-timeout>
      <protocol-type>0</protocol-type>
      <rpc-program-number>0</rpc-program-number>
      <icmp-code>0</icmp-code>
      <icmp-type>0</icmp-type>
      <alg>ftp</alg>
    </protocol>
    <protocol>
      <name>two</name>
      <sunrpc-protocol-type>6</sunrpc-protocol-type>
      <msrpc-protocol-type>6</msrpc-protocol-type>
      <protocol-number>6</protocol-number>
      <dst-port>100</dst-port>
      <disable-timeout>true</disable-timeout>
      <protocol-type>0</protocol-type>
      <rpc-program-number>0</rpc-program-number>
      <icmp-code>0</icmp-code>
      <icmp-type>0</icmp-type>
      <alg>ftp</alg>
    </protocol>
  </protocols>
</service>
```

2. Required fields are modified in a service.

DELETE

This request is used to delete a service.

URI

/api/juniper/sd/service-management/services/{service-id}

HTTP Method	HTTP DELETE
Content-Type	application/vnd.juniper.sd.service-management.service+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.service-management.service+json;version=1;charset=UTF-8
Consumes	None
Produces	Deletes a service

PATCH

This request is used to patch or partially modify a service.

URI	/api/juniper/sd/service-management/services/{service-id}
HTTP Method	HTTP PATCH
Content-Type	application/vnd.juniper.sd.service-management.service_patch+xml;version=1;charset=UTF-8
Consumes	None
Produces	Patches a service

To patch a service:

1. Send the patch information to the device, as shown in the following example. Copy this information in the Body window, and send it to the device.

Sample XML Input 1

```
<!--App_TCP-->
<diff>
  <replace sel="application/name">
    <name>App_TCP_patch</name>
  </replace>
</diff>
```

Sample XML Input 2

```
<!--App_UDP-->
<diff>
  <replace sel="application/protocols/protocol/name">
    <name>one_sccp_patch</name>
  </replace>
  <replace sel="application/description">
    <description>description modified</description>
  </replace>
</diff>
```

Sample XML Input 3

```
<!--App3-->
<diff>
  <add sel="application/protocols/">
    <protocol>
      <sunrpc-protocol-type>17</sunrpc-protocol-type>
      <msrpc-protocol-type>17</msrpc-protocol-type>
      <protocol-number>17</protocol-number>
      <name>sun_rcp_tcp_patch</name>
      <alg>sun-rpc</alg>
      <src-port/>
      <dst-port>121</dst-port>
      <disable-timeout>true</disable-timeout>
      <protocol-type>3</protocol-type>
      <rpc-program-number>14</rpc-program-number>
      <icmp-code>0</icmp-code>
      <icmp-type>0</icmp-type>
      <description/>
    </protocol>
  </add>
</diff>
```

Sample XML Input to Add a Service to a Service Group

```
<diff>
  <add sel="service/members">
    <member>
      <name>App_UDP</name>
    </member>
  </add>
</diff>
```

Sample XML Input to Remove a Service from the Service Group

```
<diff>
  <remove sel="service/members/member[name='App_Group_1']"/>
</diff>
```

Sample XML Input to Remove Protocol Term from the Service

```
<diff>
  <remove sel="service/protocols/protocol[name='ms-tcp-pro']"/>
</diff>
```

-
2. The partial modification is performed for a service.

Firewall Policy Management RESTful Web Services

GET

The Security Director Firewall Policy Management RESTful Web Service is used to collect all the firewall policies and their associated parameters that are configured in Security Director.

URI	/api/juniper/sd/fwpolicy-management/policies
-----	--

HTTP Method	HTTP GET
Content-Type	application/vnd.juniper.sd.fwpolicy-management.firewall-policies+xml;version="1" application/vnd.juniper.sd.fwpolicy-management.firewall-policies+JSON;version=1;q=0.01
Consumes	None
Produces	Collection of firewall polices

Sample Firewall Policy Management Output

Sample XML Output

```
<fwpolicy-management>
<collection href= "/api/juniper/sd/fwpolicy-management/firewall-policies"
rel="firewall-policies"/>
<collection href= "/api/juniper/sd/fwpolicy-management/policy-profiles"
rel="policy-profiles"/>
<collection href= "/api/juniper/sd/fwpolicy-management/custom-objects"
rel="custom-objects"/>
<collection href= "/api/juniper/sd/fwpolicy-management/custom-columns"
rel="custom-columns"/>
<method href= "/api/juniper/sd/fwpolicy-management/modify-rules"
rel="modify-rules"/>
<method href= "/api/juniper/sd/fwpolicy-management/publish" rel="publish"/>
</fwpolicy-management>
```

Sample JSON Output

```
{
  "fwpolicy-management": {
    "collection": [
      {
        "@href": "/api/juniper/sd/fwpolicy-management/firewall-policies",
        "@rel": "firewall-policies"
      },
      {
        "@href": "/api/juniper/sd/fwpolicy-management/policy-profiles",
        "@rel": "policy-profiles"
      },
      {
        "@href": "/api/juniper/sd/fwpolicy-management/custom-objects",
        "@rel": "custom-objects"
      },
      {
        "@href": "/api/juniper/sd/fwpolicy-management/custom-columns",
        "@rel": "custom-columns"
      }
    ],
    "method": [
      {
        "@href": "/api/juniper/sd/fwpolicy-management/modify-rules",
        "@rel": "modify-rules"
      },
      {
        "@href": "/api/juniper/sd/fwpolicy-management/publish",
        "@rel": "publish"
      }
    ]
  }
}
```

```
}  
]  
}  
}
```

Sample Firewall Policy Management Input and Output to List Firewall Policies

URI: /api/juniper/sd/fwpolicy-management/firewall-policies

Sample XML Output

```
<firewall-policies total="1"  
uri="/api/juniper/sd/fwpolicy-management/firewall-policies">  
  <firewall-policy href="/api/juniper/sd/fwpolicy-management/firewall-policies/32772"  
uri="/api/juniper/sd/fwpolicy-management/firewall-policies/32772">  
    <name>All Devices Policy</name>  
    <type>GLOBAL</type>  
    <description>Predefined Policy for all devices</description>  
    <id>32772</id>  
  </firewall-policy>  
</firewall-policies>
```

Sample Firewall Policy Management Input and Output to Get Policy by ID

URI: /api/juniper/sd/fwpolicy-management/firewall-policies/32772

Sample XML Output

```
<firewall-policy uri="/api/juniper/sd/fwpolicy-management/firewall-policies/32772">  
  <name>All Devices Policy</name>  
  <last-modified-time>2013-05-09T21:03:32+05:30</last-modified-time>  
  <created-time>2013-05-09T21:03:32+05:30</created-time>  
  <definition-type>CUSTOM</definition-type>  
  <edit-version>0</edit-version>  
  <policy-type>GLOBAL</policy-type>  
  <description>Predefined Policy for all devices</description>  
  <policy-state>FINAL</policy-state>  
  <ips-mode>NONE</ips-mode>  
  <policy-profile href= "/api/juniper/sd/fwpolicy-management/policy-profiles/32770" >  
    <id>32770</id>  
  </policy-profile>  
  <priority>256</priority>  
  <ips-sigsets/>  
  <publish-state>NOT_PUBLISHED</publish-state>  
  <manage-global-policy>false</manage-global-policy>  
  <manage-zone-policy>true</manage-zone-policy>  
  <precedence>-1</precedence>  
  <policy-priority>LOW</policy-priority>  
  <id>32772</id>  
  <rules href=  
"/api/juniper/sd/fwpolicy-management/firewall-policies/32772/firewall-rules"  
rel="rules"/>  
  <devices href= "/api/juniper/sd/fwpolicy-management/firewall-policies/32772/devices"  
rel="devices"/>  
  <lock href= "/api/juniper/sd/fwpolicy-management/firewall-policies/32772/lock"  
rel="lock"/>  
  <unlock href= "/api/juniper/sd/fwpolicy-management/firewall-policies/32772/unlock"  
rel="unlock"/>  
</firewall-policy>
```

Sample JSON Output

```
{
  "firewall-policy": {
    "@uri": "/api/juniper/sd/fwpolicy-management/firewall-policies/32772",
    "name": "All Devices Policy",
    "last-modified-time": "2013-05-09T21:03:32+05:30",
    "created-time": "2013-05-09T21:03:32+05:30",
    "definition-type": "CUSTOM",
    "edit-version": 0,
    "policy-type": "GLOBAL",
    "description": "Predefined Policy for all devices",
    "policy-state": "FINAL",
    "ips-mode": "NONE",
    "policy-profile": {
      "@href": "/api/juniper/sd/fwpolicy-management/policy-profiles/32770",
      "id": 32770
    },
    "priority": 256,
    "ips-sigsets": "",
    "publish-state": "NOT_PUBLISHED",
    "manage-global-policy": false,
    "manage-zone-policy": true,
    "precedence": -1,
    "policy-priority": "LOW",
    "id": 32772,
    "rules": {
      "@href":
"/api/juniper/sd/fwpolicy-management/firewall-policies/32772/firewall-rules",
      "@rel": "rules"
    },
    "devices": {
      "@href": "/api/juniper/sd/fwpolicy-management/firewall-policies/32772/devices",
      "@rel": "devices"
    },
    "lock": {
      "@href": "/api/juniper/sd/fwpolicy-management/firewall-policies/32772/lock",
      "@rel": "lock"
    },
    "unlock": {
      "@href": "/api/juniper/sd/fwpolicy-management/firewall-policies/32772/unlock",
      "@rel": "unlock"
    }
  }
}
```

You can access the associated devices using this href. In case of group policy there will be link to navigate to the device Exception policy and in case of device policy only the device name will be shown.

URI: /api/juniper/sd/fwpolicy-management/firewall-policies/32772/devices

Sample XML Output

```
<devices total="2">
  uri="/api/juniper/sd/fwpolicy-management/firewall-policies/98325/devices">
    <device href=
"/api/juniper/sd/fwpolicy-management/firewall-policies/327698?device-type=standalone"
    >
      <name>sd-srx210-119.25</name>
```

```
</device>
<device href=
"/api/juniper/sd/fwpolicy-management/firewall-policies/327694?device-type=standalone"
>
<name>sd-srx100-24</name>
</device>
</devices>
```

Sample Firewall Policy Management Input and Output to Get Rule by ID

URI: /api/juniper/sd/fwpolicy-management/firewall-rules/100462

Sample XML Output

```
<firewall-rule uri="/api/juniper/sd/fwpolicy-management/firewall-rules/100462">
  <id>100462</id>
  <serial-number>0</serial-number>
  <name>Device-Zone-1</name>
  <source-zone>
    <name>trust</name>
    <zone-type>ZONE</zone-type>
  </source-zone>
  <source-addresses>
    <source-address href= "/api/juniper/sd/address-management/addresses/66363"
  >
    <id>66363</id>
    <name>AD1</name>
    <address-type>IPADDRESS</address-type>
    </source-address>
    <source-address href= "/api/juniper/sd/address-management/addresses/66364"
  >
    <id>66364</id>
    <name>AD2</name>
    <address-type>IPADDRESS</address-type>
    </source-address>
  </source-addresses>
  <source-identities>
    <source-identity>
      <id>66572</id>
      <name>role1</name>
    </source-identity>
    <source-identity>
      <id>66573</id>
      <name>role10</name>
    </source-identity>
  </source-identities>
  <destination-zone>
    <name>untrust</name>
    <zone-type>ZONE</zone-type>
  </destination-zone>
  <destination-addresses>
    <destination-address href= "/api/juniper/sd/address-management/addresses/66365"
  >
    <id>66365</id>
    <name>AD3</name>
    <address-type>IPADDRESS</address-type>
    </destination-address>
    <destination-address href= "/api/juniper/sd/address-management/addresses/66366"
```

```

>
  <id>66366</id>
  <name>AD4</name>
  <address-type>IPADDRESS</address-type>
</destination-address>
</destination-addresses>
<services>
  <service href= "/api/juniper/sd/service-management/services/66314" >
    <id>66314</id>
    <name>App1_TCP</name>
  </service>
  <service href= "/api/juniper/sd/service-management/services/66319" >
    <id>66319</id>
    <name>App3_ICMP</name>
  </service>
</services>
<action>TUNNEL</action>
<vpn-tunnel-refs>
  <id>32775</id>
  <name>sd-srx210-119_25_pv</name>
</vpn-tunnel-refs>
<application-signature-type>NONE</application-signature-type>
<application-signatures/>
<rule-profile>
  <custom-profile>
    <authentication-type>NONE</authentication-type>
    <default-profile>>false</default-profile>
    <definition-type>CUSTOM</definition-type>

<destination-address-translation>DROP_TRANSLATED</destination-address-translation>

    <enable-count>true</enable-count>
    <id>100463</id>
    <infranet-redirect>NONE</infranet-redirect>
    <log-at-session-close>true</log-at-session-close>
    <log-at-session-init-time>true</log-at-session-init-time>
    <per-minute-alarm-threshold>4</per-minute-alarm-threshold>
    <per-second-alarm-threshold>4</per-second-alarm-threshold>
    <redirect>REVERSE_REDIRECT_WX</redirect>
    <sd-template>
      <id>917596</id>
      <name>template2</name>
    </sd-template>
    <service-offload>true</service-offload>
    <tcp-seq-check>true</tcp-seq-check>
    <tcp-syn-check>true</tcp-syn-check>
  </custom-profile>
  <profile-type>CUSTOM</profile-type>
</rule-profile>
<ips-mode>NONE</ips-mode>
<ips-enabled>>false</ips-enabled>
<scheduler>
  <id>66672</id>
  <name>scheduler1</name>
</scheduler>
<description>description </description>

```

```

<custom-column>
  <custom-column-value id="66567">asd</custom-column-value>
</custom-column>
<edit-version>3</edit-version>
<definition-type>CUSTOM</definition-type>
<rule-group-type>CUSTOM</rule-group-type>
<rule-group-id>98383</rule-group-id>
<rule-type>RULE</rule-type>
<rule-order>0</rule-order>
<policy-name>sd-srx100-24(Exception)</policy-name>
<enabled>true</enabled>
<members href=
"/api/juniper/sd/fwpolicy-management/firewall-rules/100462/members"
rel="members"/>
</firewall-rule>

```

Sample Firewall Policy Management Input and Output with Pagination:

URI:/api/juniper/sd/fwpolicy-management/firewall-policies?paging=(limit eq 10)	The first 10 firewall policies in the first page are listed.
URI:/api/juniper/sd/fwpolicy-management/firewall-policies?paging=(start eq 10, limit eq 5)	Start with record number 10 next 5 records are fetched

Sample Firewall Policy Management Input and Output with Filtering

URI:/api/juniper/sd/fwpolicy-management/firewall-policies?filter=(global eq 'All')

This policy search is similar to the left pane search of the Security Director policy page. Firewall policy names beginning with *All* are filtered.

Sample XML Output

```

<firewall-policies total="1"
uri="/api/juniper/sd/fwpolicy-management/firewall-policies">
  <firewall-policy href="/api/juniper/sd/fwpolicy-management/firewall-policies/32772"
uri="/api/juniper/sd/fwpolicy-management/firewall-policies/32772">
    <name>All Devices Policy</name>
    <type>GLOBAL</type>
    <description>Predefined Policy for all devices</description>
    <id>32772</id>
  </firewall-policy>
</firewall-policies>

```

Sample JSON Output

```

{
  "firewall-policies": {
    "@uri": "/api/juniper/sd/fwpolicy-management/firewall-policies",
    "@size": "1",
    "firewall-policy": {
      "@uri": "/api/juniper/sd/fwpolicy-management/firewall-policies/32772",
      "@href": "/api/juniper/sd/fwpolicy-management/firewall-policies/32772",
      "@key": "32772",
      "description": "Predefined Policy for all devices",
      "member-devices": "",
      "name": "All Devices Policy"
    }
  }
}

```

```
}
}
```

Sample Firewall Policy Management Input and Output with Sorting

URI: /api/juniper/sd/fwpolicy-management/firewall-policies?sortby=(name(ascending))	All firewall policy names are sorted in an ascending order.
URI: /api/juniper/sd/fwpolicy-management/firewall-policies?sortby=(name(descending))	All firewall policy names are sorted in descending order.

Sample Firewall Policy Management Input and Output to Get Global or Zone Rule Groups

URI: /api/juniper/sd/fwpolicy-management/firewall-policies/32772/firewall-rules

This request is used to get the global and zone rule groups. This will not list all the members of these rule groups but instead have a href using which the you can fetch all the members of these rule groups. This supports global filtering. This API supports policy right pane search for rule similar to GUI.

Sample XML Output

```
<firewall-rules total="2"
uri="/api/juniper/sd/fwpolicy-management/firewall-policies/32772/firewall-rules">
  <firewall-rule href="/api/juniper/sd/fwpolicy-management/firewall-rules/32773"
uri="/api/juniper/sd/fwpolicy-management/firewall-policies/32772/firewall-rules/32773">

    <rule-group-type>ZONE</rule-group-type>
    <rule-type>RULEGROUP</rule-type>
    <name>Zone</name>
    <id>32773</id>
  </firewall-rule>
  <firewall-rule href="/api/juniper/sd/fwpolicy-management/firewall-rules/32776"
uri="/api/juniper/sd/fwpolicy-management/firewall-policies/32772/firewall-rules/32776">

    <rule-group-type>GLOBAL</rule-group-type>
    <rule-type>RULEGROUP</rule-type>
    <name>Global</name>
    <id>32776</id>
  </firewall-rule>
</firewall-rules>
```

URI:

/api/juniper/sd/fwpolicy-management/firewall-policies/32779/firewall-rules?filter=(global eq 'trust'). This URI returns only those rule group under which the desired rule is present.

URI: /api/juniper/sd/fwpolicy-management/firewall-rules/32781/members?filter=(global eq 'trust'). To fetch the exact rule you can use filter for the rule members.

Sample Firewall Policy Management Input and Output to Rule or Rule Groups by ID

URI: /api/juniper/sd/fwpolicy-management/firewall-rules/32778

This request is used to get rules by rule ID. Rule groups list information only pertaining to the rule group but it does not list all the members of the rule group. For the rule group

members, href is provided to get all the members of the rule group. Rules contain the information such as rule name, source and destination address, source and destination zones, action, application firewall, rule profile, and so on.

Sample XML Ouput

```
<firewall-rule uri="/api/juniper/sd/fwpolicy-management/firewall-rules/32778">
  <id>32778</id>
  <serial-number>0</serial-number>
  <name>All Devices Post Rules</name>
  <source-zone/>
  <source-addresses/>
  <sourceidentities/>
  <destination-zone/>
  <destination-addresses/>
  <vpn-tunnel-refs/>
  <application-signature-type>NONE</application-signature-type>
  <application-signatures/>
  <rule-profile>
    <profile-type>INHERITED</profile-type>
  </rule-profile>
  <ips-mode>NONE</ips-mode>
  <ips-enabled>false</ips-enabled>
  <scheduler/>
  <custom-column/>
  <edit-version>0</edit-version>
  <definition-type>CUSTOM</definition-type>
  <rule-group-type>POST</rule-group-type>
  <rule-group-id>32776</rule-group-id>
  <rule-type>RULEGROUP</rule-type>
  <rule-order>1</rule-order>
  <policy-name>All Devices Policy</policy-name>
  <enabled>true</enabled>
  <members
    href="/api/juniper/sd/fwpolicy-management/firewall-rules/32778/members" rel=""/>

</firewall-rule>
```

Sample Firewall Policy Management Input and Output to Get Rule Group Members

URI: /api/juniper/sd/fwpolicy-management/firewall-policies/65547/firewall-rules/65549/members

This API is used to all the members of a rule group or rules under a rule group with the rule ID.

Sample XML Output

```
<firewall-rules total="3"
  uri="/api/juniper/sd/fwpolicy-management/firewall-rules/32774/members">
  <firewall-rule href= "/api/juniper/sd/fwpolicy-management/firewall-rules/2195456"
    uri="/api/juniper/sd/fwpolicy-management/firewall-rules/32774/members/2195456">
    <rule-group-type>CUSTOM</rule-group-type>
    <rule-type>RULE</rule-type>
    <name>All-Devices-Zone-Pre-1</name>
    <id>2195456</id>
  </firewall-rule>
  <firewall-rule href= "/api/juniper/sd/fwpolicy-management/firewall-rules/2195458"
    uri="/api/juniper/sd/fwpolicy-management/firewall-rules/32774/members/2195458">
    <rule-group-type>CUSTOM</rule-group-type>
    <rule-type>RULE</rule-type>
```

```

<name>All-Devices-Zone-Pre-2</name>
<id>2195458</id>
</firewall-rule>
<firewall-rule href= "/api/juniper/sd/fwpolicy-management/firewall-rules/2195459"
uri="/api/juniper/sd/fwpolicy-management/firewall-rules/32774/members/2195459">
<rule-group-type>CUSTOM</rule-group-type>
<rule-type>RULE</rule-type>
<name>All-Devices-Zone-Pre-3</name>
<id>2195459</id>
</firewall-rule>
</firewall-rules>

```

Custom Column and Custom Objects

This request is used to query for custom columns of the firewall policy.

URI: ="/api/juniper/sd/fwpolicy-management/custom-columns

Sample XML Output

```

<custom-columns total="3"
uri="/api/juniper/sd/fwpolicy-management/custom-columns">
  <custom-column>
    <created-by-user-name>super</created-by-user-name>
    <created-time>2013-05-21T07:47:43Z</created-time>
    <edit-version>0</edit-version>
    <id>66567</id>
    <last-modified-time>2013-05-21T10:12:55Z</last-modified-time>
    <name>column1</name>
    <regex>[A-Z]</regex>
  </custom-column>
  <custom-column>
    <created-by-user-name>super</created-by-user-name>
    <created-time>2013-05-21T10:12:31Z</created-time>
    <edit-version>0</edit-version>
    <id>66676</id>
    <last-modified-time>2013-05-21T10:12:31Z</last-modified-time>
    <name>column2</name>
    <regex>[/d/d/d]</regex>
  </custom-column>
  <custom-column>
    <created-by-user-name>super</created-by-user-name>
    <created-time>2013-05-21T10:12:44Z</created-time>
    <edit-version>0</edit-version>
    <id>66677</id>
    <last-modified-time>2013-05-21T10:12:44Z</last-modified-time>
    <name>column3</name>
    <regex>[1-9]</regex>
  </custom-column>
</custom-columns>

```

This request is used to query for custom objects of the firewall policy.

URI: /api/juniper/sd/fwpolicy-management/custom-objects

Sample XML Output

```

<custom-objects total="4">
  <custom-object>
    <device-families>
      <device-family>junos-es</device-family>
    </device-families>
  </custom-object>

```

```
</device-families>
<os-version>12.1R3.5</os-version>
<state>enabled</state>
<metadata/>
<name>temp1</name>
<description/>
<last-updated-by>vpsahu</last-updated-by>
<last-update-time>1369047070167</last-update-time>
<schema-id>template-720958</schema-id>
<config-type>CONFIG_TEMPLATE</config-type>
</custom-object>
<custom-object>
<device-families>
  <device-family>junos-ex</device-family>
</device-families>
<os-version>12.1R3.5</os-version>
<state>enabled</state>
<metadata/>
<name>temp2</name>
<description>sad asd </description>
<last-updated-by>vpsahu</last-updated-by>
<last-update-time>1369047081773</last-update-time>
<schema-id>template-287296</schema-id>
<config-type>CONFIG_TEMPLATE</config-type>
</custom-object>
<custom-object>
<device-families>
  <device-family>junos-es</device-family>
</device-families>
<os-version>12.1R3.5</os-version>
<state>enabled</state>
<metadata/>
<name>template1</name>
<description>asda sd</description>
<last-updated-by>super</last-updated-by>
<last-update-time>1369122517597</last-update-time>
<schema-id>template-720958</schema-id>
<config-type>CONFIG_TEMPLATE</config-type>
</custom-object>
<custom-object>
<device-families>
  <device-family>junos-es</device-family>
</device-families>
<os-version>12.1R3.5</os-version>
<state>enabled</state>
<metadata/>
<name>template2</name>
<description>ads asd a</description>
<last-updated-by>super</last-updated-by>
<last-update-time>1369125742772</last-update-time>
<schema-id>template-720965</schema-id>
<config-type>CONFIG_TEMPLATE</config-type>
</custom-object>
</custom-objects>
```

POST

This request is used to create a new firewall policy. you must provide all the basic information of the policy such as policy name, priority, precedence, profile, IPS configuration mode, and so on. You can provide the list of assigned devices to this policy. Otherwise, you can assign a new device to the policy or remove the existing device from the list, by using Assign Devices API.

URI	/api/juniper/sd/fwpolicy-management/firewall-policies
HTTP Method	HTTP POST
Content-Type	application/vnd.juniper.sd.fwpolicy-management.firewall-policy+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.fwpolicy-management.firewall-policy+json;version=1;charset=UTF-8
Consumes	None
Produces	Creates a new firewall policy

To create a new firewall policy:

1. Send the new policy information to the device, as shown in the following example.

Copy this information in the Body window, and click **SEND**.

Sample XML Input

```
<firewall-policy>
  <name>GroupPolicy</name>
  <definition-type>CUSTOM</definition-type>
  <policy-type>GROUP</policy-type>
  <description>policy created by rest</description>
  <policy-state>FINAL</policy-state>
  <ips-mode>NONE</ips-mode>
  <ips-sigsets/>
  <member-devices/>
  <policy-profile>
    <id>32768</id>
  </policy-profile>
  <priority>65539</priority>
  <publish-state>NOT_PUBLISHED</publish-state>
  <manage-global-policy>>false</manage-global-policy>
  <manage-zone-policy>true</manage-zone-policy>
  <precedence>3</precedence>
  <policy-priority>LOW</policy-priority>
  <rules/>
</firewall-policy>
```

You can query for the profile ID of the policy using GET method.

The following example shows creating firewall policy with IPS mode as Basic. Copy this snippet in the Body window and send it to the device.

Sample XML Input

```

<firewall-policy>
  <name>GP_IPS_BASIC_REST</name>
  <edit-version>0</edit-version>
  <definition-type>CUSTOM</definition-type>
  <created-by-user-name>super</created-by-user-name>
  <last-modified-by-user-name />
  <id />
  <policy-type>GROUP</policy-type>
  <description>Policy Created using REST API</description>
  <policy-state>FINAL</policy-state>
  <ips-mode>BASIC</ips-mode>
  <policy-profile>
    <id>32769</id>
  </policy-profile>
  <priority>65537</priority>
  <publish-state>NOT_PUBLISHED</publish-state>
  <manage-global-policy>true</manage-global-policy>
  <manage-zone-policy>true</manage-zone-policy>
  <precedence>1</precedence>
  <policy-priority>LOW</policy-priority>
  <ips-sigsets>
    <ips-sigset>
      <name>Web_Server (Predefined)</name>
      <id>232471</id>
    </ips-sigset>
    <ips-sigset>
      <name>DMZ_Services (Predefined)</name>
      <id>232472</id>
    </ips-sigset>
    <ips-sigset>
      <name>File_Server (Predefined)</name>
      <id>232473</id>
    </ips-sigset>
  </ips-sigsets>
</firewall-policy>

```

Locking and Unlocking a Firewall Policy

This request is used to lock a policy before modifying the policy. Once you complete with the modification, you must unlock the policy. There is a lock time-out before which you must unlock the policy, otherwise the policy is automatically unlocked after the time-out value. The time out is reset on every operation on a policy. If there is no operation, the lock times out occurs

Before you modify, delete a policy, modify rules, or assigning devices, you must first the lock policy. After editing the policy and saving the changes, you must unlock the policy.

URI	/api/juniper/sd/fwpolicy-management/firewall-policies/{policy-id}/lock
HTTP Method	HTTP POST
Content-Type	application/vnd.juniper.sd.lock-management.lock+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.lock-management.lock+jsonl;version=1;charset=UTF-8

Consumes	None
Produces	Locks the firewall policy

To unlock a locked policy, send URI:
 /api/juniper/sd/fwpolicy-management/firewall-policies/{policy-id}/unlock to the device.

Publish Firewall Policy

This request is used to schedule job and publish a policy. To get the job notifications at each stage, you must create a job queue, a consumer for this queue, and pass the queue name as the query parameter. Once the consumer for the queue is created, you can pull the job message from the queue using the consumer. The job message contains the information such as percentage of completion, status of the job, and summary of the job result. It is not required to lock the policy to publish a policy.

URI	/api/juniper/sd/fwpolicy-management/firewall-policies/publish
HTTP Method	HTTP POST
Content-Type	application/vnd.juniper.sd.fwpolicy-management.publish+xml;version=1; charset=UTF-8 application/vnd.juniper.sd.fwpolicy-management.publish+json;version=1; charset=UTF-8
Consumes	None
Produces	Publishes the firewall policy

To publish a policy:

1. Send the publish information in the Body window, as shown in the following example.

Sample XML Input

```
<publish>
  <policy-ids>
    <policy-id>
      1376291
    </policy-id>
  </policy-ids>
</publish>
```

2. To publish and update the policy, use the URI:
 /api/juniper/sd/fwpolicy-management/publish?update=true.

Sample Firewall Policy Management Input for Scheduling of Publish Operation

URI: /api/juniper/sd/fwpolicy-management/publish?schedule=(at(01 01 11 26 05 ? 2013))

The syntax for scheduling a publish at a particular time is `schedule= (at(ss mm HH dd MM ? yy))`.

- `ss`—Seconds (mandatory field)
- `mm`—Minutes (mandatory field)
- `HH`—Hours (mandatory field)
- `dd`—Day of the month (mandatory field)
- `EE`—Day of week (mandatory field)
- `MM`—Month (mandatory field)
- `yy`—Year (optional field)
- `?`—This is the allowed value of `EE`.

If you want to schedule the update after a particular time, send the information as shown in the following example.

URI: `/api/juniper/sd/ fwpolicy-management/publish?schedule=(after(00 00 30))`

The syntax for scheduling after a particular time period is `schedule=(after(dd HH mm))` or `schedule=(after(HH mm))`.

- `dd`—Days (optional parameter)
- `HH`—Hours
- `mm`—Minutes

Assign Devices to Firewall Policy

This request is used to assign devices to a policy or remove the devices from a policy. You are required to send the list of devices, and this list replaces the existing list of devices. You must lock the policy before assigning devices.

URI	<code>/api/juniper/sd/fwpolicy-management/firewall-policies/{policy-id}/assign-devices</code>
HTTP Method	HTTP POST
Content-Type	<code>application/vnd.juniper.sd.fwpolicy-management.assign-devices+xml;version=1; charset=UTF-8</code> <code>application/vnd.juniper.sd.fwpolicy-management.assign-devices+json;version=1; charset=UTF-8</code>
Consumes	None
Produces	Assigns devices to the firewall policy

The following example shows assigning devices to the policy. Copy this information in the Body window, send it to the device.

Sample XML Input

```
<assign-devices>
<deleted-devices>
<deleted-device>
```

Sample XML Input to Add Devices to Policy	<pre> <name>SN-srx3600-1</name> <moid>net.juniper.jmp.jpa.LogicalDevice:327734</moid> </deleted-device> </deleted-devices> </assign-devices> <assign-devices> <added-devices> <added-device> <moid>net.juniper.jmp.jpa.LogicalDevice:327706</moid> </added-device> </added-devices> </assign-devices> </pre>
--	---

Adding And Modifying Rules

This request is used to add a rule or modify the existing rules.

URI	/api/juniper/sd/fwpolicy-management/modify-rules
HTTP Method	HTTP POST
Content-Type	application/vnd.juniper.sd.fwpolicy-management.modify-rules+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.fwpolicy-management.modify-rules+json;version=1;charset=UTF-8
Consumes	None
Produces	Adds a new rule or modifies the existing rules

To add a new rule, send the new rule information in the Body window, as shown in the following example.

Sample XML Input	<pre> <modify-rules> <edit-version>6</edit-version> <policy-id>1081361</policy-id> <added-rules> <added-rule> <serial-number>0</serial-number> <name>GroupPolicy-Zone-Pre-2</name> <source-zone> <name>untrust</name> <zone-type>ZONE</zone-type> </source-zone> <source-addresses> <id>1016076</id> <name>10.159.2.0/25</name> <address-type>NETWORK</address-type> </source-address> </source-addresses> <source-identities> <source-identity> <id>98936</id> <name>Authenticated-User</name> </pre>
-------------------------	--

```
</source-identity>
</source-identities>
<destination-zone>
  <name>VPN</name>
  <zone-type>ZONE</zone-type>
</destination-zone>
<destination-addresses>
  <id>1016100</id>
  <name>10.159.3.0/24</name>
  <address-type>NETWORK</address-type>
</destination-address>
</destination-addresses>
<services>
  <id>98674</id>
  <name>apple-ichat</name>
</service>
</services>
<action>PERMIT</action>
<vpn-tunnel-refs/>
<application-signature-type>BLACKLIST</application-signature-type>
<application-signatures>
  <id>3792</id>
  <name>163</name>
</application-signature>
  <id>5502</id>
  <name>2CH</name>
</application-signature>
</application-signatures>
<rule-profile>
  <profile-type>INHERITED</profile-type>
</rule-profile>
<ips-mode>BASIC</ips-mode>
<ips-enabled>>false</ips-enabled>
<scheduler>
  <id>98969</id>
  <name>sc5</name>
</scheduler>
<description>desc</description>
<custom-column>
  <custom-column-value id="1016232">asd</custom-column-value>
</custom-column>
<edit-version>5</edit-version>
<definition-type>CUSTOM</definition-type>
<rule-group-type>CUSTOM</rule-group-type>
<rule-group-id>1081363</rule-group-id>
<rule-type>RULE</rule-type>
<rule-order>0</rule-order>
<policy-name>GroupPolicy</policy-name>
<enabled>>true</enabled>
</added-rule>
</added-rules>
</modify-rules>
```

If you want make Action as Tunnel, send the following information, in the place of Action configuration.

```

<action>TUNNEL</action>
<vpn-tunnel-refs>
<id>622595</id>
<name>sd-srx210-119_25_pbv</name>
</vpn-tunnel-refs>

```

To modify rules, add the necessary information similar to the configuration parameters sent to add a rule between <modified-rules><modified-rule> tags.

To delete any rule ID, send the delete information as shown in the following example.

Sample XML Input

```

<modify-rules>
<edit-version>17</edit-version>
<policy-id>1015862</policy-id>
<deleted-rules>
<deleted-rule>1015881</deleted-rule>
</deleted-rules>
</modify-rules>

```

PUT

This request is used to modify an existing firewall policy. The Modify operation is a full replace and therefore, you must provide all the basic information of a policy irrespective of that particular field has a new value or not.

URI	/api/juniper/sd/fwpolicy-management/firewall-policies/{policy-id}
HTTP Method	HTTP PUT
Content-Type	application/vnd.juniper.sd.fwpolicy-management.firewall-policy+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.fwpolicy-management.firewall-policy+json;version=1;charset=UTF-8
Consumes	None
Produces	Modifies any firewall policy

To modify a policy:

1. Send the modification information to the device, as shown in the following example. Copy this information in the Body window, and click **SEND**.

Sample XML Input

```

<firewall-policy
uri="/api/juniper/sd/fwpolicy-management/firewall-policies/1081361">
  <name>GroupPolicy1</name>
  <last-modified-time>2013-04-24T23:32:42+05:30</last-modified-time>
  <created-time>2013-04-24T23:29:11+05:30</created-time>
  <created-by-user-name>super</created-by-user-name>
  <definition-type>CUSTOM</definition-type>
  <edit-version>0</edit-version>
  <policy-type>GROUP</policy-type>
  <description>policy created by rest</description>
  <policy-state>FINAL</policy-state>

```

```

    <ips-mode>BASIC</ips-mode>
    <policy-profile
href="/api/juniper/sd/fwpolicy-management/policy-profiles/32768">
    <id>32768</id>
    </policy-profile>
    <priority>65537</priority>
    <ips-sigsets>
    <ips-sigset href="/api/juniper/sd/ips-management/ips-sig-sets/232473">
    <id>232473</id>
    <name>Web_Server (Predefined)</name>
    </ips-sigset>
    <ips-sigset href="/api/juniper/sd/ips-management/ips-sig-sets/232481">
    <id>232481</id>
    <name>DMZ_Services (Predefined)</name>
    </ips-sigset>
    <ips-sigset href="/api/juniper/sd/ips-management/ips-sig-sets/232523">
    <id>232523</id>
    <name>Recommended (Predefined)</name>
    </ips-sigset>
    </ips-sigsets>
    <member-devices/>
    <publish-state>NOT_PUBLISHED</publish-state>
    <manage-global-policy>>false</manage-global-policy>
    <manage-zone-policy>true</manage-zone-policy>
    <precedence>1</precedence>
    <policy-priority>LOW</policy-priority>
    <id>1081361</id>
    <rules
href="/api/juniper/sd/fwpolicy-management/firewall-policies/1081361/firewall-rules"
rel="Rules in the policy"/>
    </firewall-policy>

```

2. The required fields are modified for a policy.

DELETE

This request is used to delete an existing policy. You must lock the policy before deleting.

URI	/api/juniper/sd/fwpolicy-management/{policy-id}
HTTP Method	HTTP DELETE
Content-Type	application/vnd.juniper.sd.fwpolicy-management.firewall-policy+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.fwpolicy-management.firewall-policy+json;version=1;charset=UTF-8
Consumes	None
Produces	Deletes a policy

Scheduler Management RESTful Web Services

GET

The Security Director Scheduler Management RESTful Web Service is used to list all the available schedulers.

URI	/api/juniper/sd/scheduler-management/schedulers/
HTTP Method	HTTP GET
Content-Type	application/vnd.juniper.sd.scheduler-management.scheduler+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.scheduler-management.scheduler+json;version=1;charset=UTF-8
Consumes	None
Produces	Lists schedulers

Sample XML Output

```
<schedulers total="4" uri="/api/juniper/sd/scheduler-management/schedulers/">
  <scheduler href= "/api/juniper/sd/scheduler-management/schedulers/426244"
uri="/api/juniper/sd/scheduler-management/schedulers/426244">
    <name>scheduler_Empty</name>
    <description>scheduler_Empty </description>
    <id>426244</id>
  </scheduler>
  <scheduler href= "/api/juniper/sd/scheduler-management/schedulers/426245"
uri="/api/juniper/sd/scheduler-management/schedulers/426245">
    <name>scheduler_1</name>
    <description>scheduler_1</description>
    <id>426245</id>
  </scheduler>
  <scheduler href= "/api/juniper/sd/scheduler-management/schedulers/426249"
uri="/api/juniper/sd/scheduler-management/schedulers/426249">
    <name>scheduler_2</name>
    <description>scheduler_2</description>
    <id>426249</id>
  </scheduler>
  <scheduler href= "/api/juniper/sd/scheduler-management/schedulers/426250"
uri="/api/juniper/sd/scheduler-management/schedulers/426250">
    <name>scheduler_3</name>
    <description>scheduler_2</description>
    <id>426250</id>
  </scheduler>
</schedulers>
```

Sample Scheduler Management Input and Output with Pagination:

URI:/api/juniper/sd/scheduler-management/schedulers?paging=(limit eq 3)	The first 3 schedulers in the first page are listed.
URI:/api/juniper/sd/scheduler-management/schedulers?paging=(start eq 1, limit eq 2)	Start with record number 1 next 2 records are fetched

Sample Scheduler Management Input and Output with Filtering

You can search for schedulers with global key words and with names as well.

URI: `/api/juniper/sd/scheduler-management/schedulers?filter=(global eq 'scheduler*')`

All schedulers matching with *scheduler* name are filtered.

Sample XML Output

```
<schedulers total="4" uri="/api/juniper/sd/scheduler-management/schedulers/">
  <scheduler href= "/api/juniper/sd/scheduler-management/schedulers/426244"
uri="/api/juniper/sd/scheduler-management/schedulers/426244">
    <name>scheduler_Empty</name>
    <description>scheduler_Empty </description>
    <id>426244</id>
  </scheduler>
  <scheduler href= "/api/juniper/sd/scheduler-management/schedulers/426245"
uri="/api/juniper/sd/scheduler-management/schedulers/426245">
    <name>scheduler_1</name>
    <description>scheduler_1</description>
    <id>426245</id>
  </scheduler>
  <scheduler href= "/api/juniper/sd/scheduler-management/schedulers/426249"
uri="/api/juniper/sd/scheduler-management/schedulers/426249">
    <name>scheduler_2</name>
    <description>scheduler_2</description>
    <id>426249</id>
  </scheduler>
  <scheduler href= "/api/juniper/sd/scheduler-management/schedulers/426250"
uri="/api/juniper/sd/scheduler-management/schedulers/426250">
    <name>scheduler_3</name>
    <description>scheduler_2</description>
    <id>426250</id>
  </scheduler>
</schedulers>
```

URI: `/api/juniper/sd/scheduler-management/schedulers?filter=(name eq 'scheduler_2')`

Scheduler with name *scheduler_2* is only filtered.

Sample XML Output

```
<schedulers total="4" uri="/api/juniper/sd/scheduler-management/schedulers/">
  <scheduler href= "/api/juniper/sd/scheduler-management/schedulers/426249"
uri="/api/juniper/sd/scheduler-management/schedulers/426249">
    <name>scheduler_2</name>
    <description>scheduler_2</description>
    <id>426249</id>
  </scheduler>
</schedulers>
```

Sample Scheduler Management Input and Output with Sorting

URI	Description
<code>/api/juniper/sd/scheduler-management/schedulers?sortby=(name(ascending))</code>	Scheduler names are listed in an ascending order.

URI	Description
/api/juniper/sd/scheduler-management/schedulers?sortby=(name(descending))	Scheduler names are listed in descending order.

POST

This request is used to create a new scheduler.

URI	/api/juniper/sd/scheduler-management/schedulers/
HTTP Method	HTTP POST
Content-Type	application/vnd.juniper.sd.scheduler-management.scheduler+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.scheduler-management.scheduler+json;version=1;charset=UTF-8
Consumes	None
Produces	Create a new scheduler

Sample XML Input

```
<scheduler>
  <name>scheduler_1</name>
  <description>scheduler_1</description>
  <start-date1>2013-04-10.23:23</start-date1>
  <stop-date1>2013-04-12.12:12</stop-date1>
  <start-date2>2013-04-16.03:23</start-date2>
  <stop-date2>2013-04-18.04:12</stop-date2>
  <schedules>
    <schedule>
      <day>MONDAY</day>
      <start-time1 />
      <stop-time1 />
      <start-time2 />
      <stop-time2 />
      <exclude>true</exclude>
      <all-day>false</all-day>
    </schedule>
    <schedule>
      <day>TUESDAY</day>
      <start-time1 />
      <stop-time1 />
      <start-time2 />
      <stop-time2 />
      <exclude>false</exclude>
      <all-day>true</all-day>
    </schedule>
    <schedule>
      <day>WEDNESDAY</day>
      <start-time1>12:12:12</start-time1>
      <stop-time1>13:13:13</stop-time1>
      <start-time2>08:12:02</start-time2>
      <stop-time2>12:12:12</stop-time2>
    </schedule>
  </schedules>
</scheduler>
```

```
<exclude>>false</exclude>
<all-day>>false</all-day>
</schedule>
</schedules>
<definition-type>CUSTOM</definition-type>
</scheduler>
```

Modify a Scheduler

This request is used to modify an existing scheduler.

URI: /api/juniper/sd/scheduler-management/schedulers/426250

Sample XML Input

```
<scheduler uri="/api/juniper/sd/scheduler-management/schedulers/426250">
  <name>scheduler_3</name>
  <description>scheduler_2</description>
  <start-date1>2013-05-12.03:15</start-date1>
  <stop-date1>2013-05-14.04:10</stop-date1>
  <schedules
    uri="/api/juniper/sd/scheduler-management/schedulers/426250/schedules">
    <schedule>
      <day>DAILY</day>
      <start-time1>01:01:01</start-time1>
      <stop-time1>02:02:02</stop-time1>
      <start-time2> </start-time2>
      <stop-time2> </stop-time2>
      <exclude>>false</exclude>
      <all-day>>false</all-day>
    </schedule>
    <schedule>
      <day>MONDAY</day>
      <start-time1> </start-time1>
      <stop-time1> </stop-time1>
      <start-time2> </start-time2>
      <stop-time2> </stop-time2>
      <exclude>>false</exclude>
      <all-day>true</all-day>
    </schedule>
    <schedule>
      <day>TUESDAY</day>
      <start-time1> </start-time1>
      <stop-time1> </stop-time1>
      <start-time2> </start-time2>
      <stop-time2> </stop-time2>
      <exclude>true</exclude>
      <all-day>>false</all-day>
    </schedule>
  </schedules>
  <edit-version>1</edit-version>
  <definition-type>CUSTOM</definition-type>
  <id>426250</id>
</scheduler>
```

DELETE

This request is used to delete a scheduler.

URI	/api/juniper/sd/scheduler-management/schedulers/426250
HTTP Method	HTTP DELETE
Content-Type	application/vnd.juniper.sd.scheduler-management.scheduler+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.scheduler-management.scheduler+json;version=1;charset=UTF-8
Consumes	None
Produces	Deletes a scheduler

Policy Profile Management RESTful Web Services**GET**

The Security Director Policy Profile Management RESTful Web Service is used to collect all the policy profiles.

URI	/api/juniper/sd/fwpolicy-management/policy-profiles
HTTP Method	HTTP GET
Content-Type	application/vnd.juniper.sd.fwpolicy-management.policy-profiles+xml;version=1;q=0.01 application/vnd.juniper.sd.fwpolicy-management.policy-profiles+json;version=1;q=0.01
Consumes	None
Produces	Collection of policy profiles

Sample Policy Profile Management Input and Output to Get Policy Profile by ID

URI:/api/juniper/sd/fwpolicy-management/policy-profiles/32769

This API is used to get the policy profile used in the rule with a profile ID. Link for the user defined profile is available only in the rule. For Custom Profile, details are shown in the rule itself. The rule-profile tag is used for the policy profile.

Sample XML Output

```
<policy-profile uri="/api/juniper/sd/fwpolicy-management/policy-profiles/32769">
  <edit-version>0</edit-version>
  <definition-type>PREDEFINED</definition-type>
  <created-by-user-name>Juniper Networks Inc.</created-by-user-name>
  <id>32769</id>
  <destination-address-translation>NONE</destination-address-translation>
  <service-offload>>false</service-offload>
  <name>Log Session Close</name>
  <description>Predefined profile that logs at session close</description>
```

```

<enable-count>>false</enable-count>
<log-at-session-close>>true</log-at-session-close>
<log-at-session-init-time>>false</log-at-session-init-time>
<redirect>NONE</redirect>
<authentication-type>NONE</authentication-type>
<infranet-redirect>NONE</infranet-redirect>
<default-profile>>false</default-profile>
<sd-template/>
<tcp-syn-check>>false</tcp-syn-check>
<tcp-seq-check>>false</tcp-seq-check>
</policy-profile>

```

Sample Policy Profile Management Input and Output with Pagination

URI	Description
/api/juniper/sd/fwpolicy-management/policy-profiles?paging=(limit eq 10)	Ten policy profiles are listed.
/api/juniper/sd/fwpolicy-management/policy-profiles?paging=(start eq 10 limit eq 5)	From the record number 10, five policy profiles are listed.

Sample Policy Profile Management Input and Output with Filtering

URI: /api/juniper/sd/fwpolicy-management/policy-profiles?filter=(name eq 'Log Session Init')

This policy search is similar to the left pane search of the Security Director policy page.

Sample Policy Profile Management Input and Output With Sorting

URI	Description
/api/juniper/sd/fwpolicy-management/policy-profiles?sortby=(name(ascending))	All policy profile names are sorted in an ascending order.
/api/juniper/sd/fwpolicy-management/policy-profiles?sortby=(name(descending))	All policy profile names are sorted in an ascending order.

POST

This request is used to create a new policy profile

URI	/api/juniper/sd/fwpolicy-management/policy-profiles
HTTP Method	HTTP POST
Content-Type	application/vnd.juniper.sd.fwpolicy-management.policy-profile+xml;version="1" application/vnd.juniper.sd.fwpolicy-management.policy-profile+JSON;version=1;q=0.01
Consumes	None

Produces Create a new policy profile

Sample XML Input

```
<policy-profile>
  <name>policyProfile-1_auth1</name>
  <edit-version>0</edit-version>
  <definition-type>CUSTOM</definition-type>
  <created-by-user-name>super</created-by-user-name>
  <last-modified-by-user-name />
  <id />
  <destination-address-translation>NONE
</destination-address-translation>
  <service-offload>>false</service-offload>
  <description>Deny all and log start of incidents</description>
  <enable-count>>true</enable-count>
  <per-minute-alarm-threshold>20</per-minute-alarm-threshold>
  <per-second-alarm-threshold>5</per-second-alarm-threshold>
  <log-at-session-close>>false</log-at-session-close>
  <log-at-session-init-time>true</log-at-session-init-time>
  <redirect>NONE</redirect>
  <authentication-type>NONE</authentication-type>
  <redirect-url />
  <infranet-redirect>NONE</infranet-redirect>
  <default-profile>>false</default-profile>
  <tcp-syn-check>>false</tcp-syn-check>
  <tcp-seq-check>>false</tcp-seq-check>
</policy-profile>
```

PUT

This request is used to modify a policy profile.

URI	/api/juniper/sd/fwpolicy-management/policy-profiles/{profile-id}
HTTP Method	HTTP PUT
Content-Type	application/vnd.juniper.sd.fwpolicy-management.policy-profile+xml;version="1" application/vnd.juniper.sd.fwpolicy-management.policy-profile+JSON;version=1;q=0.01
Consumes	None
Produces	Modifies a policy profile

Sample XML Modified Value

```
<policy-profile>
  <name>policyProfile-1_auth1</name>
  <edit-version>1</edit-version>
  <definition-type>CUSTOM</definition-type>
  <created-by-user-name>super</created-by-user-name>
  <last-modified-by-user-name />
  <id>327789</id>
  <destination-address-translation>NONE
</destination-address-translation>
  <service-offload>>false</service-offload>
```

```

<description>Deny all and log start of incidents</description>
<enable-count>true</enable-count>
<per-minute-alarm-threshold>20</per-minute-alarm-threshold>
<per-second-alarm-threshold>5</per-second-alarm-threshold>
<log-at-session-close>false</log-at-session-close>
<log-at-session-init-time>true</log-at-session-init-time>
<redirect>NONE</redirect>
<authentication-type>NONE</authentication-type>
<redirect-url />
<infranet-redirect>NONE</infranet-redirect>
<default-profile>false</default-profile>
<tcp-syn-check>false</tcp-syn-check>
<tcp-seq-check>false</tcp-seq-check>
</policy-profile>

```

DELETE

This request is used to delete a policy profile.

URI	/api/juniper/sd/fwpolicy-management/policy-profiles/{profile-id}
HTTP Method	HTTP DELETE
Content-Type	application/vnd.juniper.sd.fwpolicy-management.policy-profile+xml;version="1" application/vnd.juniper.sd.fwpolicy-management.policy-profile+JSON;version=1;q=0.01
Consumes	None
Produces	Delete a policy profile

PATCH

This request is used to patch or make a partial update to the policy profile.

URI	/api/juniper/sd/fwpolicy-management/policy-profiles/{profile-id}
HTTP Method	HTTP PATCH
Content-Type	application/vnd.juniper.sd.fwpolicy-management.policy-profile_patch+json;version=1;charset=UTF-8
Consumes	None
Produces	Patches a policy profile

Sample XML Input

```

<diff>
  <replace sel=policy-profile/name>
    <name>policyProfile-1_patch</name>
  </replace>
</diff>

```

VPN Management RESTful Web Services

GET

The Security Director VPN Management RESTful Web Service is used to all the IPsec VPNs.

URI	/api/juniper/sd/vpn-management
HTTP Method	HTTP GET
Content-Type	application/vnd.juniper.sd.vpn-management.ipsec-vpns+xml;version="1" application/vnd.juniper.sd.vpn-management.ipsec-vpns+json;version="1"
Consumes	None
Produces	Links to manage IPsec VPN, Extranet, VPN Profile and Publish VPN

Sample VPN Management output

Sample XML Output

```
<vpn-management>
  <collection href="/api/juniper/sd/vpn-management/ipsec-vpns" rel="ipsec-vpns"/>

  <collection href="/api/juniper/sd/vpn-management/extranet-devices"
rel="extranet-devices"/>
  <collection href="/api/juniper/sd/vpn-management/vpn-profiles" rel="vpn-profiles"/>

  <method href="/api/juniper/sd/vpn-management/publish" rel="publish"/>
</vpn-management>
```

Sample VPN Management Input and Output to Get All VPNs

URI: /api/juniper/sd/vpn-management/ipsec-vpns

Sample XML Output

```
<ipsec-vpns total="1" uri="/api/juniper/sd/vpn-management/ipsec-vpns">
  <ipsec-vpn href="/api/juniper/sd/vpn-management/ipsec-vpns/623018"
uri="/api/juniper/sd/vpn-management/ipsec-vpns/623018">
    <id>623018</id>
    <edit-version>1</edit-version>
    <name>vpn-ss</name>
    <unique-key-per-tunnel>true</unique-key-per-tunnel>
    <preshared-key-type>AUTO_GENERATE</preshared-key-type>
    <publish-state>NOT_PUBLISHED</publish-state>
    <type>SITE_TO_SITE</type>
    <vpn-tunnel-mode-types>ROUTE_BASED</vpn-tunnel-mode-types>
    <profile href="/api/juniper/sd/vpn-management/vpn-profiles/65536">
      <name>MainModeProfile</name>
      <id>65536</id>
    </profile>
    <description>
    </description>
  </ipsec-vpn>
</ipsec-vpns>
```

Sample VPN Management Input and Output to Get VPN by ID

URI: /api/juniper/sd/vpn-management/ipsec-vpns/623018

This request is used to get a VPN by its ID. The request returns the VPN information such as name, description, tunnel-mode, vpn-type, vpn-profile, preshared-key, tunnel-settings, and route-settings. It also includes two hrefs, one pointing to all the devices that are part of the VPN, and the other pointing to all the tunnels that are part of the VPN. The API also returns the edit version of the VPN which must be used when you modify this particular VPN to safeguard from the concurrent modification related issues.

Sample XML Output

```
<ipsec-vpn uri="/api/juniper/sd/vpn-management/ipsec-vpns/623018">
  <edit-version>1</edit-version>
  <version>1</version>
  <created-by-user-name>super</created-by-user-name>
  <last-modified-by-user-name>super</last-modified-by-user-name>
  <id>623018</id>
  <name>vpn-ss</name>
  <description>
  </description>
  <profile href="/api/juniper/sd/vpn-management/vpn-profiles/65536">
    <name>MainModeProfile</name>
    <id>65536</id>
  </profile>
  <vpn-tunnel-mode-types>ROUTE_BASED</vpn-tunnel-mode-types>
  <type>SITE_TO_SITE</type>
  <tunnel-interface-type>UNNUMBERED</tunnel-interface-type>
  <tunnel-ip-range>
    <mask>0</mask>
  </tunnel-ip-range>
  <tunnel-multi-point-size>1</tunnel-multi-point-size>
  <publish-state>NOT_PUBLISHED</publish-state>
  <routing-type>STATIC</routing-type>
  <preshared-key-type>AUTO_GENERATE</preshared-key-type>
  <unique-key-per-tunnel>true</unique-key-per-tunnel>
  <ospf-area-id>0</ospf-area-id>
  <max-retrans-time>0</max-retrans-time>
  <mini-subnet-mask>0</mini-subnet-mask>
  <devices href="/api/juniper/sd/vpn-management/ipsec-vpns/623018/devices"
    rel="fetches all the devices participating in this vpn"/>
  <tunnels href="/api/juniper/sd/vpn-management/ipsec-vpns/623018/tunnels"
    rel="fetches all tunnel end-points of this vpn"/>
</ipsec-vpn>
```

Sample VPN Management Input and Output to Get All Devices of VPN

URI: /api/juniper/sd/vpn-management/ipsec-vpns/623018/devices

This request is used to get all the devices participating in a VPN and details related to that device such as the device name, whether the device is a hub or spoke, protected-networks, external-interface, proxy-id, and so on. This API supports paging and filtering. It supports global search for filtering by device name and device IP.

Sample XML Output

```
<devices total="2" uri="/api/juniper/sd/vpn-management/ipsec-vpns/623018/devices">
  <device>
```

```

<certificate>
</certificate>
<is-hub>>false</is-hub>
<initiator>>false</initiator>
<external-if-name>ge-0/0/3.0</external-if-name>
<proxy-id>
</proxy-id>
<protected-networks total="0"/>
<protected-network-zones total="1">
  <protected-network-zone>trust</protected-network-zone>
</protected-network-zones>
<tunnel-zone>zone1</tunnel-zone>
<export-default-routes>>false</export-default-routes>
<export-static-routes>>false</export-static-routes>
<export-ospf-routes>>false</export-ospf-routes>
<export-rip-routes>>false</export-rip-routes>
<metric>-1</metric>
<extranet-device>>false</extranet-device>
<tunnel-vr>VR_1</tunnel-vr>
<device-moid>net.juniper.jmp.jpa.LogicalDevice:1114134</device-moid>
<device-name>sd-srx240-1</device-name>
<device-ip>10.205.119.5</device-ip>
<edit-version>0</edit-version>
<version>0</version>
</device>
<device>
  <certificate>
  </certificate>
  <is-hub>>false</is-hub>
  <initiator>>false</initiator>
  <external-if-name>ge-0/0/7.0</external-if-name>
  <proxy-id>10.1.20.1/32</proxy-id>
  <protected-networks total="0"/>
  <protected-network-zones total="1">
    <protected-network-zone>trust</protected-network-zone>
  </protected-network-zones>
  <tunnel-zone>zone1</tunnel-zone>
  <export-default-routes>>false</export-default-routes>
  <export-static-routes>>false</export-static-routes>
  <export-ospf-routes>>false</export-ospf-routes>
  <export-rip-routes>>false</export-rip-routes>
  <metric>-1</metric>
  <extranet-device>>false</extranet-device>
  <tunnel-vr>
  </tunnel-vr>
  <device-moid>net.juniper.jmp.jpa.LogicalDevice:884800</device-moid>
  <device-name>10.205.50.210</device-name>
  <device-ip>10.205.50.210</device-ip>
  <edit-version>0</edit-version>
  <version>0</version>
</device>
</devices>

```

Sample VPN Management Input and Output to Get All Tunnels of VPN

URI: /api/juniper/sd/vpn-management/ipsec-vpns/623018/tunnels

This request is used to get all the tunnels of a VPN. The details include peer device, VPN name, VPN profile, IKE ID, preshared key, external interface, tunnel interface and tunnel zone. It support global search for searching on device name or device IP.

Sample XML Output

```
<tunnels total="2" uri="/api/juniper/sd/vpn-management/ipsec-vpns/623018/tunnels">

  <tunnel>
    <device-name>sd-srx240-1</device-name>
    <external-if-name>ge-0/0/3.0</external-if-name>
    <tunnel-zone>zone1</tunnel-zone>
    <peer-device>
      <device-name>10.205.50.210</device-name>
      <device-ip>10.205.50.210</device-ip>
    </peer-device>
    <tunnel-if-name>st0.1</tunnel-if-name>
    <vpn-name-in-device>10_205_50_210_vpn-ss</vpn-name-in-device>
    <preshared-key>b383e50eac8eec8141a4fa24cb290f7f620a0f08</preshared-key>

    <profile href="/api/juniper/sd/vpn-management/vpn-profiles/">
      <device-ip>10.205.119.5</device-ip>
      <edit-version>0</edit-version>
      <version>0</version>
      <id>623021</id>
    </tunnel>
  <tunnel>
    <device-name>10.205.50.210</device-name>
    <external-if-name>ge-0/0/7.0</external-if-name>
    <tunnel-zone>zone1</tunnel-zone>
    <peer-device>
      <device-name>sd-srx240-1</device-name>
      <device-ip>10.205.119.5</device-ip>
    </peer-device>
    <tunnel-if-name>st0.1</tunnel-if-name>
    <vpn-name-in-device>sd-srx240-1_vpn-ss</vpn-name-in-device>
    <preshared-key>b383e50eac8eec8141a4fa24cb290f7f620a0f08</preshared-key>

    <profile href="/api/juniper/sd/vpn-management/vpn-profiles/">
      <device-ip>10.205.50.210</device-ip>
      <edit-version>0</edit-version>
      <version>0</version>
      <id>623022</id>
    </tunnel>
</tunnels>
```

Sample VPN Management Input and Output with Pagination

URI	Description
/api/juniper/sd/vpn-management/ipsec-vpns?paging=(limit eq 4)	The first four VPNs in the first page are listed.
/api/juniper/sd/vpn-management/ipsec-vpns?paging=(start eq 2, limit eq 4)	From the record 3, two VPNs are listed

Sample VPN Management Input and Output with Filtering

URI: /api/juniper/sd/vpn-management/ipsec-vpns?filter=(global eq 'HnS_Key')

All VPN names matching with *HnS-Key* are filtered and listed.

Sample XML Output

```
<ipsec-vpns total="2" uri="/api/juniper/sd/vpn-management/ipsec-vpns">
  <ipsec-vpn href="/api/juniper/sd/vpn-management/ipsec-vpns/32802"
    uri="/api/juniper/sd/vpn-management/ipsec-vpns/32802">
    <id>32802</id>
    <edit-version>7</edit-version>
    <name>HnS_Key</name>
    <unique-key-per-tunnel>true</unique-key-per-tunnel>
    <preshared-key-type>AUTO_GENERATE</preshared-key-type>
    <publish-state>FULLY_PUBLISHED</publish-state>
    <type>HUB_N_SPOKE</type>
    <vpn-tunnel-mode-types>ROUTE_BASED</vpn-tunnel-mode-types>
    <profile href="/api/juniper/sd/vpn-management/vpn-profiles/32815">
      <name>CustomMainPre</name>
      <id>32815</id>
    </profile>
    <description>
    </description>
  </ipsec-vpn>
</ipsec-vpns>
```

URI: /api/juniper/sd/vpn-management/ipsec-vpns?filter=(global eq 'HnS_Key or CC_Mesh')

All VPN names matching with *HnS-Key* or *CC-Mesh* are filtered and listed.

POST

This request is used to create a new IPsec VPN. The API requires the information such as - VPN name, tunnel mode, VPN type, VPN profile, preshared key, tunnel settings, route settings, and devices that are part of the VPN and device setting details per device such as if the device is hub or spoke, external interface of the device, tunnel zone, protected networks of the device, and route settings.

URI	/api/juniper/sd/vpn-management/ipsec-vpns/create-vpn
HTTP Method	HTTP POST
Content-Type	application/vnd.juniper.sd.vpn-management.ipsec-vpns.create-vpn+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.vpn-management.ipsec-vpns.create-vpn+json;version=1;charset=UTF-8
Consumes	None
Produces	Creates a new IPsec VPN

To create a new IPsec VPN, send the VPN information, as shown in the following example. Copy this information in the Body window, and send it to the Junos Space server.

Sample XML Input

```
<create-vpn>
  <vpn-mo>
    <name>HnS_RestVPN</name>
```

```
<max-retrans-time>0</max-retrans-time>
<ospf-area-id>0</ospf-area-id>
<unique-key-per-tunnel>true</unique-key-per-tunnel>
<preshared-key-type>AUTO_GENERATE</preshared-key-type>
<routing-type>STATIC</routing-type>
<tunnel-multi-point-size>-1</tunnel-multi-point-size>
<tunnel-interface-type>UNNUMBERED</tunnel-interface-type>
<type>HUB_N_SPOKE</type>
<vpn-tunnel-mode-types>ROUTE_BASED</vpn-tunnel-mode-types>
<profile>
  <name>MainModeProfile</name>
  <id>65536</id>
</profile>
<description>Created through REST API</description>
</vpn-mo>
<devices>
  <vpn-device-bean>
    <is-hub>true</is-hub>
    <external-if-name>reth1.0</external-if-name>
    <proxy-id>1.1.1.0/24</proxy-id>
    <tunnel-zone>VPN</tunnel-zone>
    <protected-network-zones total="0">
      <protected-network-zon>trust</protected-network-zon>
    </protected-network-zones>
    <extranet-device>>false</extranet-device>
    <tunnel-vr>
    </tunnel-vr>
    <device-name>Node-177-178-cluster-logical-system1</device-name>
    <device-moid>net.juniper.jmp.jpa.ClusterDeviceEntity:1114113</device-moid>
  </vpn-device-bean>
  <vpn-device-bean>
    <is-hub>>false</is-hub>
    <external-if-name>reth0.0</external-if-name>
    <proxy-id>1.3.1.0/24</proxy-id>
    <tunnel-zone>VPN</tunnel-zone>
    <protected-networks total="0">
      <protected-network>
        <id>983510</id>
        <name>VPN_AD1</name>
      </protected-network>
      <protected-network>
        <id>983511</id>
        <name>VPN_AD2</name>
      </protected-network>
    </protected-networks>
    <extranet-device>>false</extranet-device>
    <tunnel-vr>
    </tunnel-vr>
    <device-name>10.205.119.19</device-name>
    <device-moid>net.juniper.jmp.jpa.ClusterDeviceEntity:688128</device-moid>
  </vpn-device-bean>
</devices>
</create-vpn>
```

<max-retrans-time/> parameter is required for only RIP protocol and it is not a mandatory field.

<ospf-area-id/> is required only for OSPF protocol and it is not a mandatory field.

<tunnel-multi-point-size/> is used to control the number of peer devices that a tunnel interface can share. If the value is -1, single tunnel is shared for all the remote peers. For unnumbered tunnel interface type, tunnel sharing is not possible and the value should be set as 1 for all VPN types. If tunnel interface type is numbered, it must be set as -1 for site-to-site and full-mesh VPNs, for hub & spoke VPNs it can be -1 or any positive value.

Modify VPN

This request is used to modify an existing IPsec VPN. The API requires the information such as VPN name, tunnel mode, VPN type, VPN profile, preshared key, tunnel settings, route settings, devices that are part of the VPN and device setting details per device such as if the device is hub or spoke, external interface of the device, tunnel zone, protected networks of the device, and route settings. You must provide the edit version to safeguard from concurrent modification related issues.

URI: /api/juniper/sd/vpn-management/ipsec-vpns/modify-vpn

Sample XML Input

```
<modify-vpn>
  <vpn-mo>
    <id>1769488</id>
    <version>0</version>
    <edit-version>0</edit-version>
    <name>S2S_RestVPN</name>
    <unique-key-per-tunnel>true</unique-key-per-tunnel>
    <preshared-key-type>AUTO_GENERATE</preshared-key-type>
    <routing-type>STATIC</routing-type>
    <tunnel-multi-point-size>-1</tunnel-multi-point-size>
    <tunnel-ip-range>
      <mask>24</mask>
      <network-ip>1.2.3.0</network-ip>
    </tunnel-ip-range>
    <tunnel-interface-type>NUMBERED</tunnel-interface-type>
    <type>SITE_TO_SITE</type>
    <vpn-tunnel-mode-types>ROUTE_BASED</vpn-tunnel-mode-types>
    <profile>
      <name>MainModeProfile</name>
      <id>65536</id>
    </profile>
    <description>Modified through REST API</description>
  </vpn-mo>
  <device-modification>
    <devices-to-add>
      <vpn-device-bean>
        <is-hub>>false</is-hub>
        <external-if-name>ge-0/0/1.0</external-if-name>
        <tunnel-zone>VPN</tunnel-zone>
        <protected-network-zones total="0">
          <protected-network-zon>trust</protected-network-zon>
        </protected-network-zones>
        <export-default-routes>>false</export-default-routes>
        <export-static-routes>>false</export-static-routes>
        <export-ospf-routes>>false</export-ospf-routes>
        <export-rip-routes>>false</export-rip-routes>
        <metric>0</metric>
      </vpn-device-bean>
    </devices-to-add>
  </device-modification>
</modify-vpn>
```

```
<extranet-device>false</extranet-device>
<device-name>sd-srx240-1</device-name>
<device-moid>net.juniper.jmp.jpa.LogicalDevice:1343512</device-moid>
</vpn-device-bean>
</devices-to-add>
<device-mo-ids-to-delete>

<device-mo-ids-to-delet>net.juniper.jmp.jpa.LogicalDevice:2162696</device-mo-ids-to-delet>

</device-mo-ids-to-delete>
<devices-to-modify>
<vpn-device-bean>
<is-hub>false</is-hub>
<external-if-name>ge-0/0/3.0</external-if-name>
<tunnel-zone>modtest</tunnel-zone>
<protected-networks total="0">
<protected-network>
<id>983510</id>
<name>VPN_AD1</name>
</protected-network>
<protected-network>
<id>983511</id>
<name>VPN_AD2</name>
</protected-network>
</protected-networks>
<export-default-routes>false</export-default-routes>
<export-static-routes>false</export-static-routes>
<export-ospf-routes>false</export-ospf-routes>
<export-rip-routes>false</export-rip-routes>
<extranet-device>false</extranet-device>
<device-name>sd-srx240-2</device-name>
<device-moid>net.juniper.jmp.jpa.LogicalDevice:1343504</device-moid>
</vpn-device-bean>
</devices-to-modify>
</device-modification>
</modify-vpn>
```

The following mandatory fields are required to modify a VPN:

- ID
- Edit version
- VPN type must be same (it cannot be modified)
- TunnelModeType must be same (it cannot be modified)

Modify Tunnels

This request is used to modify VPN tunnels in bulk. This API expects list of modified tunnels. Each member of this list is a modified tunnel. The tunnel related parameters such as VPN name, IKE ID and Preshared key can be modified.

URI: /api/juniper/sd/vpn-management/ipsec-vpns/{vpn-id}/modify-tunnels

Sample XML Input to Modify a Tunnel

```
<modify-tunnels>
  <vpn-basic>
```

```

<id>262162</id>
<edit-version>3</edit-version>
<name>HnS_RestVPN</name>
</vpn-basic>
<end-points>
  <vpn-end-point>
    <ike-id>123</ike-id>
    <vpn-name-in-device>testTunnel</vpn-name-in-device>
    <preshared-key>Preshared123</preshared-key>
  </profile>
  <id>98305</id>
  <name>AggressiveModeProfile</name>
</profile>
<id>262165</id>
</vpn-end-point>
</end-points>
</modify-tunnels>

```

The following mandatory fields are required to modify a tunnel:

- VPN ID
- VPN edit version
- Tunnel ID

Publish VPN

This request is used to schedule a job and publish a VPN. After the publish, you must use the device update RESTful Web Services to update the devices.

URI	api/juniper/sd/vpn-management/publish
HTTP Method	HTTP POST
Content-Type	application/vnd.juniper.sd.vpn-management.publish+xml;version=1;charset=UTF-8"
Consumes	None
Produces	Publishes the IPsec VPN

Send the publish information to the Junos Space server, as shown in the following example.

Sample XML Input

```

<publish>
  <vpn-ids>
    <vpn-id>Integer</vpn-id>
  </vpn-ids>
</publish>

```

Sample VPN Management Input for Scheduling of Publish Operation

URI: /api/juniper/sd/vpn-management/publish?schedule=(at(01 01 11 26 05 ? 2013))

The syntax for scheduling a publish at a particular time is `schedule= (at(ss mm HH dd MM ? yy))`.

- `ss`—Seconds (mandatory field)
- `mm`—Minutes (mandatory field)
- `HH`—Hours (mandatory field)
- `dd`—Day of the month (mandatory field)
- `EE`—Day of week (mandatory field)
- `MM`—Month (mandatory field)
- `yy`—Year (optional field)
- `?`—This is the allowed value of `EE`.

If you want to schedule the update after a particular time, send the information as shown in the following example.

URI: `/api/juniper/sd/vpn-management/publish?schedule=(after(00 00 30))`

The syntax for scheduling after a particular time period is `schedule=(after(dd HH mm))` or `schedule=(after(HH mm))`.

- `dd`—Days (optional parameter)
- `HH`—Hours
- `mm`—Minutes

DELETE

This request is used to delete a VPN.

URI	<code>/api/juniper/sd/vpn-management/ipsec-vpns/{vpn-id}</code>
HTTP Method	HTTP DELETE
Content-Type	<code>application/vnd.juniper.sd.vpn-management.delete+xml;version=1;charset=UTF-8"</code>
Consumes	None
Produces	Deletes a VPN

Extranet Device Management RESTful Web Services

GET

This request is used to get all extranet devices. Get all extranet-devices support paging, sorting by name and global filtering.

URI	<code>/api/juniper/sd/vpn-management/extranet-devices</code>
-----	--

HTTP Method	HTTP GET
Content-Type	application/vnd.juniper.sd.vpn-management.extranet-devices+xml;q=0.01;version=1
Consumes	None
Produces	Collection of extranet devices

Sample VPN Management Input and Output to Get All Extranet Devices

Sample XML Output

```
<extranet-devices total="3" uri="/api/juniper/sd/vpn-management/extranet-devices">
  <extranet-device href="/api/juniper/sd/vpn-management/extranet-devices/524714"
uri="/api/juniper/sd/vpn-management/extranet-devices/524714">
    <name>ExtranetDevice1</name>
    <description>Created by backend automation</description>
    <ip-address>1.12.13.14</ip-address>
    <host-name>ExtranetDevice1</host-name>
    <id>524714</id>
  </extranet-device>
  <extranet-device href="/api/juniper/sd/vpn-management/extranet-devices/524715"
uri="/api/juniper/sd/vpn-management/extranet-devices/524715">
    <name>ExtranetDevice2</name>
    <description>Created by backend automation</description>
    <ip-address>1.12.13.15</ip-address>
    <host-name>ExtranetDevice2</host-name>
    <id>524715</id>
  </extranet-device>
  <extranet-device href="/api/juniper/sd/vpn-management/extranet-devices/524716"
uri="/api/juniper/sd/vpn-management/extranet-devices/524716">
    <name>ExtranetDevice3</name>
    <description>Created by backend automation</description>
    <ip-address>1.12.13.16</ip-address>
    <host-name>ExtranetDevice3</host-name>
    <id>524716</id>
  </extranet-device>
</extranet-devices>
```

Sample VPN Management Input and Output to Get Extranet Device By ID

URI: /api/juniper/sd/vpn-management/extranet-devices/524714

This request is used to get an extranet device by its ID. This request returns the information such as name, definition type, edit version, host name, IP address, description, and ID. The edit version of the extranet device must be used when you modify this particular extranet device to safeguard from the concurrent modification related issues.

Sample XML Output

```
<extranet-device uri="/api/juniper/sd/vpn-management/extranet-devices/524714">
  <name>ExtranetDevice1</name>
  <definition-type>CUSTOM</definition-type>
  <edit-version>0</edit-version>
  <host-name>ExtranetDevice1</host-name>
  <ip-address>1.12.13.14</ip-address>
  <description>Created by backend automation</description>
```

```
<id>524714</id>
</extranet-device>
```

POST

This request is used to create an extranet device.

URI	/api/juniper/sd/vpn-management/extranet-devices
HTTP Method	HTTP POST
Content-Type	application/vnd.juniper.sd.vpn-management.extranet-device+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.vpn-management.extranet-device+json;version=1;charset=UTF-8
Consumes	None
Produces	Creates a new extranet device

To create a new extranet device, send the new extranet device information to the Junos Space server, as shown in the following example.

Sample XML Input

```
<extranet-device>
  <name>ext_REST_device</name>
  <created-by-user-name>super</created-by-user-name>
  <host-name>kk</host-name>
  <ip-address>10.207.96.88</ip-address>
  <description>created from REST</description>
</extranet-device>
<extranet-device>
  <name>ext_REST_device_2</name>
  <created-by-user-name></created-by-user-name>
  <host-name>host2</host-name>
  <ip-address></ip-address>
  <description>created from REST 2</description>
</extranet-device>
<extranet-device>
  <name>ext_REST_device_3</name>
  <created-by-user-name></created-by-user-name>
  <host-name></host-name>
  <ip-address>1.2.4.9</ip-address>
  <description></description>
</extranet-device>
```

PUT

This request is used to modify an extranet device.

URI	/api/juniper/sd/vpn-management/extranet-devices/{extranet-device-id}
HTTP Method	HTTP PUT

Content-Type	application/vnd.juniper.sd.vpn-management.extranet-device+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.vpn-management.extranet-device+json;version=1;charset=UTF-8
Consumes	None
Produces	Modifies an extranet device

To modify an extranet device, send the edit information to the Junos Space server, as shown in the following example.

Sample XML Input

```
<extranet-device>
  <name>ext_REST_device</name>
  <created-by-user-name>Super</created-by-user-name>
  <definition-type>HIDDEN</definition-type>
  <edit-version>0</edit-version>
  <host-name>kaykay</host-name>
  <ip-address>10.207.96.99</ip-address>
  <description>changed from REST</description>
  <id>7634944</id>
</extranet-device>
```

PATCH

This request is used to patch or to make partial updates to an extranet device.

URI	/api/juniper/sd/vpn-management/extranet-devices/{extranet-device-id}
HTTP Method	HTTP PATCH
Content-Type	application/vnd.juniper.sd.vpn-management.extranet-device_patch+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.vpn-management.extranet-device_patch+json;version=1;charset=UTF-8
Consumes	None
Produces	Patches an extranet device

To patch an extranet device, send the patch information to the Junos Space server, as shown in the following example.

Sample XML Input for Name

```
<diff>
  <replace sel="extranet-device/description">
    <description>This is patched</description>
  </replace>
</diff>
```

Sample XML Input for Host

```
<diff>
  <replace sel=extranet-device/host-name>
    <host-name>www.live.in</host-name>
  </replace>
</diff>
```

**Sample XML Input for
IP Address**

```
<diff>
  <replace sel=extranet-device/ip-address>
    <ip-address>1.2.3</ip-address>
  </replace>
  <replace sel=extranet-device/description>
    <description>description patched again</description>
  </replace>
</diff>
```

**Sample XML Input for
Empty IP Address**

```
<diff>
  <replace sel=extranet-device/ip-address>
    <ip-address></ip-address>
  </replace>
  <replace sel=extranet-device/host-name>
    <host-name>emptyIP</host-name>
  </replace>
</diff>
```

DELETE

This request is used to delete an extranet device.

URI	/api/juniper/sd/vpn-management/extranet-devices/{extranet-device-id}
HTTP Method	HTTP DELETE
Content-Type	application/vnd.juniper.sd.vpn-management.extranet-devices+xml;q=0.01;version=1
Consumes	None
Produces	Deletes an extranet device

VPN Profile Management RESTful Web Services**GET**

This request is used to get all vpn profiles. Get all vpn profiles support paging, sorting by name and global filtering.

URI	/api/juniper/sd/vpn-management/vpn-profiles
HTTP Method	HTTP GET
Content-Type	application/vnd.juniper.sd.vpn-management.vpn-profiles+xml;version=1;q=0.01 application/vnd.juniper.sd.vpn-management.vpn-profiles+json;version=1;q=0.01
Consumes	None
Produces	Collection of VPN profiles

Sample VPN Management Input and Output to Get All VPN Profiles

Sample XML Output

```
<vpn-profiles total="2" uri="/api/juniper/sd/vpn-management/vpn-profiles">
  <vpn-profile href="/api/juniper/sd/vpn-management/vpn-profiles/65536"
uri="/api/juniper/sd/vpn-management/vpn-profiles/65536">
    <name>MainModeProfile</name>
    <description>Predefined Main mode profile with Standard proposal set</description>

    <definition-type>PREDEFINED</definition-type>
    <id>65536</id>
  </vpn-profile>
  <vpn-profile href="/api/juniper/sd/vpn-management/vpn-profiles/65537"
uri="/api/juniper/sd/vpn-management/vpn-profiles/65537">
    <name>AggressiveModeProfile</name>
    <description>Predefined Aggressive mode profile with Standard proposal
set</description>
    <definition-type>PREDEFINED</definition-type>
    <id>65537</id>
  </vpn-profile>
</vpn-profiles>
```

Sample VPN Management Input and Output to Get VPN Profile by ID

URI: /api/juniper/sd/vpn-management/vpn-profiles/65536

This request is used to get a VPN profile by its ID.

Sample XML Output

```
<vpn-profile uri="/api/juniper/sd/vpn-management/vpn-profiles/65536">
  <name>MainModeProfile</name>
  <created-by-user-name>Juniper Networks Inc.</created-by-user-name>
  <phase2-setting>
    <phase2-proposal-type>PREDEFINED</phase2-proposal-type>
    <phase2-predefined-proposal-set>Standard</phase2-predefined-proposal-set>
    <custom-phase2-proposals/>
    <idle-time>60</idle-time>
    <install-time>1</install-time>
    <dfbit>NONE</dfbit>
    <enable-anti-replay>false</enable-anti-replay>
    <enable-vpn-monitor>false</enable-vpn-monitor>
    <establish-tunnel-immediately>false</establish-tunnel-immediately>
    <pfs>none</pfs>
  </phase2-setting>
  <phase1-setting>
    <mode>MAIN</mode>
    <ike-id>IPADDRESS</ike-id>
    <auth-method>PRESHARED_KEY</auth-method>
    <phase1-proposal-type>PREDEFINED</phase1-proposal-type>
    <phase1-predefined-proposal-set>Standard</phase1-predefined-proposal-set>
    <custom-phase1-proposals/>
    <enable-nat-traversal>true</enable-nat-traversal>
    <nat-traversal-keep-alive>5</nat-traversal-keep-alive>
    <enable-dpd>true</enable-dpd>
    <always-send-dpd>false</always-send-dpd>
    <dpd-interval>10</dpd-interval>
    <dpd-threshold>5</dpd-threshold>
  </phase1-setting>
  <edit-version>0</edit-version>
  <definition-type>PREDEFINED</definition-type>
```

```

<description>Predefined Main mode profile with Standard proposal set</description>

<id>65536</id>
</vpn-profile>

```

POST

This request is used to create a VPN profile.

URI	/api/juniper/sd/vpn-management/vpn-profiles
HTTP Method	HTTP POST
Content-Type	application/vnd.juniper.sd.vpn-management.vpn-profile+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.vpn-management.vpn-profile+json;version=1;charset=UTF-8
Consumes	None
Produces	Creates a new VPN profile

To create a new VPN profile, send the new VPN profile information to the device, as shown in the following example.

Sample XML Input

```

<vpn-profile>
  <name>VPN_PROFILE_CREATED_FROM_REST</name>
  <phase2-setting>
    <phase2-proposal-type>PREDEFINED</phase2-proposal-type>
    <phase2-predefined-proposal-set>Basic</phase2-predefined-proposal-set>
    <custom-phase2-proposals />
    <idle-time>60</idle-time>
    <install-time>1</install-time>
    <dfbit>NONE</dfbit>
    <enable-anti-replay>true</enable-anti-replay>
    <enable-vpn-monitor>false</enable-vpn-monitor>
    <establish-tunnel-immediately>false</establish-tunnel-immediately>
    <pfs>group1</pfs>
  </phase2-setting>
  <phase1-setting>
    <mode>MAIN</mode>
    <ike-id>NONE</ike-id>
    <auth-method>PRESHARED_KEY</auth-method>
    <phase1-proposal-type>PREDEFINED</phase1-proposal-type>
    <phase1-predefined-proposal-set>Basic</phase1-predefined-proposal-set>
    <custom-phase1-proposals />
    <enable-nat-traversal>true</enable-nat-traversal>
    <nat-traversal-keep-alive>5</nat-traversal-keep-alive>
    <enable-dpd>false</enable-dpd>
    <always-send-dpd>false</always-send-dpd>
    <dpd-interval>10</dpd-interval>
    <dpd-threshold>5</dpd-threshold>
    <username></username>
  </phase1-setting>
  <definition-type>CUSTOM</definition-type>

```

```
<description>created from REST</description>
</vpn-profile>
```

PUT

This request is used to modify the VPN profile.

URI	/api/juniper/sd/vpn-management/vpn-profiles/{vpnProfileID}
HTTP Method	HTTP PUT
Content-Type	application/vnd.juniper.sd.vpn-management.vpn-profile+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.vpn-management.vpn-profile+json;version=1;charset=UTF-8
Consumes	None
Produces	Modifies the VPN profile

To modify the VPN profile, send the edit information to the Junos Space server, as shown in the following example.

Sample XML Input

```
<vpn-profile>
  <name>VPN_PROFILE_CREATED_FROM_REST</name>
  <phase2-setting>
    <phase2-proposal-type>PREDEFINED</phase2-proposal-type>
    <phase2-predefined-proposal-set>Basic</phase2-predefined-proposal-set>
    <custom-phase2-proposals />
    <idle-time>60</idle-time>
    <install-time>1</install-time>
    <dfbit>NONE</dfbit>
    <enable-anti-replay>true</enable-anti-replay>
    <enable-vpn-monitor>false</enable-vpn-monitor>
    <establish-tunnel-immediately>false</establish-tunnel-immediately>
    <pfs>group1</pfs>
  </phase2-setting>
  <phase1-setting>
    <mode>MAIN</mode>
    <ike-id>NONE</ike-id>
    <auth-method>PRESHARED_KEY</auth-method>
    <phase1-proposal-type>PREDEFINED</phase1-proposal-type>
    <phase1-predefined-proposal-set>Basic</phase1-predefined-proposal-set>
    <custom-phase1-proposals />
    <enable-nat-traversal>true</enable-nat-traversal>
    <nat-traversal-keep-alive>5</nat-traversal-keep-alive>
    <enable-dpd>false</enable-dpd>
    <always-send-dpd>false</always-send-dpd>
    <dpd-interval>10</dpd-interval>
    <dpd-threshold>5</dpd-threshold>
    <username></username>
  </phase1-setting>
  <edit-version>0</edit-version>
  <definition-type>CUSTOM</definition-type>
  <description>created from REST</description>
```

```
<id>7471104</id>
</vpn-profile>
```

PATCH

This request is used to patch or to make a partial update to the VPN profile.

URI	/api/juniper/sd/vpn-management/vpn-profiles/{profile-id}
HTTP Method	HTTP PATCH
Content-Type	application/vnd.juniper.sd.vpn-management.vpn-profile_patch+xml;version=1;charset=UTF-8
Consumes	None
Produces	Patches the VPN profile

To patch the VPN profile, send the patch information to the Junos Space server, as shown in the following example.

Sample XML Input for Name

```
<diff>
  <replace sel="vpn-profile/description">
    <description>This is patched</description>
  </replace>
</diff>
```

Sample XML Input for Mode

```
<diff>
  <replace sel=vpn-profile/phase1-setting/mode>
    <mode>MAIN</mode>
  </replace>
  <replace sel=vpn-profile/description>
    <description>description patched</description>
  </replace>
</diff>
```

Sample XML Input for Changing and Adding Phase 2 Custom Proposal

```
<diff>
  <replace sel=vpn-profile/phase2-setting/phase2-proposal-type>
    <phase2-proposal-type>CUSTOM</phase2-proposal-type>
  </replace>
  <add sel=vpn-profile/phase2-setting/custom-phase2-proposals>
    <phase2-proposal>
      <name>testCustom1</name>
      <protocol>esp</protocol>
      <authentication-algorithm>sha_1</authentication-algorithm>
      <encryption-algorithm>aes_cbc_128</encryption-algorithm>
      <lifetime>3600</lifetime>
      <life-size>66</life-size>
    </phase2-proposal>
  </add>
</diff>
```

**Sample XML Input for
Deleting Custom
Proposal**

```
<diff>
  <remove
sel=vpn-profile/phase1-setting/custom-phase1-proposals/phase1-proposal[name='testCustom5']>

</diff>
```

DELETE

This request is used to delete the VPN profile

URI	/api/juniper/sd/vpn-management/vpn-profiles/{profile-id}
HTTP Method	HTTP DELETE
Content-Type	application/vnd.juniper.sd.vpn-management.vpn-profile+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.vpn-management.vpn-profile+json;version=1;charset=UTF-8
Consumes	None
Produces	Deletes the VPN profile

Device Management RESTful Web Services**GET**

The Security Director Device Management RESTful Web Service is used to collect all the device related information.

URI	/api/juniper/sd/device-management/devices
HTTP Method	HTTP GET
Content-Type	application/vnd.juniper.sd.device-management.devices+xml;q="0.01";version="1" application/vnd.juniper.sd.device-management.devices+json;q="0.01";version="1"
Consumes	None
Produces	Collection of device information

Sample Device Management Output**Sample XML Output**

```
<devices total="3" uri="/api/juniper/sd/device-management/devices">
  <device href="/api/juniper/sd/device-management/devices/328456"
uri="/api/juniper/sd/device-management/devices/328456">
    <pending-services total="0"/>
    <name>10.205.50.210</name>
    <platform>SRX1400</platform>
    <cems-moid>net.juniper.jmp.jpa.LogicalDevice:589881</cems-moid>
    <device-ip>10.205.50.210</device-ip>
    <cluster-id>0</cluster-id>
    <device-family>junos-es</device-family>
```

```

    <software-release>12.1X44-D15.1</software-release>
    <id>328456</id>
  </device>
  <device href="/api/juniper/sd/device-management/devices/328462"
uri="/api/juniper/sd/device-management/devices/328462">
    <pending-services total="0"/>
    <name>sd-srx650-4</name>
    <platform>SRX650</platform>
    <cems-moid>net.juniper.jmp.jpa.LogicalDevice:589893</cems-moid>
    <device-ip>10.205.119.4</device-ip>
    <cluster-id>0</cluster-id>
    <device-family>junos-es</device-family>
    <software-release>12.1X44-D15.1</software-release>
    <id>328462</id>
  </device>
  <device href="/api/juniper/sd/device-management/devices/328472"
uri="/api/juniper/sd/device-management/devices/328472">
    <pending-services total="0"/>
    <name>10.205.119.19</name>
    <platform>SRX100B</platform>
    <cems-moid>net.juniper.jmp.jpa.ClusterDeviceEntity:458752</cems-moid>
    <device-ip>10.205.119.19</device-ip>
    <cluster-id>458752</cluster-id>
    <device-family>junos-es</device-family>
    <software-release>12.1X44-D15.1</software-release>
    <id>328472</id>
  </device>
</devices>

```

Sample Device Management Input and Output to Get Device by ID

URI: /api/juniper/sd/device-management/devices/328456

Sample XML Output

```

<device uri="/api/juniper/sd/device-management/devices/328456">
  <management-status>DEVICE_CHANGED</management-status>
  <name>10.205.50.210</name>
  <platform>SRX1400</platform>
  <pending-services total="0"/>
  <cems-moid>net.juniper.jmp.jpa.LogicalDevice:589881</cems-moid>
  <last-updated-at>2013-04-24T13:31:28Z</last-updated-at>
  <virtual-chassis-status>false</virtual-chassis-status>
  <device-ip>10.205.50.210</device-ip>
  <cluster-id>0</cluster-id>
  <configuration-status>In Sync</configuration-status>
  <connection-status>up</connection-status>
  <device-family>junos-es</device-family>
  <software-release>12.1X44-D15.1</software-release>
  <cc-status>Does Not Exist</cc-status>
  <id>328456</id>
  <Zone href="/api/juniper/sd/device-management/devices/328456/zones" rel="Zones
for this device"/>
  <Interfaces href="/api/juniper/sd/device-management/devices/328456/interfaces"
rel="Interfaces for this device"/>
  <routing-instances
href="/api/juniper/sd/device-management/devices/328456/routing-instances"

```

```
rel="Routing instances for this device"/>
</device>
```

Sample Device Management Input and Output to Get Zones of a Security Director Managed Devices

URI: /api/juniper/sd/device-management/devices/328456/zones

Sample XML Output

```
<zones total="5" uri="/api/juniper/sd/device-management/devices/426240/zones">
  <zone>
    <name>trust</name>
    <interfaces total="0">
      <interface>ge-0/0/0.0</interface>
      <interface>ge-0/0/1.0</interface>
      <interface>st0.10</interface>
      <interface>st0.12</interface>
    </interfaces>
  </zone>
  <zone>
    <name>untrust</name>
    <interfaces total="0">
      <interface>ge-0/0/3.0</interface>
      <interface>st0.2</interface>
      <interface>ge-0/0/2.0</interface>
      <interface>st0.4</interface>
      <interface>st0.3</interface>
    </interfaces>
  </zone>
  <zone>
    <name>Untrust</name>
    <interfaces total="0"/>
  </zone>
  <zone>
    <name>zone-10161</name>
    <interfaces total="0"/>
  </zone>
  <zone>
    <name>junos-host</name>
    <interfaces total="0"/>
  </zone>
</zones>
```

Sample Device Management Input and Output to Get Routing Instances of a Security Director Managed Devices

URI: /api/juniper/sd/device-management/devices/98939/interfaces

Sample XML Output

```
<interfaces total="4"
uri="/api/juniper/sd/device-management/devices/98939/interfaces">
  <interface>
    <cems-moid>net.juniper.jmp.jpa.LogicalDevice:294918</cems-moid>
    <edge-point>false</edge-point>
    <is-loopback>false</is-loopback>
    <managed-element>
      <id>0</id>
    </managed-element>
```

```
<ip-addr>10.205.119.4</ip-addr>
<ip-netmask>16</ip-netmask>
<ptp>
  <edge-point>false</edge-point>
  <is-loopback>false</is-loopback>
  <speed>0</speed>
  <mtu>0</mtu>
  <id>0</id>
</ptp>
<is-management>false</is-management>
<family>inet</family>
<unit>0</unit>
<id>327684</id>
<name>ge-0/0/0.0</name>
</interface>
<interface>
  <cems-moid>net.juniper.jmp.jp.a.LogicalDevice:294918</cems-moid>
  <edge-point>false</edge-point>
  <is-loopback>false</is-loopback>
  <managed-element>
    <id>0</id>
  </managed-element>
  <ip-addr>172.168.1.1</ip-addr>
  <ip-netmask>16</ip-netmask>
  <ptp>
    <edge-point>false</edge-point>
    <is-loopback>false</is-loopback>
    <speed>0</speed>
    <mtu>0</mtu>
    <id>0</id>
  </ptp>
  <is-management>false</is-management>
  <family>inet</family>
  <unit>0</unit>
  <id>327692</id>
  <name>ge-0/0/1.0</name>
</interface>
<interface>
  <cems-moid>net.juniper.jmp.jp.a.LogicalDevice:294918</cems-moid>
  <edge-point>false</edge-point>
  <is-loopback>false</is-loopback>
  <managed-element>
    <id>0</id>
  </managed-element>
  <ip-addr>172.168.1.2</ip-addr>
  <ip-netmask>16</ip-netmask>
  <ptp>
    <edge-point>false</edge-point>
    <is-loopback>false</is-loopback>
    <speed>0</speed>
    <mtu>0</mtu>
    <id>0</id>
  </ptp>
  <is-management>false</is-management>
  <family>inet</family>
  <unit>0</unit>
```

```

<id>327694</id>
<name>ge-0/0/2.0</name>
</interface>
<interface>
<cems-moid>net.juniper.jmp.jpa.LogicalDevice:294918</cems-moid>
<edge-point>false</edge-point>
<is-loopback>false</is-loopback>
<managed-element>
<id>0</id>
</managed-element>
<ip-addr>172.168.1.3</ip-addr>
<ip-netmask>16</ip-netmask>
<ptp>
<edge-point>false</edge-point>
<is-loopback>false</is-loopback>
<speed>0</speed>
<mtu>0</mtu>
<id>0</id>
</ptp>
<is-management>false</is-management>
<family>inet</family>
<unit>0</unit>
<id>327696</id>
<name>ge-0/0/3.0</name>
</interface>
</interfaces>

```

Sample Device Management Input and Output to Get routing instances of a Security Director Managed Devices

URI: /api/juniper/sd/device-management/devices/98939/routing-instances

Sample XML Output

```

<routing-instances total="2"
uri="/api/juniper/sd/device-management/devices/98939/routing-instances">
  <routing-instance>
    <instance-type>VIRTUAL_ROUTER</instance-type>
    <vppls>
      <vppls-id>0</vppls-id>
      <no-tunnel-services>false</no-tunnel-services>
      <id>0</id>
    </vppls>
    <device-name>294918</device-name>
    <id>327740</id>
    <name>vr1</name>
  </routing-instance>
  <routing-instance>
    <instance-type>VIRTUAL_ROUTER</instance-type>
    <vppls>
      <vppls-id>0</vppls-id>
      <no-tunnel-services>false</no-tunnel-services>
      <id>0</id>
    </vppls>
    <device-name>294918</device-name>
    <id>327741</id>
    <name>vr2</name>
  </routing-instance>
</routing-instances>

```

```
</routing-instance>
</routing-instances>
```

POST

This request is used to schedule a job to update the particular device and return the job parameters.

URI	api/juniper/sd/device-management/update-devices
HTTP Method	HTTP POST
Content-Type	application/vnd.juniper.sd.device-management.update-devices+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.device-management.update-devices+json;version=1;charset=UTF-8
Consumes	None
Produces	Schedules a job and returns the job paramters

To update the device, send the update information to the Junos Space server, as shown in the following example.

URI: api/juniper/sd/device-management/update-devices

Sample XML Input

```
<update-devices>
  <cems-moids>
    <cems-moid>String</cems-moid>
  </cems-moids>
  <service-types>
    <service-type>POLICY</service-type>
  </service-types>
  <update-options>
    <enable-policy-rematch-srx-only>boolean</enable-policy-rematch-srx-only>
  </update-options>
</update-devices>
```

If you want to schedule the update after a particular time, send the information as shown in the following example.

URI: api/juniper/sd/device-management/update-devices?schedule=(after(00 01 30))

The syntax for scheduling after a particular time period is schedule=(after(dd HH mm)) or schedule=(after(HH mm)).

- dd—Days (optional parameter)
- HH—Hours
- mm—Minutes

The syntax for scheduling a job at a particular time is `schedule= (at(ss mm HH dd MM ? yy))`.

- ss—Seconds (mandatory field)
- mm—Minutes (mandatory field)
- HH—Hours (mandatory field)
- dd—Day of the month (mandatory field)
- EE—Day of week (mandatory field)
- MM—Month (mandatory field)
- yy—Year (optional field)
- ?—This is the allowed value of EE.

Variables Management RESTful Web Services

GET

The Security Director Variables Management RESTful Web Services are used to collect all the variables configured in Security Director.

URI	/api/juniper/sd/variable-management/variable-definitions
HTTP Method	HTTP GET
Content-Type	application/vnd.juniper.sd.variable-management.variable-definitions+xml;q="0.01";version="1" application/vnd.juniper.sd.variable-management.variable-definitions+json;q="0.01";version="1"
Consumes	None
Produces	Collection of variable definitions

Sample Variable Management Input and Output to Get All the Variables

URI: /api/juniper/sd/variable-management/variable-definitions

Sample XML Output

```
<variable-definitions total="2">
  uri="/api/juniper/sd/variable-management/variable-definitions">
    <variable-definition
      href="/api/juniper/sd/variable-management/variable-definitions/655842"
      uri="/api/juniper/sd/variable-management/variable-definitions/655842">
      <name>varzone</name>
      <type>ZONE</type>
      <description>varzone desc modified</description>
      <id>655842</id>
    </variable-definition>
    <variable-definition
      href="/api/juniper/sd/variable-management/variable-definitions/655846"
      uri="/api/juniper/sd/variable-management/variable-definitions/655846">
      <name>varaddress</name>
```

```
<type>ADDRESS</type>
<description>varadd desc modified</description>
<id>655846</id>
</variable-definition>
</variable-definitions>
```

Sample Variable Management input and Output to Get Variable by ID

URI: /api/juniper/sd/variable-management/variable-definitions/655842

Sample XML output

```
<variable-definition
uri="/api/juniper/sd/variable-management/variable-definitions/655842">
  <variable-values-list>
    <variable-values>
      <id>655843</id>
      <device>
        <moid>net.juniper.jmp.jp LogicalDevice:589893</moid>
        <name>sd-srx650-4</name>
      </device>
      <variable-value-detail>
        <variable-value>untrust</variable-value>
        <name>untrust</name>
      </variable-value-detail>
      <context>DEVICE</context>
    </variable-values>
    <variable-values>
      <id>655845</id>
      <device>
        <moid>net.juniper.jmp.jp LogicalDevice:786450</moid>
        <name>sd-srx240-2</name>
      </device>
      <variable-value-detail>
        <variable-value>trust</variable-value>
        <name>trust</name>
      </variable-value-detail>
      <context>DEVICE</context>
    </variable-values>
    <variable-values>
      <id>655844</id>
      <device>
        <moid>net.juniper.jmp.jp LogicalDevice:786454</moid>
        <name>sd-srx240-1</name>
      </device>
      <variable-value-detail>
        <variable-value>junos-host</variable-value>
        <name>junos-host</name>
      </variable-value-detail>
      <context>DEVICE</context>
    </variable-values>
  </variable-values-list>
  <default-value-detail>
    <default-value>untrust</default-value>
  </default-value-detail>
  <name>varzone</name>
  <last-modified-time>2013-04-24T18:56:15Z</last-modified-time>
  <created-time>2013-04-24T18:55:57Z</created-time>
```

```

<last-modified-by-user-name>super</last-modified-by-user-name>
<created-by-user-name>super</created-by-user-name>
<definition-type>CUSTOM</definition-type>
<type>ZONE</type>
<context>DEVICE</context>
<edit-version>1</edit-version>
<description>varzone desc modified</description>
<default-name>untrust</default-name>
<id>655842</id>
</variable-definition>

```

Sample Variable Management Input and Output with Pagination

URI	Description
/api/juniper/sd/variable-management/variable-definitions?paging=(limit eq 10)	The first ten variable definitions in the first page are listed.
/api/juniper/sd/variable-management/variable-definitions?paging=(start eq 5, limit eq 10)	Starting from fifth record next 10 records are fetched

Sample Variable Management Input and Output with Filtering

URI: /api/juniper/sd/variable-management/variable-definitions?filter=(global eq 'var')

All variable names matching with *var* are filtered.

Sample XML Output

```

<variable-definitions total="2"
uri="/api/juniper/sd/variable-management/variable-definitions">
  <variable-definition
href="/api/juniper/sd/variable-management/variable-definitions/655842"
uri="/api/juniper/sd/variable-management/variable-definitions/655842">
    <name>varzone</name>
    <type>ZONE</type>
    <description>varzone desc modified</description>
    <id>655842</id>
  </variable-definition>
  <variable-definition
href="/api/juniper/sd/variable-management/variable-definitions/655846"
uri="/api/juniper/sd/variable-management/variable-definitions/655846">
    <name>varaddress</name>
    <type>ADDRESS</type>
    <description>varadd desc modified</description>
    <id>655846</id>
  </variable-definition>
</variable-definitions>

```

Sample Variable Management Input and Output with Sorting

URI	Description
/api/juniper/sd/variable-management/variable-definitions?sortby=(name(ascending))	All variable definition names are sorted in an ascending order.

URI	Description
/api/juniper/sd/variable-management/variable-definitions?sortBy=(name(ascending))	All variable definition names are sorted in an descending order.

POST

This request is used to create a variable.

URI	/api/juniper/sd/variable-management/variable-definitions
HTTP Method	HTTP POST
Content-Type	application/vnd.juniper.sd.variable-management.variable-definition+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.variable-management.variable-definition+json;version=1;charset=UTF-8
Consumes	None
Produces	Creates a new variable definition

To create a new variable definition, send the new variable information in the Body window, as shown in the following example. This example shows creation of polymorphic address.

Sample XML Input

```
<variable-definition>
  <variable-values-list>
    <variable-values>
      <device>
        <moid>net.juniper.jmp.jp LogicalDevice:327752</moid>
        <name>sd-srx240-2</name>
      </device>
      <variable-value-detail>
        <variable-value>459012</variable-value>
        <name>User_AD4</name>
      </variable-value-detail>
    </variable-values>
    <variable-values>
      <device>
        <moid>net.juniper.jmp.jp LogicalDevice:327748</moid>
        <name>sd-srx240-1</name>
      </device>
      <variable-value-detail>
        <variable-value>459011</variable-value>
        <name>User_AD3</name>
      </variable-value-detail>
    </variable-values>
  </variable-values-list>
  <default-value-detail>
    <default-value>1016194</default-value>
  </default-value-detail>
  <name>var_add1</name>
```

```

<created-by-user-name>super</created-by-user-name>
<definition-type>CUSTOM</definition-type>
<type>ADDRESS</type>
<context>DEVICE</context>
<edit-version>1</edit-version>
<description>variable address created using REST</description>
<default-name>User_AD1</default-name>
</variable-definition>

```

The following example shows creation of polymorphic zone:

Sample XML Input

```

<variable-definition>
  <name>var_zone1</name>
  <created-by-user-name>super</created-by-user-name>
  <definition-type>CUSTOM</definition-type>
  <type>ZONE</type>
  <default-value />
  <context>DEVICE</context>
  <edit-version>0</edit-version>
  <description>variable zone created using REST</description>
  <default-name>trust</default-name>
  <default-value-detail>
    <default-value> trust </default-value>
  </default-value-detail>
  <variable-values-list>
    <variable-values>
      <id />
      <device>
        <moid>net.juniper.jmp.jpj.LogicalDevice:327748</moid>
        <name>sd-srx650-4</name>
      </device>
      <variable-value-detail>
        <variable-value> junos-host </variable-value>
        <name>junos-host</name>
      </variable-value-detail>
      <context>DEVICE</context>
    </variable-values>
  </variable-values-list>
</variable-definition>

```

PUT

This request is used to modify a variable.

URI	/api/juniper/sd/variable-management/variable-definitions/{variable-id}
HTTP Method	HTTP PUT
Content-Type	application/vnd.juniper.sd.variable-management.variable-definition+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.variable-management.variable-definition+json;version=1;charset=UTF-8
Consumes	None
Produces	Modifies a variable definition

To modify a variable definition, send the modify information in the Body window as shown in the following example.

Sample XML Input

```
<variable-definition>
  <variable-values-list>
    <variable-values>
      <id>1016236</id>
      <device>
        <moid>net.juniper.jmp.jpa.LogicalDevice:327752</moid>
        <name>sd-srx240-2</name>
      </device>
      <variable-value-detail
href="/api/juniper/sd/address-management/addresses/459012">
        <variable-value>net.juniper.jnap.sm.om.jpa.AddressEntity:459012</variable-value>

        <name>User_AD4</name>
      </variable-value-detail>
    </variable-values>
  </variable-values-list>
  <default-value-detail
href="/api/juniper/sd/address-management/addresses/1016194">
    <default-value>net.juniper.jnap.sm.om.jpa.AddressEntity:1016194</default-value>
  </default-value-detail>
  <name>var_add1</name>
  <last-modified-time>2013-04-25T00:02:51+05:30</last-modified-time>
  <created-time>2013-04-25T00:02:51+05:30</created-time>
  <created-by-user-name>super</created-by-user-name>
  <definition-type>CUSTOM</definition-type>
  <type>ADDRESS</type>
  <context>DEVICE</context>
  <edit-version>0</edit-version>
  <description>variable address created using REST</description>
  <default-name>User_AD1</default-name>
  <id>1016234</id>
</variable-definition>
```

DELETE

This request is used to delete a variable.

URI	/api/juniper/sd/variable-management/variable-definitions/{variable-id}
HTTP Method	HTTP DELETE
Content-Type	application/vnd.juniper.sd.variable-management.variable-definition+xml;version=1;charset=UTF-8 application/vnd.juniper.sd.variable-management.variable-definition+json;version=1;charset=UTF-8
Consumes	None
Produces	Deletes a variable definition

PATCH

This request is used to patch or to make partial updates to the variable definition.

URI	/api/juniper/sd/variable-management/variable-definitions/{variable-id}
HTTP Method	HTTP PATCH
Content-Type	application/vnd.juniper.sd.variable-management.variable-definition_patch+xml;version=1;charset=UTF-8
Consumes	None
Produces	Patches a variable definition

Application Signature Management RESTful Web Services

GET

The Security Director Application Signature Management RESTful Web Services are used to get all application signatures configured in Security Director.

URI	/api/juniper/sd/app-sig-management
HTTP Method	HTTP GET
Content-Type	application/vnd.juniper.sd.app-sig-management+xml;version="1" application/vnd.juniper.sd.app-sig-management+json;version="1"
Consumes	None
Produces	Collection of application signatures

Sample Application Signature Management Input and Output to Get All Application Signatures

URI: /api/juniper/sd/app-sig-management/app-sigs

This request is used to get all application signatures. Get all application signatures support paging, sorting by name and global filtering.

Sample XML output

```
<app-sigs total="1751" uri="/api/juniper/sd/app-sig-management/app-sigs">
  <app-sig href="/api/juniper/sd/app-sig-management/app-sigs/361"
uri="/api/juniper/sd/app-sig-management/app-sigs/361">
    <display-name>MISC: Finger Protocol</display-name>
    <definition-type>PREDEFINED</definition-type>
    <id>361</id>
    <name>FINGER</name>
    <type>protocol</type>
    <category>Infrastructure</category>
  </app-sig>
  <app-sig href="/api/juniper/sd/app-sig-management/app-sigs/363"
```

```

uri="/api/juniper/sd/app-sig-management/app-sigs/363">
  <display-name>Infrastructure:Directory</display-name>
  <definition-type>PREDEFINED</definition-type>
  <id>363</id>
  <name>Infrastructure:Directory</name>
  <type>group</type>
  <category>Infrastructure</category>
</app-sig>
<app-sig href="/api/juniper/sd/app-sig-management/app-sigs/364"
uri="/api/juniper/sd/app-sig-management/app-sigs/364">
  <display-name>Infrastructure</display-name>
  <definition-type>PREDEFINED</definition-type>
  <id>364</id>
  <name>Infrastructure</name>
  <type>group</type>
  <category>Infrastructure</category>
</app-sig>
<app-sig href="/api/juniper/sd/app-sig-management/app-sigs/366"
uri="/api/juniper/sd/app-sig-management/app-sigs/366">
  <display-name>MISC: Echo Protocol</display-name>
  <definition-type>PREDEFINED</definition-type>
  <id>366</id>
  <name>ECHO</name>
  <type>protocol</type>
  <category>Infrastructure</category>
</app-sig>
</app-sigs>

```

Sample Application Signature Management Input and Output to Get Application Signature by ID

URI: /api/juniper/sd/app-sig-management/app-sigs/361

Sample XML Output

```

<app-sig uri="/api/juniper/sd/app-sig-management/app-sigs/361">
  <edit-version>0</edit-version>
  <definition-type>PREDEFINED</definition-type>
  <id>361</id>
  <objtype>0</objtype>
  <display-name>MISC: Finger Protocol</display-name>
  <application-name>FINGER</application-name>
  <disable-state>>false</disable-state>
  <pattern-sets>
    <pattern-set>
      <ctspattern>.+</ctspattern>
      <default-port>TCP/79</default-port>
      <logic-function>
      </logic-function>
      <max-transactions>0</max-transactions>
      <members/>
      <mindata>1</mindata>
      <ordered>>false</ordered>
      <pattern-order>0</pattern-order>
      <port>TCP/79</port>
      <stcpattern>.+</stcpattern>
      <type>protocol</type>
      <protocol>HTTP</protocol>
    </pattern-set>
  </pattern-sets>

```

```

    </pattern-set>
  </pattern-sets>
  <name>FINGER</name>
  <version-no>2255</version-no>
  <app-id>8</app-id>
  <description>This signature detects the Finger Protocol.</description>
  <app-sig-tags>
    <idp-common-value>
      <name>Category</name>
      <value>Infrastructure</value>
    </idp-common-value>
    <idp-common-value>
      <name>Subcategory</name>
      <value>Directory</value>
    </idp-common-value>
    <idp-common-value>
      <name>Characteristic</name>
      <value>Can Leak Information</value>
    </idp-common-value>
    <idp-common-value>
      <name>Characteristic</name>
      <value>Known Vulnerabilities</value>
    </idp-common-value>
    <idp-common-value>
      <name>Risk</name>
      <value>2</value>
    </idp-common-value>
  </app-sig-tags>
  <urls>
    <url>http://tools.ietf.org/html/rfc1288</url>
  </urls>
  <type>protocol</type>
  <order>5</order>
  <chainorder>>false</chainorder>
  <group-nested-members total="0"/>
  <group-app-members total="0"/>
  <max_transactions>0</max_transactions>
  <parent-id>0</parent-id>
  <default-port>TCP/79</default-port>
  <app>
    <protocol-name>FINGER</protocol-name>
    <port>TCP/79</port>
    <appentry>
      <order>0</order>
      <mindata>1</mindata>
    </appentry>
  </app>
  <category>Infrastructure</category>
  <aliases/>
</app-sig>

```

Sample Variable Management Input and Output with Sorting

URI: /api/juniper/sd/app-sig-management/app-sigs?sortby=(name (ascending))

This request lists the application signatures in an ascending order.

Sample XML Output

```
<app-sigs total="1751" uri="/api/juniper/sd/app-sig-management/app-sigs">
  <app-sig href="/api/juniper/sd/app-sig-management/app-sigs/361"
uri="/api/juniper/sd/app-sig-management/app-sigs/361">
    <display-name>MISC: Finger Protocol</display-name>
    <definition-type>PREDEFINED</definition-type>
    <id>361</id>
    <name>FINGER</name>
    <type>protocol</type>
    <category>Infrastructure</category>
  </app-sig>
  <app-sig href="/api/juniper/sd/app-sig-management/app-sigs/363"
uri="/api/juniper/sd/app-sig-management/app-sigs/363">
    <display-name>Infrastructure:Directory</display-name>
    <definition-type>PREDEFINED</definition-type>
    <id>363</id>
    <name>Infrastructure:Directory</name>
    <type>group</type>
    <category>Infrastructure</category>
  </app-sig>
  <app-sig href="/api/juniper/sd/app-sig-management/app-sigs/364"
uri="/api/juniper/sd/app-sig-management/app-sigs/364">
    <display-name>Infrastructure</display-name>
    <definition-type>PREDEFINED</definition-type>
    <id>364</id>
    <name>Infrastructure</name>
    <type>group</type>
    <category>Infrastructure</category>
  </app-sig>
  <app-sig href="/api/juniper/sd/app-sig-management/app-sigs/366"
uri="/api/juniper/sd/app-sig-management/app-sigs/366">
    <display-name>MISC: Echo Protocol</display-name>
    <definition-type>PREDEFINED</definition-type>
    <id>366</id>
    <name>ECHO</name>
    <type>protocol</type>
    <category>Infrastructure</category>
  </app-sig>
</app-sigs>
```

URI: /api/juniper/sd/app-sig-management/app-sigs?sortby=(name (descending))

This request lists the application signatures in descending order.

Sample Application Signature Management Input and Output with Pagination

URI	Description
/api/juniper/sd/app-sig-management/app-sigs?paging=(limit eq 10)	Ten application signatures are listed
/api/juniper/sd/app-sig-management/app-sigs?paging=(start eq 100, limit eq 10)	From record number 100, ten application signatures are listed.

IPS Management RESTful Web Services

GET

The Security Director IPS Management RESTful Web Services are used to get all IPS signature sets configured in Security Director.

URI	/api/juniper/sd/ips-management/ips-sig-sets
HTTP Method	HTTP GET
Content-Type	application/vnd.juniper.sd.ips-management.ips-sig-sets+xml;q="0.01";version="1" application/vnd.juniper.sd.ips-management.ips-sig-sets+json;q="0.01";version="1"
Consumes	None
Produces	Collection of IPS signature sets

Sample IPS Management Input and Output to Get All IPS Signature Sets

URI: /api/juniper/sd/ips-management/ips-sig-sets

This request is used to get all IPS signature sets.

Sample XML Output

```
<ips-sig-sets total="9" uri="/api/juniper/sd/ips-management/ips-sig-sets">
  <ips-sig-set href="/api/juniper/sd/ips-management/ips-sig-sets/232479"
uri="/api/juniper/sd/ips-management/ips-sig-sets/232479">
    <name>Web_Server (Predefined) (29)</name>
    <description>This template policy is designed to protect commonly used HTTP servers
from remote attacks.</description>
    <definition-type>PREDEFINED</definition-type>
    <id>232479</id>
  </ips-sig-set>
  <ips-sig-set href="/api/juniper/sd/ips-management/ips-sig-sets/232487"
uri="/api/juniper/sd/ips-management/ips-sig-sets/232487">
    <name>DMZ_Services (Predefined) (40)</name>
    <description>This template policy is designed to be used to protect a typical DMZ
environment.</description>
    <definition-type>PREDEFINED</definition-type>
    <id>232487</id>
  </ips-sig-set>
  <ips-sig-set href="/api/juniper/sd/ips-management/ips-sig-sets/232495"
uri="/api/juniper/sd/ips-management/ips-sig-sets/232495">
    <name>DNS_Service (Predefined) (11)</name>
    <description>This template policy is designed to protect DNS services. Use this template
as a starting point to customize your desired level of protection.</description>
    <definition-type>PREDEFINED</definition-type>
    <id>232495</id>
  </ips-sig-set>
</ips-sig-sets>
```

Sample IPS Management Input and Output to Get IPS Signature Set by ID

URI: /api/juniper/sd/ips-management/ips-sig-sets/232479

This request is used to get IPS signature set by its ID.

Sample XML Output

```
<ips-sig-set uri="/api/juniper/sd/ips-management/ips-sig-sets/232479">
  <name>Web_Server (Predefined)</name>
  <description>This template policy is designed to protect commonly used HTTP servers
from remote attacks.</description>
  <edit-version>1</edit-version>
  <definition-type>PREDEFINED</definition-type>
  <created-time>2013-04-24T01:47:24Z</created-time>
  <last-modified-time>2013-04-24T01:47:49Z</last-modified-time>
  <id>232479</id>
  <policy-priority>LOW</policy-priority>
  <priority>2</priority>
  <type>SIGNATURESET</type>
  <signature-sets/>
  <precedence>99</precedence>
  <policy-state>FINAL</policy-state>
</ips-sig-set>
```

Job Management RESTful Web Services

GET

The Security Director Job Management RESTful Web Services are used to get all job information of a device in Security Director.

URI	api/juniper/sd/job-management/jobs/{job-id}/device-results
HTTP Method	HTTP GET
Content-Type	application/vnd.juniper.sd.job-management.device-results+xml;version=1;q=0.01 application/vnd.juniper.sd.job-management.device-results+json;version=1;q=0.01
Consumes	None
Produces	Returns the device specific status for a particular update job.

Sample XML Output

```
<device-results total="1"
uri="/api/juniper/sd/job-management/jobs/131109/device-results/">
  <device-result>
    <associated-service-name-list total="0">
      <associated-service-name-list>testVPN</associated-service-name-list>
      <associated-service-name-list>dev123</associated-service-name-list>
    </associated-service-name-list>
    <device-ip>10.205.119.25</device-ip>
    <hub>>false</hub>
    <job-result-id>491524</job-result-id>
    <warning-messages total="0"/>
    <job-instance-id>131109</job-instance-id>
    <status>SUCCESS</status>
    <device-name>sd-srx210-119.25</device-name>
```

```

    <Configuration href=
"/api/juniper/sd/job-management/jobs/131109/device-results/491524" />
  </device-result>
</device-results>

```

Sample Input and Output Showing Configuration of the Update Job

URI: api/juniper/sd/job-management/jobs/{job-id}/device-results/{job-result-id}

Sample XML Output

```

<configurations total="1"
uri="/api/juniper/sd/job-management/jobs/131109/device-results/491524">
  <configuration>
    <edit-config>
      <?xml version="1.0" encoding="UTF-8"?>
      <configuration>
        <applications>
          <application operation="create">
            <name>apple-ichat-snatmap</name>
            <destination-port>5678</destination-port>
            <protocol>udp</protocol>
          </application>
          <application-set operation="create">
            <name>apple-ichat</name>
            <application>
              <name>junos-aol</name>
            </application>
            <application>
              <name>apple-ichat-snatmap</name>
            </application>
            <application>
              <name>junos-https</name>
            </application>
            <application>
              <name>junos-sip</name>
            </application>
            <application>
              <name>junos-http</name>
            </application>
          </application-set>
        </applications>
        <interfaces>
          <interface>
            <name>st0</name>
            <unit operation="create">
              <name>2</name>
              <family>
                <inet/>
              </family>
            </unit>
          </interface>
        </interfaces>
        <security>
          <ike>
            <gateway operation="create">
              <name>sd-srx100-24_testVPN</name>
              <dead-peer-detection>

```

```
<interval>10</interval>
<threshold>5</threshold>
</dead-peer-detection>
<external-interface>lo0.0</external-interface>
<ike-policy>sd-srx100-24_testVPN</ike-policy>
<nat-keepalive>5</nat-keepalive>
<address>10.205.119.24</address>
</gateway>
<policy operation="create">
  <name>sd-srx100-24_testVPN</name>
  <mode>main</mode>
  <pre-shared-key>
    <ascii-text>#####</ascii-text>
  </pre-shared-key>
  <proposal-set>standard</proposal-set>
</policy>
</ike>
<ipsec>
  <policy operation="create">
    <name>testVPN</name>
    <proposal-set>standard</proposal-set>
  </policy>
  <vpn operation="create">
    <name>sd-srx100-24_testVPN</name>
    <bind-interface>st0.2</bind-interface>
    <ike>
      <gateway>sd-srx100-24_testVPN</gateway>
      <idle-time>60</idle-time>
      <install-interval>1</install-interval>
      <ipsec-policy>testVPN</ipsec-policy>
      <no-anti-replay/>
    </ike>
  </vpn>
</ipsec>
<policies>
  <policy>
    <from-zone-name>trust</from-zone-name>
    <to-zone-name>untrust</to-zone-name>
    <policy operation="delete">
      <name>Device-Zone-1</name>
    </policy>
    <policy>
      <name>Device-Zone-2</name>
      <match>
        <source-address operation="delete">any</source-address>
        <source-address>ad2</source-address>
      </match>
      <then>
        <log>
          <session-init/>
        </log>
      </then>
    </policy>
    <policy operation="create">
      <name>aDevice-Zone-3</name>
      <match>
```

```

<application>any</application>
<destination-address>ad1</destination-address>
<source-address>any</source-address>
</match>
<then>
  <log>
    <session-close/>
  </log>
  <permit/>
</then>
</policy>
<policy name="Device-Zone-3" insert="before">
  <name>aDevice-Zone-3</name>
</policy>
<policy>
  <name>Device-Zone-3</name>
  <match>
    <application operation="delete">any</application>
    <application>apple-ichat</application>
    <source-address operation="delete">any</source-address>
    <source-address>ad2</source-address>
  </match>
  <then>
    <reject/>
  </then>
</policy>
</policies>
<zones>
  <security-zone>
    <name>trust</name>
    <address-book>
      <address operation="create">
        <name>ad2-mem0</name>
        <ip-prefix>2.3.3.3/32</ip-prefix>
      </address>
      <address operation="create">
        <name>ad2-mem1</name>
        <ip-prefix>2.3.3.4/30</ip-prefix>
      </address>
      <address operation="create">
        <name>ad2-mem2</name>
        <ip-prefix>2.3.3.8/29</ip-prefix>
      </address>
      <address operation="create">
        <name>ad2-mem3</name>
        <ip-prefix>2.3.3.16/28</ip-prefix>
      </address>
      <address operation="create">
        <name>ad2-mem4</name>
        <ip-prefix>2.3.3.32/29</ip-prefix>
      </address>
      <address operation="create">
        <name>ad2-mem5</name>
        <ip-prefix>2.3.3.40/30</ip-prefix>
      </address>
      <address operation="create">

```

```
<name>ad2-mem6</name>
<ip-prefix>2.3.3.44/32</ip-prefix>
</address>
<address-set operation="create">
  <name>ad2</name>
  <address>
    <name>ad2-mem0</name>
  </address>
  <address>
    <name>ad2-mem1</name>
  </address>
  <address>
    <name>ad2-mem2</name>
  </address>
  <address>
    <name>ad2-mem3</name>
  </address>
  <address>
    <name>ad2-mem4</name>
  </address>
  <address>
    <name>ad2-mem5</name>
  </address>
  <address>
    <name>ad2-mem6</name>
  </address>
</address-set>
</address-book>
</security-zone>
<security-zone>
  <name>untrust</name>
  <address-book> <address operation="create">
    <name>ad1</name>
    <ip-prefix>1.2.3.4/32</ip-prefix>
  </address>
</address-book>
</security-zone>
<security-zone>
  <name>VPN</name>
  <interfaces operation="create">
    <name>st0.2</name>
  </interfaces>
</security-zone>
</zones>
</security>
</configuration>
</edit-config>
```