Routing Web Service API Programming Reference

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Chapter 1: Getting started

Introduction

The Routing Web Services API Programming interface is one of the Web Services comprising the System Manager Web Service. The Routing Web Service provides programmatic access to all Routing administration data. The service provides access for adding, modifying, and deleting any of the Routing data that be modified using the GUI. You can also perform most of the interactions using the **System Manager** > **Routing** GUI. You can test the operation using the GUI. The Web Service is subject to the same business logic and validation enforced by the GUI and Import features.

Review the Routing export file formats to gain a deeper understanding of the content format described elsewhere in this document. The Web Service aligns with data representation of the Routing import/export format where possible. The main difference is URI resource naming conventions. The change was made to provide more meaningful URI names that have alignment with the GUI terminology.

Important:

Only use this API for provisioning changes. Do *not* use this API for dynamic, call processing applications, or real time modifications.

RESTful Based Web Service

The Web Service is based entirely on Representational State Transfer RESTful practices. RESTful Web Service is a programmatic API, and *NOT* a remote bulk import or export API as described in the *System Manager Web Service for User Management*. The GUI Import/Export features provide an optimized bulk interface. This API is very focused on a URI resource driven approach. It is not a hypermedia-based approach according to the HATEOAS school of REST, nor is it designed for live web-driven applications.

RESTful Best Practice Alignment

- Document by example. In general, make the API semantically straightforward and reduce complexity where possible.
- Stateless API.
- Support for HTTP GET/POST/PUT/DELETE method semantics for create, modify, delete, and query operations.

- HTTP Location headers are supported for unique entity creation only. Avoid the semantic complexity of Content-Location. Reply content will always contain "self" reference links for a more convenient URI reference not requiring HTTP Location header access.
- HTTP error code set aligns with HTTP return code semantics.
- Best practices recommend either Content-Type or embedding version in URL. Content-Type semantics are selected to effect client URL encoding when a new version of the API is released. There is backwards compatibility between versions.
- URIs always represent a resource.
- Nouns only in URIs. Plural nouns indicate a collection of resources. A unique element of a collection represents a key identifying a specific element of a collection:
  ```
  <entity>s/[id]
  ```
- Resource names in URI and content are lowercase. Atomic properties are camelCase as they are now in the Route import/export format.
- Allow for URI referencing between base-level resources.
- Incorporate self reference and return of resource URI references in content where appropriate for singleton and multiple results.
- Automatically return complete content representation in response on any add or update operation.
- Allow for customer control and viewing of metadata.
- Supports XML and JSON content.
- Add or updates operations return full entity content and self references to simplify multiple request interaction scenarios from a client
- Supports URL64 and simpler URL encoding, where URL encoding is required
- Timestamps, if any are exposed, are represented in ISO 8601

RESTful Best Practice Divergence

- For unique resource id’s, use internal RDBMS surrogate id’s. Using surrogate id's is not a best practice, but alternatives require unwarranted schema modifications . Therefore, clients must not store URI references persistently. **`Name`** lookup keys are supported as a URI reference alternative.
- POST/PUT full replacement content requirement for add or update is not reasonable with deep object graphs, large numbers of entity defaults within resource/sub-resource mappings.
  - Aligning for usability and interoperable semantics used by the import approach.
  - PATCH semantics for partial update can support through POST using matrix parameters. Consequently, HTTP PATCH is not supported.
- Client control of entity expansion in the first version of the Web Service is unavailable. Object graph mapping is hardwired, and it is currently in the code which is reused by Routing web service, import or export, and GUI features.

- Most RESTful interfaces support client caching. However, this API has minimal support. There is no performance gain if you choose to use client caching because server side caching is not enabled.
- Language, encoding, and localization are minimal, similar to the System Manager User and Routing import formats. UTF-8 is supported. There is no support for complex char set handling or localization in stored Routing data.

Web service development assumptions

Use of Web service interface assumes:

- Web Application development experience.
- Familiarity with Web services or service-based APIs.
- Knowledge of how to establish SSL/TLS connections and trust certificate stores.
- HTTP protocol and header browser-based interactions.
- Experience with the Routing Data Semantics.

The implementation is client-technology agnostic and focuses on ease of development and understanding. Examples and samples are simplistic script or browser-based interactions. More complex REST client needs are the responsibility of the client developer.

RESTful client development assumptions

There is no standard for a RESTful API description. URIs are informally represented in what is known as a "URI Template" syntax. There is no support for XML namespace use in client XML request content to:

- Keep maximum flexibility for backward compatibility.
- Prevent inadvertent compatibility issues by firing validating parser because of schema references.

Numerous JEE standards, RFCs, and ISO standards are used according to best REST semantics for HTTP header use. Since REST itself is not standards-driven, more attention is given to usage and interaction semantics.

This is a stateless API and only supports a synchronous request/reply model according to common HTTP web application practices. This API does not support long running requests, polling, or any sort of asynchronous handling. Only a single "first class" data entity can be added/updated/deleted within a single POST/PUT/DELETE request. HTTP request pipelining (support of multiple HTTP requests within a single POST) is not supported in the first release.

A single Routing primary data type can be added, updated, or deleted for a single HTTP request/response cycle. The underlying database transactional integrity mirrors the operation. Either the

call succeeds or nothing is modified on the target system. Clients should be designed around this behavior. If bulk handling volumes of updates with "best try" semantics are needed, then Routing Import/Export features should be used instead.

Clients should be designed for rapid, short response time interactions. Clients should take into consideration System Manager resource loading during client use. Client application resilience is a client side, not server side, responsibility.

Clients should also be aware that this API is a versioned interface to provide for future interoperability. The "v1" version has all the fundamental CRUD operations for basic query/delete operations. "v2" will add in more client content negotiation control, content customization,and metadata options. "v2" enhancements will be backwards compatible with "v1" to minimize any impacts on clients in production.

Clients are expected to perform the following:

- Create a SSL/TLS session.
- Handle HTTP basic authentication, and optionally handle session cookies for “Challenge Response” forms of basic authentication.
- Handle unexpected HTTP errors and TLS link errors gracefully.
- Handle occasional re-authentication requests from the server.
- Modify and parse HTTP headers.
- Handle URI encoding and, to a lesser extent, decoding.
- Handle URI matrix parameters for partial updates. As a work around, use the PUT operation for all updates If the client does not support matrix parameters completely.

Map internal data models with JSON or XML parsers and formatters.

First steps

Setup a Session Manager for testing

The following steps are recommended to set up a Session Manager for testing:

1. Install a test System Manager.
2. Do one of the following:
   - Export Routing data from an existing System Manager and import the data in test System Manager.
   - Use the Routing GUI to administer simple data.

Gaining REST API Familiarity using Browser Tools

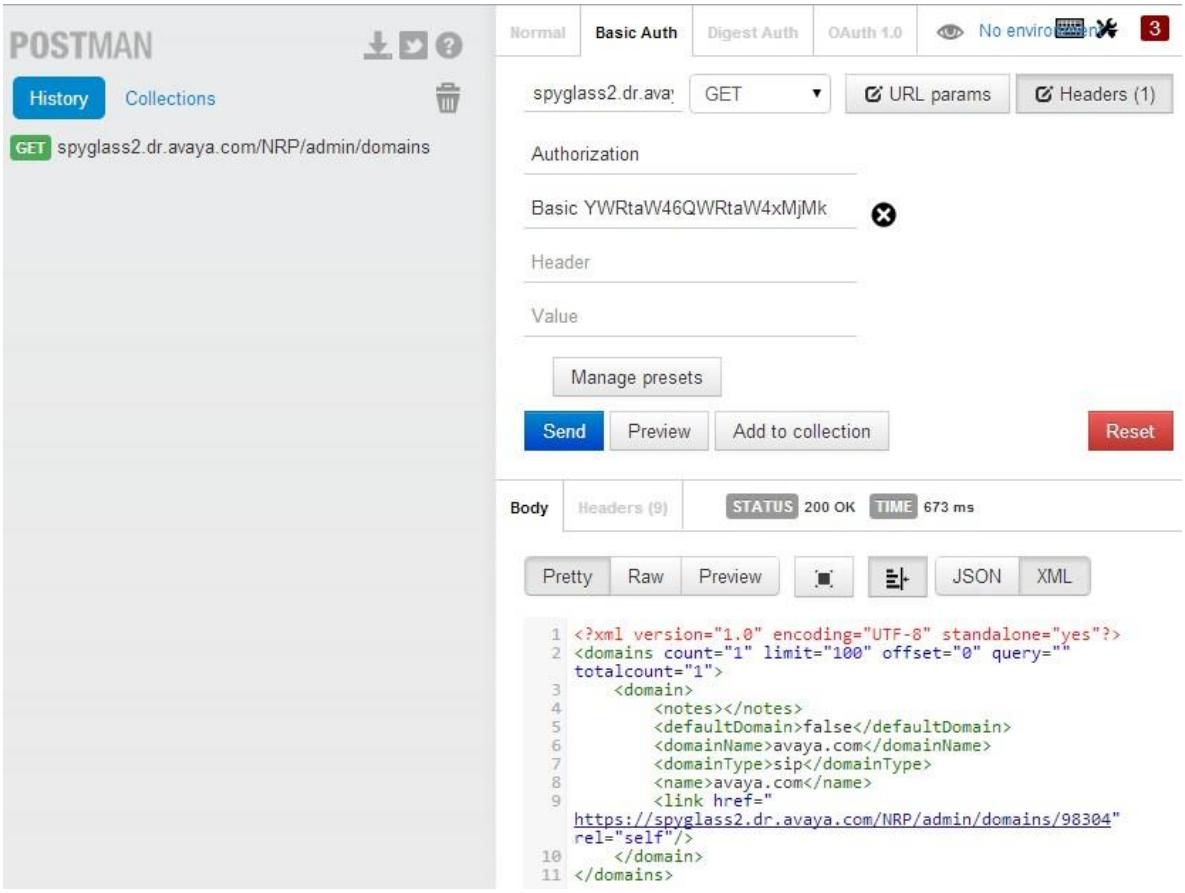
Procedure

1. Set up a test System Manager to work with.
2. The simplest way to understand the API is to start looking at content formats. Using your favorite browser, enter **`https://<hostname or IP>/NRP/admin/domains`**
3. Accept any warning about an insecure site if you have not yet established trust to the System Manager host.
4. If prompted, enter the administrator login and password.
5. You should see something similar to the following, assuming there are some domains administered.

```
<domains count="1" limit="100" offset="0" query=" " totalcount="1">
 <domain>
    <notes/>
    <defaultDomain>false</defaultDomain>
    <domainName>avaya.com</domainName>
    <domainType>sip</domainType>
    <name>avaya.com</name>
    <link href="https://spyglass2.dr.avaya.com/NRP/admin/domains/98304"
rel="self"/>
 </domain>
</domains>
```

6. Now that you have an authenticated session established, you can try any of the GET method examples in Resource API Examples on page 37
7. The next step is working with the Routing Web Service using a browser tool to gain more familiarity with the resource mappings and content representations. Some tools worth considering are Firefox "RestClient" and Chrome "Advanced Rest Client" , "Postman", and "Dev HTTP Client". For more information, see Connection Management, HTTP transport, and header control on page 16.

   These clients remember history, take care of authentication and cookie handling, provide hyperlink exploration of URIs, format print responses, handle JSON or XML, and have many other conveniences. Here is the previous example in Postman where "Basic Auth" has been preset.



SSL/TLS Trust Setup

System Manager uses self signed certificates by default. Because the Routing Web Service is client agnostic, it is not possible to provide specific detail on the SSL/TLS connection setup. There are a variety of mechanisms that depend on the REST client package, language, and operating system. The mechanisms are also difficult to configure for most Java clients. Scripting and Windows-based clients are usually a little simpler.

The initial setup for any client development requires trusting all CAs or importing the self signed CA from System Manager into a trust store. Do one of the following:

- Use **trust any CA sorts** of settings during development.
  - Many packages support this setting.
  - Java JSSE implementation requires some simple overwriting of socket factories, examples are plentiful on the web.
- Use a browser to connect to the System Manager.
  - Navigate to the site security information.

- Export and save as X.509 Certificate PEM format.
- Use tools appropriate to the certificate storage and access to load the stored certificate into the trust store, OpenSSL.

- For Windows clients when using Internet Explorer:
  - Click **Certificate Error** next to the address bar.
  - Click **View Certificates**.
  - Click **Install Certificate** and select the appropriate store for client access.
- Access **System Manager** > **Security** > **Certificates** > **Authority**
  - Select the download option for the format that is appropriate for the certificate store your client is using.
  - Or, if you are using a java client, you can select the "Download jks file" option to have a trust keystore created and downloaded. You are prompted for a key store password.

Java JKS trust certificate store

To handle System Manager self signed certificates, you can export the CA certificate and import into a trust store.

```
$ keytool -import -alias myhostname -file myhostname.crt -keystore sample.jks
Enter keystore password:  sample
Re-enter new password: sample
```

Answer **YES** when prompted whether the certificate is trusted.

What is in the SDK zip

The Web Service is designed to use without an SDK. This zip is provided as an aid only for development of java clients. It focuses on providing JAXB mappings between Routing data model classes and JSON or XML content. It assumes use of one of the Java REST client frameworks such as Oracle Jersey, JBoss RESTEasy, Apache CXF, or HTTPClient.

- nrp_jaxb.jar containing JAXB mappings for Java clients, see REST resource to JAXB entity mapping here on page 24.
- javadoc for the JAXB model classes
- Sample code works with latest Oracle Jersey client. The code depends on Jersey and JUnit.

  The nrp_jaxb.jar provides JAXB XML mappings and tests with built-in JAXB provider, and Jackson JSON mappers which can use JAXB annotations. See the Limitations on page 132 section concerning its use.

Working with the Java samples

The sample code in the SDK tests with Jersey 2.6. You must perform the following steps:

- Download Jersey.
- Download JUnit include the hamcrest jar into your selected development environment.
- Copy in nrp_jaxb.jar and the sample source from the SDK.
- Create CA trust store and configure into the test environment.

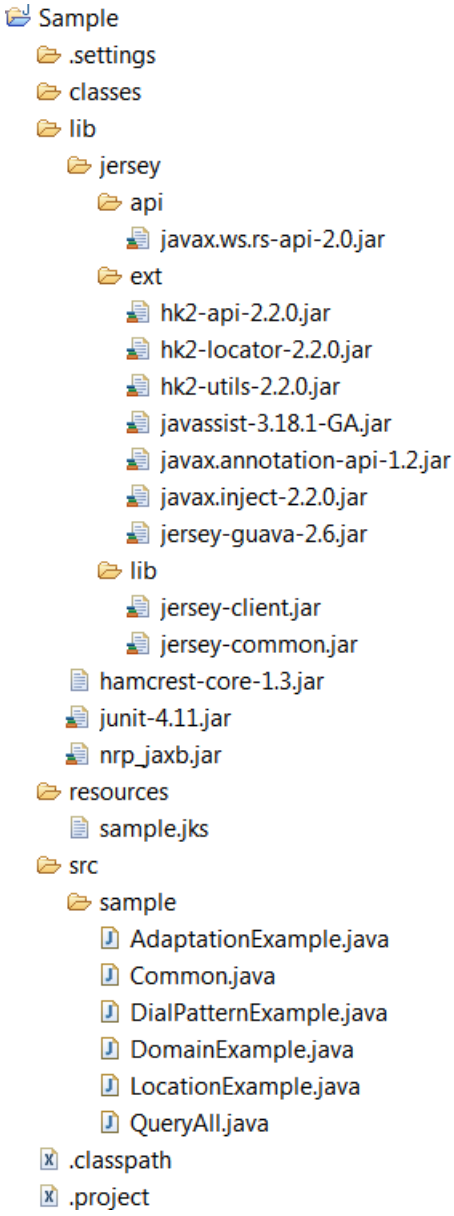
The sample **`/Common.java`** file needs the following 3 statics modified for your URI configuration and login credentials:

```
static public String URLBASE = "https://spyglass2.dr.avaya.com/NRP/admin"
static public String ADMINID = "admin"
static public String ADMINPASSWORD = "Admin123$"
```

The samples can run as JUnit tests.

The following is a simple Java project example layout in Eclipse:

- Minimum required Jersey jars. Copying in all jars from the Jersey distribution works fine.
- Trust store set up at `./resources/sample.jks` .
- Sample source unzipped from the SDK zip to the `./src` directory.


Sample
.settings
classes
lib
jersey
api
javax.ws.rs-api-2.0.jar
ext
hk2-api-2.2.0.jar
hk2-locator-2.2.0.jar
hk2-utils-2.2.0.jar
javassist-3.18.1-GA.jar
javax.annotation-api-1.2.jar
javax.inject-2.2.0.jar
jersey-guava-2.6.jar
lib
jersey-client.jar
jersey-common.jar
hamcrest-core-1.3.jar
junit-4.11.jar
nrp_jaxb.jar
resources
sample.jks
src
sample
AdaptationExample.java
Common.java
DialPatternExample.java
DomainExample.java
LocationExample.java
QueryAll.java
.classpath
.project

Chapter 2: Connection Management, HTTP transport, and header control

SSL/TLS Connection

The SSL/TLS connection setup. is not possible because of the variety of mechanisms employed depending on REST client package, language. The initial setup for client development requires:

- Either use *trust any CA* settings during development.
  - Many packages support this setting.
  - Java JSSE implementation requires some simple overwriting of socket factories, examples are plentiful on the web.
- Or use a browser to connect to the System Manager.
  - Navigate to the site security information.
  - Export and save as *X.509 Certificate PEM* format.
  - Use tools appropriate to certificate storage and access to load the stored certificate into the trust store, OpenSSL.
- Or access **System Manager** > **Security** > **Certificate Authority**
- Then select the download option for the format that is appropriate for the certificate store your client is using.

See SSL/TLS Trust Setup on page 12 for more information.

Authentication and Authorization

The web service supports HTTP basic authentication. The client base 64 encodes the *username:password* string and feeds into an Authorization HTTP header. Basic authentication through *username:password@* in the URL is not supported. The System ManagerQuantum Authenticator only checks the Authorization header.

```
Authorization: Basic QWxhZGluZzpvcGVuIHNlc2FtZQh1.
GET https://smgr.example.com/NRP/admin/...
```

An error authenticating with http response contains

```
WWW-Authenticate: Basic realm="admin"
Status Code: 401 Not Authorized
```

The client developer can select either *Direct Authentication* or *Challenge Authentication* for support . For *Direct Authentication*, the Authorization header is sent with every request.

If client supports *Challenge Authentication*, and the client receives a *401* error code then the request must be resubmitted with Authorization header.System Manager supports a session login with cookies. The session times out so the client must account for reauthentication anytime.

HTTP method support

Following are the supported HTTP method semantics that align with the CRUD model of data access and JAX-RS 1.1/2.0 annotations:

- *GET* Read-only query or fetch of single item for unique resource URI reference, query across resource collection for URI collection resource.
- *POST* Add, add with defaults, partial update using matrix parameters, add of sub resources, update of sub resources using matrix parameters.
- *PUT* Complete replacement update, complete replacement of sub resource collections.
- *DELETE* Delete resource and related sub resources, or delete sub resource collection item.

Sub-resource connotations:

```
@POST /domains -> CREATE a single domain
@GET /domains -> READ all domains
@PUT /domains -> UPDATE (REPLACE) Entire collection will be blocked and return an error
@DELETE /domains -> DELETE Entire resource collection deletes will be blocked and
return an error

@POST /sipentities/id/listenports -> Add a Listen Port resource at this URI if content
provided
@POST /sipentities/id/listenports/id;portnumber=5555 -> Modify value of existing Listen
Port
@GET /domains/id -> READ a single domain
@PUT /domains/id -> UPDATE via replacing the entire existing resource
@DELETE /domains/id -> DELETE a single domain resource and all sub resources
@DELETE /sipentities/id/listenports/id -> Delete one of the Listen Port collection
entries
```

POST/PUT semantic clarification

Use POST to add or update a resource. The update form is a resource URI with matrix parameters for the simple values (non-collection) to be updated on either the resource or a “owned” sub-resource. Owned sub-resources can only exist when associated with a top-level resource.

PUT requires full content used as COMPLETE replacement of a required, existing resource. PUT requires a URI, but completely replaces the current entity values. POST does not merge currently persisted values or sub resources.

On the related GUI screen, the ****required values*** marked fields are the minimum set of values required for a POST that is adding data, or a PUT method that is replacing an existing entry.

Initial add through POST

```
POST https://princeville-smgr.dr.avaya.com/NRP/admin/domains<domain>
<domain>
        <notes>some notes</notes>
        <defaultDomain>false</defaultDomain>
        <domainName>new.com</domainName>
        <domainType>sip</domainType>
        <name>new.com</name>
<link href= "https://princeville-smgr.dr.avaya.com/NRP/admin/domains/196610"
rel="self"/>
</domain>
```

Update of field using POST matrix parameters:

```
POST https://princeville-smgr.dr.avaya.com/NRP/admin/domains/196610;notes=new%20notes
```

Complete replacement of existing domain using PUT:

```
PUT https://princeville-smgr.dr.avaya.com/NRP/admin/domains/196610<domain>

<domain>
        <notes>complete replacement</notes>
        <name>new.com</name>
</domain>
```

OPTIONS support

An *HTTP OPTIONS* request is made against any valid URI to determine what the valid operations are against that resource. The valid methods are returned in the HTTP *Allow* header.

```
OPTIONS https://spyglass2.dr.avaya.com/NRP/admin/adaptations/262147/egressadaptations/
851975
```

The header response:

```
Server: Apache-Coyote/1.1
Allow: POST, DELETE, OPTIONS, PUT
Content-Length: 0
```

HEAD support

Although the underlying **jax-rs** provider supports *HEAD* requests, it is significant and do not reliably test response header properties. Therefore, it is not recommend making *HTTP HEAD* requests.

HTTP Message Body

POST and *PUT* methods return the complete representation of the added or modified resource on a successful Status Code. The application does not have filled in values. To reduce multiple HTTP requests the application must continue working with the resource or update its own cache.

HTTP Response Status Codes

Success Codes

Status Code	Reason
201 Created	The request is fulfilled and resulted in a new entity is created. Sub resource addition returns a 200 OK. Only base level resource addition receives a 201 Created.
200 OK	The request is succeeded. The information returned with the response depends on the request method used. GET: response contains an entity corresponding to the requested resource. POST/PUT: response contains an entity containing the result of the action.

Error Codes

Status Code	Reason
400 Bad Request	The request can not be understood by the server because of malformed syntax. For example, specifying "application/xml" media type the Content-Type header of an HTTP request and including a valid JSON content as request body.
401 Unauthorized	The request requires user authentication.
403 Forbidden	Operation is forbidden which can occur for a number of reasons such as no metadata, or the value violates the constraints of the metadata.
404 Not Found	The referenced resource does not exist.
405 Method Not Allowed	The request method is not supported for the resource. The response contains an Allow header which contains a list of valid methods.
406 Not Acceptable	The requested content type is not supported.
409 Conflict	Conflict with the associated metadata. Either the data does not match it or there is no metadata.
412 Precondition Failed	If-Modified: Etag value was not equivalent to current Etag value. Concurrent modification occured.
415 Unsupported Media Type	The request contains an unknown content type or unspecified content type. Check Accept or Content-Type headers.
500 Internal server error	Request can not be fulfilled because of internal resource issue or unexpected error.

HTTP Header Properties

Accept property API version control

Accept property is required for all requests and must indicate a **JSON** or **XML** media. The Routing Web Service are versioned. The first version is known as *v1*. Versioning is controlled by media type. The first version is:

```
Accept: application/vnd.avaya.nrp.admin-v1+xml

or

Accept: application/vnd.avaya.nrp.admin-v1+json
```

If no version information is provided the latest version is assumed.

```
Accept: application/xml

or

Accept: application/json
```

Content control through Content-Type, Accept

For Content control Accept and Content-Type properties are sent for all requests, even the content that do not take or return content like DELETE.

This is twofold:

- Error content always arrive in a response for any request made.
- Because of versioning implementation keying off media type, all requests need a media type even if the default is in use.

  JSONand **XML** content is supported. HTTP Content-Type header controls request content serializing. HTTP Accept request header controls response or error content format

```
Accept: application/xml

Content-Type: application/xml


Accept: application/json

Content-Type: application/json
```

GZIP content compression, Accept-Encoding, Content-Encoding

HTTP compression is supported. The server decodes *gzip* compressed content with the the following header in the request.

```
Content-Encoding: gzip
```

The server *gzip* compresses the response with the following header request.

```
Accept-Encoding: gzip
```

If the client needs an accept coding:

```
Content-Encoding: gzip, deflate
```

For proper handling the *deflate* directive is passed through when received in the **Accept-Encoding** header property value. Many HTTP browsers use this outdated and confusing directive.

Accept-Language, Accept-Encoding

Accept-Language and Accept-Encoding are ignored for character set negotiation. UTF-8 is used for content and response in the first release. No data localization is supported for Routing data. Therefore, support of client localization control is not needed.

Location

The Location header contains the URI of the added resource with the return of status code *201 Created*. The location is identical to the self reference link found in the response content.

```
Location: https://{fqdn}/NRP/admin/domains/1234
Status Code: 201 Created


{
      link: {
              href: "http://{fqdn}/NRP/admin/domains/1234"
              rel: "self"

          }
           name: "avaya.com"
          defaultDomain: false
          domainName: "avaya.com"
          domainType: "sip"
}
```

ETag header in responses

Entity Tags are an opaque identifier used in the HTTP world to support caching and optimistic locking. It is a way of versioning a particular resource. The ETag response header property is set for **GET**, **POST** , **PUT** responses. There are 2 HTTP operations where it is not returned as a response header:

- **GET** when used for queries
- **DELETE**

Poorly formatted ETag values are ignored. Use the ETag header response property returned from the server. There is no need to generate them and it circumvents the work already performed for the client by the server.

ETag, If-None-Match for limited client caching

Very limited client caching support is offered. It is recommended that the client not employ caching and treat the API as *Cache-Control: no-cache*. There is no server side performance enhancement since no server side entity cache is enabled and all requests go around the database .

However, if the client has a more complex interaction and requires stale cache notification for an entity then the application needs to keep track of the ETag response header property returned for GET, POST and PUT methods returning a single entity. When the Etag is received for this entity, it is added to the below HTTP request header property to get desired cache behavior.

```
GET NRP/admin/timeranges/name/24%2F7
If-None-Match: <entity Etag>

Cache-Control: must-revalidate
```

If the Etag value matches the current state of the entity, then the response will be *304 Not Modified*. If the Etag value does not match, then the entity will be put into the content and *200 OK* will be returned.

Note:

This is not considered an error. Therefore, no error content is returned in the response.

ETag, If-Match concurrent write detection

Optional optimistic locking is supported. An ETag response header property will be returned for all GET, POST and PUT methods. If the ETag value is then added to the request header and the Etag value does not represent the current entity state , then an error response is received.

```
POST NRP/admin/sipentities/1234/name=new%20name
If-Match: sipentities-1234-12
```

If header appears in the request and the Etag value put in If Match header does not match current Etag value of the entity then the response will be

```
412 Precondition Failed
```

Indicating that the entity has been modified since last client access. This provide an optimistic locking detection. Since this is an above *400 return code*, it is considered an error and will have error content returned.

Chapter 3: URI Resource referencing, format, and mapping

URI Templates

The base URI for this REST service is at:

```
https://<fqdn>/NRP/admin
```

Where **<fqdn>** is the host name or IP Address of the System Manager. Also,

```
https://<fqdn>/NRP/bulk
```

Reserved for future REST based access to bulk import and export features. NRP is the historical Network Routing Policy term from early Session Manager releases.

The basic URI for a resource is

```
https://<fqdn>/NRP/admin/<resource>s/<id>
```

Where **id** is a unique identifier. Resource collection is always be plural , and id is a unique surrogate id, which identifies a specific item in the collection.

```
https://<fqdn>/NRP/admin/sipentities
https://<fqdn>/NRP/admin/routingpolicies/32567
```

A sub resource is considered as complex type collection of complex types, collection of references to a complex type, or single reference to a complex type. Collections are plural, where as complex type references are not. Collections are all lowercase. A non collection reference are mixed cases as that is considered a complex attribute. URI for collection sub resources is similar and drop-down through the resource or entity graph:

```
https://<fqdn>/NRP/<resource>s/<id>/<sub  resource>s/<id>
```

Examples:

```
https://<fqdn>/NRP/admin/locations/35678/locationpatterns/2345
https://<fqdn>/NRP/admin/entitylinks/1234/sipentity2
https://<fqdn>/NRP/admin/sipentities/9999/listenports/6/sipdomain
```

Although the last sub resource reference to sipdomain is of type domain , it is not plural because a reference.

Query across items URI template appears as

```
https://<fqdn>/NRP/admin/<resource>[s|ies]?<query options>
```

Resource Naming and Routing Resource Mapping

Links have a **JAXB** representation of RsLink class and are typed by the RsLinkType.

For the resources, the GUI to REST Web Service to JAXB to Import format mappings are as follows:

GUI Terminology	Resource	Sub resources	Resource references	JAXB Classes	Import XML element, sub elements	Note
Adaptation	adaptations	egressadaptations, ingressadaptations		Adaptation, Adaptations, EgressAdaptation, IngressAdaptation	AdaptationFullTO, EgressadaptationFullTO, IngressadaptationFullTO	
Dial Pattern	dialpatterns		routingpolicies, location, sipdomain	DialPattern, DialPatterns	DigitmapFullTO, RoutingoriginationBriefTO, SipdomainBriefTO, RoutingpolicyBriefTO	Import references routingpolicies as name, location as name. Special "null" as "--ALL--" case handling.
Domain	domains			Domain, Domains	SipdomainFullTO	
Entity Link	entitylinks		sipentity	EntityLink, EntityLinks	EntitylinkFullTO	Import references SIP Entity as a property name.

Table continues…

GUI Terminology	Resource	Sub resources	Resource references	JAXB Classes	Import XML element, sub elements	Note
Location	locations	locationpatterns	sipentity	Location, Locations, LocationPattern	RoutingoriginationFullTO, RoutingoriginationpatternFullTO	
Origination Dial Pattern Sets	originationdialpatternsets originationdialpatterns			DigitmapOriginationSet, DigitmapOrigination	DigitmapOriginationSetFullTO, DigitmapOriginationPatternBriefTO, DigitmapOriginationPatternFullTO	
Regular Expression	regularexpressions		routingpolicies	RegularExpression, RegularExpressions	RegexpmapFullTO, RoutingpolicyBriefTO	Import references routingpolicies as name.
Routing Policy	routingpolicies	timeofdays	sipentity, timerange, dialpatterns, regularexpressions	RoutingPolicy, RoutingPolicies	RoutingpolicyFullTO, TimeofdayFullTO	Import references SIP Entity as a property name. Time of day references timerange through name.
Sip Entity	sipentities	listenports, sipresponses	adaptation, location, outboundproxy, primaryBandwidthManager, secondaryBandwidthManager, entitylinks, sipdomain	SipEntity, SipEntities	SipentityFullTO, ListenportFullTO, SipmonresponsehandlingFullTO	
Time Range	timeranges			TimeRang, TimeRanges	TimerangeFullTO	

Resource identification

A critical aspect of REST API design is permanent, unique identification of a resource.

```
https://<fqdn>/NRP/<resource>[s|ies]/<id>
```

The current Routing DB schema does not have logical, user friendly identifier nor any id that is used for unique resource identification in the API.

It is not appropriate to add such entries throughout the schema, and then populate for programmatic API late in the product maturity cycle. If System Manager Web Service becomes stronger over time, then it can use the other primary key values.

The worst solution is exposing DB surrogate ids, although the ids can occasionally change over time. Various DB restore techniques and, schema upgrades do rekeying.

As such, clients make all attempts at not persisting the id of any of these values. Instead clients look up techniques based on pertinent, primary key values .

This helps in testing and diagnosing of field problems with direct database correlation.

URL encoding

http://en.wikipedia.org/wiki/Percent-encoding is a reference of the significant characters in a URI. If any of those characters appear within a query or matrix parameter value, they must be URI encoded. For the most part, the left side *name* values are URL safe and do not need encoding.

For example, if an equal sign, =, appears in the module parameter settings for an adaptation module then it must be encoded as *%3d* . So, if you want to update the module parameters *ocsrcd=dr.avaya.com odstd=ny.avaya.com* for an adaptation using Cisco Adapter, then the resulting expression appears as shown:

```
POST https://<fqdn>/NRP/admin/adaptations/
819221;adaptationmodule=CiscoAdapter%20ocsrd%3ddr.avaya.com%20odstd%3dny.avaya.com
```

Content format

There is no ordering dependency request data element appearance. Similarly, there is no consistent ordering of response data within the single entity.

XML resource result wrapping and unwrapped sub resource arrays

XML Query results are wrapped with a plural collection element

```
<locations count="5" limit="100" offset="0" query="" totalcount="5"
<location>
...
</locations>
```

But sub resource collections are not wrapped, and present arrays as per **<locationpattern>**.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<location>
          <notes>and some notes for 1234</notes>
          <name>westminster1234</name>
          <cac_audio_alarm_latency>5</cac_audio_alarm_latency>
          <cac_audio_alarm_threshold_percent>80
          </cac_audio_alarm_threshold_percent>
          <AverageBandwidthPerCall>80</AverageBandwidthPerCall>
          <AverageBandwidthPerCallUnitOfMeasurement>Kbit/sec
          </AverageBandwidthPerCallUnitOfMeasurement>
          <cac_can_audio_steal_from_video>true</cac_can_audio_steal_from_video>
          <cac_max_bwidth_video_interloc>2000</cac_max_bwidth_video_interloc>
          <cac_max_bwidth_video_intraloc>2000</cac_max_bwidth_video_intraloc>
          <cac_min_acceptable_bwidth_video>64</cac_min_acceptable_bwidth_video>
          <ManagedBandwidthUnitOfMeasurement>Kbit/sec
          </ManagedBandwidthUnitOfMeasurement>
          <cac_video_alarm_latency>5</cac_video_alarm_latency>
          <cac_video_alarm_threshold_percent>80
          </cac_video_alarm_threshold_percent>
          <dpt_in_survivable_mode>false</dpt_in_survivable_mode>
          <TimeToLiveInSec>3600</TimeToLiveInSec>
          <link href="http://<fqdn/NRP/admin/locations/1234" rel="self" />
          <locationpattern>
                         <notes>next pattern notes</notes>
                         <ipaddresspattern>192.169.xxx.xxx</ipaddresspattern>
                         <link
                              href="http://<fqdn/NRP/admin/locations/1234/
locationpatterns/64848"
                               rel="self" />
            </locationpattern>
            <locationpattern>
                       <notes>next pattern notes</notes>
                       <ipaddresspattern>192.169.xxx.xxx</ipaddresspattern>
                       <link
                            href="http://<fqdn/NRP/admin/locations/1234/locationpatterns/
64848"
                            rel="self" />
             </locationpattern>
</location>
```

JSON resource result and subresource arrays

```
{
   "location":[
      {
         "link":{
            "rel":"self",
            "href":"https://<fqdn>/NRP/admin/locations/524289"
},
         "locationpattern":[
            {
               "link":{
                  "rel":"self",
                   "href":"https://<fqdn>/NRP/admin/locations/524289/locationpatterns/
360448"
 },
               "ipaddresspattern":"192.140.21.*",
               "notes":"A note"
            }
         ],
         "name":"westminster",
```

```
          "ManagedBandwidthUnitOfMeasurement":"Kbit/sec",
          "AverageBandwidthPerCall":80,
          "AverageBandwidthPerCallUnitOfMeasurement":"Kbit/sec",
          "TimeToLiveInSec":3600,
          "cac_min_acceptable_bwidth_video":64,
          "cac_can_audio_steal_from_video":true,
          "cac_max_bwidth_video_intraloc":"2000",
          "cac_max_bwidth_video_interloc":"2000",
          "cac_audio_alarm_threshold_percent":"80",
          "cac_video_alarm_threshold_percent":"80",
          "cac_audio_alarm_latency":5,
          "cac_video_alarm_latency":5,
          "dpt_in_survivable_mode":false
       },
     ...
     ],
      "offset":0,
      "query":"",
      "totalcount":5,
      "count":5,
      "limit":100
}
```

Null value handling

In response, content fields with null cannot transfer. Specifically, if the XML element or JSON field does not appear in a content. The value is null on the server. However, matrix parameters are a special case. For matrix parameters: If the value for a parameter is not set then, value is equivalent to setting it to null if the attribute supports null.

```
POST https://<fqdn>/NRP/admin/domains/<id>;notes
```

Sets the notes to empty.

There is also a difference between setting an element to null versus setting it to the default value. For inbound requests, such as POST or PUT , if the element is in the request payload and is empty, then the value is set to null or empty string depending on the type. If the element is omitted from the request payload, then it is set to the default value.

URI Link representation

Links represent as **<link>** element in content and RsLink, RsEntityLink, and RsLinkType classes in JAXB. A link has the following attributes:

- href: Fully qualified URI link
- hrefName: Unique name of referred component if ref = *reference* and the URI refers to resource. Sub-resources do not have a hrefName. dialpattern and resources do not support a name value. A `pattern/min/max/location/domain` value appears for *dialpattern* and a *pattern value* appears for *regular expression*.
- rel: Type of link. These are no IANA types as per hypermedia linking.
  - Self: All entities in response contains a self link.
  - Reference: Refers to a resource or a sub resource. If a resource and that resource has a name element then a hrefName appears in the link.

- Referred.

- title: If entity has a notes field, then the title value holds this in response content

hrefName is considered an alternate href attribute. It is used similar as a href in that it can be URI encoded and used in a reference URI:

```
<sipentity>
    ...
  <adaptation>
     <link href="http://<fqdn/NRP/admin/adaptation/32756"
       hrefName="Cisco Adaptation"
       rel="reference"/>
     <link>
   </adaptation>
  </sipentity>

GET .../nrp/admin/adaptation/name/Cisco%20Adaptation
```

Responses include self referencing **<link>** elements for all resource and sub resource entities.**rel = self** is only supported on response content.

RsEntityLink is a special JAXB wrapper around RsLink used where one resource refers to another base level resource.

```
<location>
     <link href="http://<fqdn/NRP/admin/locations/1234" hrefName="Location Name"
rel="self" />
     <locationpattern>
          <notes>next pattern notes</notes>
          <ipaddresspattern>192.169.xxx.xxx</ipaddresspattern>
          <link href="http://<fqdn/NRP/admin/locations/1234/locationpatterns/64848"
              rel="self" />
     </locationpattern>
...

{
   "link":{
     "rel":"self",
     "href":"https://<fqdn/NRP/admin/locations/622593"
  },
  "locationpattern":[
     {
        "link":{
           "rel":"self",
           "href":"https://>fqdn/NRP/admin/locations/622593/locationpatterns/327681"
         },
         "ipaddresspattern":"192.170.21.*",
         "notes":"A note"
     }
   ],
}
...
```

A reference link mentioned below is applicable in request and response content.

```
<entitylink>
    ...
    <sipentity1>
        <link href="<fqdn>/NRP/admin/sipentities/32831" hrefName="testscrush"
rel="reference" title="" />
    </sipentity1>
    <sipentity2>
        <link href="<fqdn>/NRP/admin/sipentities/32811" hrefName="testCM2"
```

```
rel="reference" title="" />
     </sipentity2>
  </entitylink>
```

Collections, Containment, and Referencing

Most object graphs in NRP are of the containment variety. For example, locations contain multiple **locationpatterns**. If the location is deleted, then any contained **locationpatterns** also get deleted. When the parent of a sub resource is deleted, all resources contained by the parent get deleted.

The content portion of SIP entity displayed below is a collection of **listenports**, which reference a domain. When the SIP entity is deleted, no domain is deleted. The contained **listenports** are deleted, but the domains they reference are not deleted. Any **<link rel=reference**.....**/>** is not deleted because the object graph does not contain that entity, just the reference to the entity.

```
<sipentity>
    <link href="http://<fqdn/NRP/admin/sipentities/1" rel="self" />
    <listenport>
          <portnumber>5060</portnumber>
          <endpoint>true</endpoint>
          <transportprotocol>TCP</transportprotocol>
          <link href="http://<fqdn/NRP/admin/sipentities/1/listenports/1"
                rel="self" />
          <sipdomain>
              <link href="http://<fqdn/NRP/admin/domains/1234" rel="reference" />
           </sipdomain>
      </listenport>
          ...
```

List of link references

Only POST equivalent to GUI Add button and DELETE equivalent to GUI Remove button are supported. The list a sub resource. The content for POST is a link

```
POST https://<fqdn>/NRP/admin/regularexpressions/35768/routingpolicies


<link href="https://<fqdn/NRP/admin/routingpolicies/12345"
</link>

  or the short name format

<link hrefName="Routing Policy A"
</link>
```

The delete URI follows the usual form

```
DELETE https://<fqdn>/NRP/admin/regularexpressoins/35768/routingpolicies/12345
```

Single entity response and query result response

A wrapped XML or JSON result with multiple entities returns when:

- An unqualified resource collection reference: `.../NRP/admin/domains`.
- Or a query string appears on a `URI .../NRP/admin/domains?name=avaya.com`.

Unique key lookups

A single entity response returns for a GET based on unique URI based on surrogate id lookup and selected values. For example,

```
.../NRP/admin/adaptations/32567
.../NRP/admin/sipentities/name/Really%20important%entity
.../NRP/admin/dialpatterns/12/3/3/Denver/avaya.com
```

The first item is a typical unique resource URI. The second and third are equivalent to a database unique key based fetch.

Resource	Unique value	URI template	Note
domain, location, adaptation, sipentity, entitylink, timerange, routingpolicy	name	GET https://{fqdn}/NRP/admin/{resource}s/name/{name}	For domain, "name" is the actual domain reference. Neither dialpattern nor regularexpression have a name value.
location	correlation	GET https://{fqdn}/NRP/admin/location/correlation/{correlationid}	
dialpattern	pattern, min, max,location,domain	GEThttps://{fqdn}/NRP/admin/dialpattern/{pattern}/{min}/{max}/{location}/{domain}	"location" identifies a specific location or "ALL" to indicate all locations. "domain" identifies a specific SIP domain or "ALL" to indicate all domains.
regularexpression	pattern	GET https://{fqdn}/NRP/admin/regularexpression/pattern/{pattern}	

Query request and responses

All query parameters are differentiated from the URI by the **?** character. The general format is a *identifier=value* name-value pair. Each pair is separated by a **&**. The following command is treated as a query because the entire collection is being fetched:

```
GET https://<fqdn>/NRP/admin/routingpolicies
```

The general form of a query URL appears as

```
https://<fqdn>/NRP/admin/{resource}?<query options>
```

All queries are wrapped with the same element or structure tag as the collection name.

The response wrapping element contains attributes with metadata for the query that was made.

```
<domains query="?name=xxxx&limit=100&offset=200" count="100" offset="100"
totalcount="1234"
<domain>
  ....
 </domain>
 <domain>
  ...
 </domain>
</domains>
```

Accepted query parameters define each resource as follows, with the exception of *offset* and *limit*. The Optional query parameters *offset* and *limit* are available to all resources.

Resource	Optional query parameters
domain	name
location	name
adaptation	name
sipentity	name
entitylink	name
timerange	name
routingpolicy	name
dialpattern	pattern, min, max, location, domain
regularexpression	pattern

Query filters

The percent sign, **%**, is used as a wildcard character in query strings. The percent sign is encoded as `%25` and matches any string of zero or more characters.

The following returns all domains that begin with the letter **a**:

```
GET https://<fqdn>/NRP/admin/domains?name=a%25
```

The following returns all domains that end with the letter **a**:

```
GET https://<fqdn>/NRP/admin/domains?name=%25a
```

The following returns with domains that contain the letter **a**:

```
GET https://<fqdn>/NRP/admin/domains?name=%25a
```

Name values must be URL encoded. The following are legitimate characters in names:

```
--__+=()[][];;/,.\"//
```

Error content format

When there is error in the content, a 400 or greater HTTP status code is returned. The media type is based on the request header .

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>

<error>
    <status>404</status>
   <statusMessage>404 Not Found</statusMessage>
   <message>The specified id, 12345, does not exist</message>
   <additionalStatus>0</additionalStatus>
       <additionalMessage>None really for not found case, used for 500 messages though</
additionalMessage>
    <requestMethod>GET</requestMethod>
   <requestURI>/domains/12345</requestURI>
   <date>Fri Nov 22 18:09:50 MST 2013</date>
</error>


{
status: 404
statusMessage: "404 Not Found"
message: "The specified id, 12345, does not exist"
additionalStatus: 0
additionalMessage: "None really for not found case, used for 500 messages though"
requestMethod: "GET"
requestURI: "/domains/12345"
date: "Fri Nov 22 18:10:24 MST 2013"
}
```

The *message, additionalStatus* , and *additionalMessage* are optionally populated based on HTTP response error code. *message* is populates a user friendly message. Unexpected system errors can populate *additionalMessage* with stack traces, so there can be a fair amount of text.

Chapter 4: Resource API Examples

Query support

The Routing Web Service API provides for filtering and simple ordering of query results. The API supports multiple query parameters and limited query parameter value matching.

Query scaling, &limit query parameter

The query limit is 1000 maximum for full response format. The query limit is 10000 for brief response format. Use the `limit` attribute to limit the number of entities that are returned in the query response. The `&brief=true` is added as a query parameter. *This does not mean* that your configuration and HTTP clients or proxies can support this kind of volume. The limit is a server side limit to reduce server side impacts on resources. The recommendation is to use clients that can support GZIP payload compression if expecting larger HTTP response bodies.

Query filter parameters

You can add multiple query parameters to the URI using the format `?param=value`. You can add subsequent parameters using `param2=value2`, `param3=value3`, and so on using the **&** as a separator. For example: `?param=value&param2=value2&param3=value3`.

Multiple query parameters are logically “and’d” together. Remember that query parameter values may require Uuencoding.

The query values for an entity parallels that of GUI values that can be filtered in the Routing summary tables. Usually, the query parameter name is the element name found in the response format. The following table provides synonyms for consistency with pre-7.0 query support.

Entity	Parameters supported
domains	domainType name domainName notes
locations	name notes
adaptations	adaptationmodule name notes egressuriparameters
sipentities	name notes fqdnoripaddr entitytype
entitylinks	connectionPolicy name transportProtocol sipentity2 sipentity1 listenPortEntity1 listenPortEntity2 serviceState notes
timeranges	startTime includesTuesday includesMonday name includesFriday notes includesThursday stopTime includesWednesday
routingpolicies	sipentity name retries notes disabled

Table continues…

Entity	Parameters supported
dialpatterns	notes name (synonym for digitpattern) digitpattern mindigits (or min) maxdigits (or max) location treatasemergency sipdomain (or domain). **sipdomain** and **location** support the special value "ALL" when the pattern applies to all locations or domains.
regularexpressions	pattern rankorder deny name (synonym for pattern) notes

Query value string expression matching

Use **%** as a wildcard matcher for strings. **%**:

- Matches any character and one or more characters.
- Can appear multiple times within a query parameter value
- Can appear at the beginning or end of string matching.
- Is handled very similarly to the SQL **like** expression matching.

Escaping **%** by using **%%** is not supported. Your REST client may require proper Uuencoding for using the wildcard character. **%25** represents **%**.

```
GET https://{fqdn}/NRP/admin/entitylinks?entity1=testCM%25&brief=true
```

Query parameter reference handling

Selected query parameters are references to other entities. Querying entitylinks can filter on the sipentities which are referenced by an entitylink

Entity	Entity reference and type
entitylinks	entity1, entity2 refer to a sipentity
routingpolicies	sipentity refers to a sipentity
dialpatterns	sipdomain or domain refers to a domain location refers to a location Both of these parameters support the special "ALL" value to query dialpatterns supporting ALL domains or locations.

Remember that a link reference has name and id values.

```
<entitylinks count="1" limit="1000" offset="0" query="?name=rsentitylink"
totalcount="1">
    <entitylink>
...
        <sipentity1>
            <link href="https://{fqdn}/NRP/admin/sipentities/24001"
                hrefName="dummyASM1" rel="reference" title=""/>
        </sipentity1>
        <sipentity2>
            <link href="https://{fqdn}/NRP/admin/sipentities/12229"
                hrefName="testCM1" rel="reference" title=""/>
        </sipentity2>
        <link href="https://{fqdn}/NRP/admin/entitylinks/25" rel="self"/>
    </entitylink>
</entitylinks>
```

The query reference value can either be a numeric id value such as "24001" above for "dummayASM1" or a reference name or pattern to match. Some examples for entitylinks queries are:

```
GET https://{fqdn}/NRP/admin/entitylinks?entity1=12229
GET https://{fqdn}/NRP/admin/entitylinks?entity2=testCM1
GET https://{fqdn}/NRP/admin/entitylinks?entity1=%25CM%25
```

Sorted Results, &sort query parameter

All results are sorted to provide a consistent query response ordering. A single "`?sort=value`" parameter is supported. By default, the results are sorted on the surrogate "id" field. Sort order is always ascending. The value for the sort parameter is a query parameter found in above query parameter table. For example:

```
https://{fqdn}/NRP/admin/entitylinks?sipentity1=Entity%20name%201?
sipentity2=Entity%20name%2?sort=sipentity1
```

Brief Query Result Format, &brief query parameter

The query parameter and value "?brief=true" can be added on any HTTP GET based query. The links returned will be "reference" type as distinguished from "self" references in the full content format. This allows retrieval of name, notes, and title information for evaluation without the overhead of the entire entity in the response.

```
GET https://augusta2.dr.avaya.com/NRP/admin/domains?name=rs%brief=true

<?xml version="1.0" encoding="UTF-8"?>
<domains count="3" limit="1000" offset="0" query="?name=rs%&brief=true" totalcount="3">
    <domain>
        <link href="https://augusta2.dr.avaya.com/NRP/admin/domains/1048576"
hrefName="rs1.avaya.com"
            rel="reference" title="these are notes"/>
    </domain>
    <domain>
        <link href="https://augusta2.dr.avaya.com/NRP/admin/domains/1048577"
hrefName="rs2.avaya.com"
            rel="reference" title="these are notes"/>
    </domain>
    <domain>
        <link href="https://augusta2.dr.avaya.com/NRP/admin/domains/1048578"
hrefName="rs3.avaya.com"
            rel="reference" title="these are notes"/>
    </domain>
</domains>
```

Brief format JAXB mapping

If a Java JAXB client is in use, the following classes can be used by the client to unmarshal the query result references. All the classes have a "List<RsEntityLink> getLinks()" operation. Note that the existing result classes (Domains, Locations, ...) will also work but will marshal invalid default entity values into the underlying Domain, Location, etc.

Entity Type	JAXB mapping class
domains	Domainlinks
locations	LocationLinks

Table continues…

Entity Type	JAXB mapping class
adaptations	AdaptationLinks
sipentities	SipEntityLinks
entitylinks	EntityLinkLinks
timeranges	TimeRangeLinks
routingpolicies	RoutingPolicyLinks
dialpatterns	DialPatternLinks
regularexpression	RegularExpressionLinks

Required Request Headers

Content-Type, Accept and Authorization headers must be sent for all requests.

`Content-Type:`	`application/xml or application/json`
`Accept:`	`application/xml or application/json`
`Authorization:`	`Basic Base64-encoded username:password`

Domains

Get a single domain by ID or name

Request	`GET https://{fqdn}/NRP/admin/domains/32567` `GET https://{fqdn}/NRP/admin/domains/name/avaya.com`
Request Content	None.
Response Content	See Domain response. on page 38

Add a domain

Request	`POST https://{fqdn}/NRP/admin/domains`
Request Content	See Domain request. on page 38
Response Content	See Domain response. on page 38

Modify specified domain fields

Request	`POST https://{fqdn}/NRP/admin/domains/32567;notes=new%20domain`
Request Content	None.
Response	See Domain response. on page 38

Replace an existing domain by ID or name

Request	`PUT https://{fqdn}/NRP/admin/domains/32567` `PUT https://{fqdn}/NRP/admin/domains/name/company.com`
Request Content	See Domain request. on page 38
Response	See Domain response. on page 38

Retrieve all domains

Request	`GET https://{fqdn}/NRP/admin/domains`
Request Content	None.
Optional Query Parameters	name, offset, limit
Response	See Domain query response. on page 39

Delete a domain by ID or name

Request	`DELETE https://{fqdn}/NRP/admin/domains/32567` `DELETE https://{fqdn}/NRP/admin/domains/name/avaya.com`
Request Content	None.
Response	None.

Domain request content

XML

```
<domain>
   <notes>new domain</notes>
    <name>avaya.com</name>
</domain>
```

JSON

```
{
    "name":"avaya.com",
    "notes":"new domain"
}
```

Domain response content

XML

```
<domain>
    <notes>new domain</notes>
    <defaultDomain>false</defaultDomain>
    <domainName>avaya.com</domainName>
    <domainType>sip</domainType>
    <name>avaya.com</name>
    <link href="https://{fqdn}/NRP/admin/domains/32567" rel="self"/>
</domain>
```

JSON

Table continues…

```
{
  "link": {
    "href": "https://{fqdn}/NRP/admin/domains/32567",
    "rel": "self"
  },
  "name": "avaya.com",
  "defaultDomain": false,
  "domainName": "avaya.com",
  "domainType": "sip",
  "notes": "new domain"
}
```

Domain query response

XML

```
<domains count="3" limit="100" offset="0" query="" totalcount="3">
<domain>
        <notes/>
        <defaultDomain>false</defaultDomain>
        <domainName>domain1.com</domainName>
        <domainType>sip</domainType>
        <name>domain1.com</name>
        <link href="https://{fqdn}/NRP/admin/domains/4" rel="self"/>
    </domain>
    <domain>
        <notes/>
        <defaultDomain>false</defaultDomain>
        <domainName>domain2.com</domainName>
        <domainType>sip</domainType>
        <name>domain2.com</name>
        <link href="https://{fqdn}/NRP/admin/domains/5" rel="self"/>
    </domain>

...
</domains>
```

JSON

Table continues…

```
{
  "domain": [
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/domains/4",
        "rel": "self"
      },
      "name": "domain1.com",
      "defaultDomain": false,
      "domainName": "domain1.com",
      "domainType": "sip",
      "notes": ""
    },
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/domains/5",
        "rel": "self"
      },
      "name": "domain2.com",
      "defaultDomain": false,
      "domainName": "domain2.com",
      "domainType": "sip",
      "notes": ""
    },

...


  ],
  "offset": 0,
  "query": "",
  "count": 3,
  "limit": 100,
  "totalcount": 3
}
```


Locations

Get a single location by ID or name

Request	`GET https://{fqdn}/NRP/admin/locations/32768`
	
	`GET https://{fqdn}/NRP/admin/locations/name/Westminster GET https://{fqdn}/NRP/admin/locations/correlation/1234`

Request Content	None.
Response Content	See Location response. on page 43

Add a location

Request	`POST https://{fqdn}/NRP/admin/locations`
Request Content	See Location request. on page 42
Response Content	See Location response. on page 43

Modify specified location fields

Request	`POST https://{fqdn}/NRP/admin/locations/32768;notes=new%20location`
Request Content	None.
Response	See Location response. on page 43

Replace an existing location by ID or name

Request	`PUT https://{fqdn}/NRP/admin/locations/32768` `PUT https://{fqdn}/NRP/admin/locations/name/Westminster`
Request Content	See Location request. on page 42
Response	See Location response. on page 43

Retrieve all locations

Request	`GET https://{fqdn}/NRP/admin/locations`
Request Content	None.
Optional Query Parameters	name, offset, limit
Response	See Location query response. on page 44

Add a location pattern to an existing location

Request	`POST https://{fqdn}/NRP/admin/locations/32768/locationpatterns`

Request Content	`<locationpattern>`
	`  <notes>some notes</notes>`
	`  <ipaddresspattern>192.168.101.*</ipaddresspattern>`
	`</locationpattern>`

Response	See Location response. on page 43

Remove a single location pattern from an existing location

Request	`DELETE https://{fqdn}/NRP/admin/locations/32768/locationpatterns/294912`
Request Content	None.
Response	See Location response. on page 43

Modify specified location pattern fields

Request	`POST https://{fqdn}/NRP/admin/locations/32768/locationpatterns/294912;ipaddresspattern=101.101.101.101;notes=update%20notes`
Request Content	None.
Response	See Location response. on page 43

Replace an existing location pattern

Request	`PUT https://{fqdn}/NRP/admin/locations/32768/locationpatterns/294912`

Request Content	`<locationpattern>`
	`  <notes>some notes</notes>`
	`  <ipaddresspattern>192.168.101.*</ipaddresspattern>`
	`</locationpattern>`

Response	See Location response. on page 43

Update CM SIP entity associated with Dial Plan Transparency for a location

Request	`POST https://{fqdn}/NRP/admin/locations/32768/dptCMSipentity`

Request Content	`<link hrefName="testCM1"/>`
	`or`
	`<link href= "https://{fqdn}/NRP/admin/sipentities/4"/>`

Response	See Location response. on page 43

Remove a primary bandwidth manager from an existing SIP entity

Request	`DELETE https://{fqdn}/NRP/admin /sipentities/32768/ primaryBandwidthManager`
Request Content	None.
Response	See SIP entity response.

Location request content

XML

```
<location>
    <notes/>
    <name>Westminster</name>
    <cac audio alarm latency>5</cac audio alarm latency>
    <cac audio alarm threshold percent>80</cac audio alarm threshold percent>
<AverageBandwidthPerCall>80</AverageBandwidthPerCall>
    <AverageBandwidthPerCallUnitOfMeasurement>Kbit/sec</
AverageBandwidthPerCallUnitOfMeasurement>
    <cac can audio steal from video>true</cac can audio steal from video>
    <cac max bwidth video interloc>2000</cac max bwidth video interloc>
    <cac max bwidth video intraloc>2000</cac max bwidth video intraloc>
    <cac min acceptable bwidth video>64</cac min acceptable bwidth video>
    <ManagedBandwidthUnitOfMeasurement>Kbit/sec</ManagedBandwidthUnitOfMeasurement>
    <cac video alarm latency>5</cac video alarm latency>
    <cac video alarm threshold percent>80</cac video alarm threshold percent>
    <dpt in survivable mode>false</dpt in survivable mode>
    <TimeToLiveInSec>3600</TimeToLiveInSec>
    <locationpattern>
        <notes>some notes</notes>
        <ipaddresspattern>192.168.101.*</ipaddresspattern>
    </locationpattern>
</location>
```

JSON

Table continues…

```
{
  "locationpattern": [
    {
      "ipaddresspattern": "192.168.101.*",
      "notes": "some notes"
    }
  ],
  "name": "Westminster",
  "ManagedBandwidthUnitOfMeasurement": "Kbit/sec",
  "AverageBandwidthPerCall": 80,
  "AverageBandwidthPerCallUnitOfMeasurement": "Kbit/sec",
  "TimeToLiveInSec": 3600,
  "cac_min_acceptable_bwidth_video": 64,
  "cac_can_audio_steal_from_video": true,
  "cac_max_bwidth_video_intraloc": "2000",
  "cac_max_bwidth_video_interloc": "2000",
  "cac_audio_alarm_threshold_percent": "80",
  "cac_video_alarm_threshold_percent": "80",
  "cac_audio_alarm_latency": 5,
  "cac_video_alarm_latency": 5,
  "dpt_in_survivable_mode": false,
  "notes": ""
}
```

Location response content

XML

```
<location>
    <notes/>
    <name>Westminster</name>
    <cac audio alarm latency>5</cac audio alarm latency>
    <cac audio alarm threshold percent>80</cac audio alarm threshold percent>
    <AverageBandwidthPerCall>80</AverageBandwidthPerCall>
    <AverageBandwidthPerCallUnitOfMeasurement>Kbit/sec</
AverageBandwidthPerCallUnitOfMeasurement>
    <cac can audio steal from video>true</cac can audio steal from video>
    <cac max bwidth video interloc>2000</cac max bwidth video interloc>
    <cac max bwidth video intraloc>2000</cac max bwidth video intraloc>
    <cac min acceptable bwidth video>64</cac min acceptable bwidth video>
    <ManagedBandwidthUnitOfMeasurement>Kbit/sec</ManagedBandwidthUnitOfMeasurement>
    <cac video alarm latency>5</cac video alarm latency>
    <cac video alarm threshold percent>80</cac video alarm threshold percent>
    <dpt in survivable mode>false</dpt in survivable mode>
    <TimeToLiveInSec>3600</TimeToLiveInSec>
    <link href="https://{fqdn}/NRP/admin/locations/32768" rel="self"/>
    <locationpattern>
        <notes>some notes</notes>
        <ipaddresspattern>192.168.101.*</ipaddresspattern>
        <link href="https://{fqdn}/NRP/admin/locations/32768/locationpatterns/294912"
rel="self"/>
    </locationpattern>
</location>
```

JSON

Table continues…

```
{   "link": {
 "href": "https://{fqdn}/NRP/admin/locations/32768",
   "rel": "self"   },
  "locationpattern": [
  {
 "link": {
    "href": "https://{fqdn}/NRP/admin/locations/32768/locationpatterns/294912",
"rel": "self"
    },
    "ipaddresspattern": "192.168.101.*",
   "notes": "some notes"
 }
 ],
 "name": "Westminster",
 "ManagedBandwidthUnitOfMeasurement": "Kbit/sec",
  "AverageBandwidthPerCall": 80,
  "AverageBandwidthPerCallUnitOfMeasurement": "Kbit/sec",
   "TimeToLiveInSec": 3600,
 "cac_min_acceptable_bwidth_video": 64,
   "cac_can_audio_steal_from_video": true,
  "cac_max_bwidth_video_intraloc": "2000",
  "cac_max_bwidth_video_interloc": "2000",
  "cac_audio_alarm_threshold_percent": "80",
   "cac_video_alarm_threshold_percent": "80",
\  "cac_audio_alarm_latency": 5,
   "cac_video_alarm_latency": 5,
 "dpt_in_survivable_mode": false,   "notes": ""
}
```

Location query response

XML

Table continues…

```
<locations count="3" limit="100" offset="0" query="" totalcount="3">
    <location>
    <notes/>
    <name>Basking Ridge</name>
    <cac_audio_alarm_latency>5</cac_audio_alarm_latency>
    <cac_audio_alarm_threshold_percent>80</cac_audio_alarm_threshold_percent>
        <AverageBandwidthPerCall>80</AverageBandwidthPerCall>
        <AverageBandwidthPerCallUnitOfMeasurement>Kbit/sec</
AverageBandwidthPerCallUnitOfMeasurement>
        <cac_can_audio_steal_from_video>true</cac_can_audio_steal_from_video>
        <cac_max_bwidth_video_interloc>2000</cac_max_bwidth_video_interloc>
        <cac_max_bwidth_video_intraloc>10000</cac_max_bwidth_video_intraloc>
        <cac_min_acceptable_bwidth_video>64</cac_min_acceptable_bwidth_video>
        <cac_normal_bwidth_video>10000</cac_normal_bwidth_video>
        <ManagedBandwidth>10000</ManagedBandwidth>
        <ManagedBandwidthUnitOfMeasurement>Kbit/sec</ManagedBandwidthUnitOfMeasurement>
        <cac_video_alarm_latency>5</cac_video_alarm_latency>
        <cac_video_alarm_threshold_percent>80</cac_video_alarm_threshold_percent>
        <dpt_in_survivable_mode>false</dpt_in_survivable_mode>
        <TimeToLiveInSec>3600</TimeToLiveInSec>
        <link href="https://{fqdn}/NRP/admin/locations/32769" rel="self"/>
        <locationpattern>
<notes/>
            <ipaddresspattern>1.1.1.1</ipaddresspattern>
            <link href="https://{fqdn}/NRP/admin/locations/32769/locationpatterns/
65538" rel="self"/>
        </locationpattern>
    </location>

...
</locations>
```

JSON

Table continues…

```
{
  "location": [
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/locations/32769",
        "rel": "self"
      },
      "locationpattern": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/locations/32769/locationpatterns/65538",
            "rel": "self"
          },
          "ipaddresspattern": "1.1.1.1",
          "notes": ""
        }
      ],
      "name": "Basking Ridge",
      "ManagedBandwidth": 10000,
      "ManagedBandwidthUnitOfMeasurement": "Kbit/sec",
      "AverageBandwidthPerCall": 80,
      "AverageBandwidthPerCallUnitOfMeasurement": "Kbit/sec",
      "TimeToLiveInSec": 3600,
      "cac_normal_bwidth_video": 10000,
      "cac_min_acceptable_bwidth_video": 64,
      "cac_can_audio_steal_from_video": true,
      "cac_max_bwidth_video_intraloc": "10000",
      "cac_max_bwidth_video_interloc": "2000",
      "cac_audio_alarm_threshold_percent": "80",
      "cac_video_alarm_threshold_percent": "80",
      "cac_audio_alarm_latency": 5,
      "cac_video_alarm_latency": 5,
      "dpt_in_survivable_mode": false,
      "notes": ""
    },
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/locations/32770",
        "rel": "self"
      },
      "locationpattern": [],
      "name": "Highlands Ranch",
      "ManagedBandwidth": 10000,
      "ManagedBandwidthUnitOfMeasurement": "Kbit/sec",
      "AverageBandwidthPerCall": 80,
      "AverageBandwidthPerCallUnitOfMeasurement": "Kbit/sec",
      "TimeToLiveInSec": 3600,
      "cac_normal_bwidth_video": 10000,
      "cac_min_acceptable_bwidth_video": 64,
      "cac_can_audio_steal_from_video": true,
      "cac_max_bwidth_video_intraloc": "10000",
      "cac_max_bwidth_video_interloc": "2000",
      "cac_audio_alarm_threshold_percent": "80",
      "cac_video_alarm_threshold_percent": "80",
      "cac_audio_alarm_latency": 5,
      "cac_video_alarm_latency": 5,
      "dpt_in_survivable_mode": false,
      "notes": ""
    },
...
  ],
  "offset": 0,
  "query": "",
```

```
  "count": 4,
  "limit": 100,
  "totalcount": 4
}
```

Adaptations

Get a single adaptation by ID or name

Request	`GET https://{fqdn}/NRP/admin/adaptations/32768` `GET https://{fqdn}/NRP/admin/adaptations/name/test%20adaptation`
Request Content	None.
Response Content	See Adaptation response. on page 50

Add an adaptation

Request	`POST https://{fqdn}/NRP/admin/adaptations`
Request Content	See Adaptation request. on page 49
Response Content	See Adaptation response. on page 50

Modify specified adaptation fields

Request	`POST https://{fqdn}/NRP/admin/adaptations/` `32768;notes=adding%20notes;egressuriparameters=param`
Request Content	None.
Response	See Adaptation response. on page 50

Replace an existing adaptation by ID or name

Request	`PUT https://{fqdn}/NRP/admin/adaptations/32768` `PUT https://{fqdn}/NRP/admin/adaptations/name/test%20adaptation`
Request Content	See Adaptation request. on page 49
Response	See Adaptation response. on page 50

Retrieve all adaptations

Request	`GET https://{fqdn}/NRP/admin/adaptations`
Request Content	None.
Optional Query Parameters	name, offset, limit
Response	See Adaptation query response. on page 52

Add an ingress pattern to an existing adaptation

Request	`POST https://{fqdn}/NRP/admin/adaptations/32768/ingressadaptations`

Request Content	`<ingressadaptation>`
	`  <notes/>`
	`  <deletedigits>0</deletedigits>`
	`  <insertdigits>011</insertdigits>`
	`  <matchingpattern>123</matchingpattern>`
	`  <maxdigits>36</maxdigits>`
	`  <mindigits>3</mindigits>`
	`  <addressToModify>both</addressToModify>`
	`</ingressadaptation>`

Response	See Adaptation response. on page 50

Remove a single ingress pattern from an existing adaptation

Request	`DELETE https://{fqdn}/NRP/admin/adaptations/32768/ingressadaptations/294912`
Request Content	None.
Response	See Adaptation response. on page 50

Modify specified ingress pattern fields

Request	`POST https://{fqdn}/NRP/admin/adaptations/32768/ingressadaptations/294912;maxdigits=25;insertdigits=333;deletedigits=1`
Request Content	None.
Response	See Adaptation response. on page 50

Replace an existing ingress pattern

Request	`PUT https://{fqdn}/NRP/admin/adaptations/32768/ingressadaptations/294912`

Request Content	`<ingressadaptation>`
	`  <notes/>`
	`  <deletedigits>0</deletedigits>`
	`  <insertdigits>011</insertdigits>`
	`  <matchingpattern>123</matchingpattern>`
	`  <maxdigits>36</maxdigits>`
	`  <mindigits>3</mindigits>`
	`  <addressToModify>both</addressToModify>`
	`</ingressadaptation>`

Response	See Adaptation response. on page 50

Add an egress pattern to an existing adaptation

Request	`POST https://{fqdn}/NRP/admin/adaptations/32768/egressadaptations`

Table continues…

Request Content	<egressadaptation> <notes/> <deletedigits>0</deletedigits> <insertdigits>011</insertdigits> <matchingpattern>123</matchingpattern> <maxdigits>36</maxdigits> <mindigits>3</mindigits> <addressToModify>both</addressToModify> </egressadaptation>
Response	See Adaptation response. on page 50

Remove a single egress pattern from an existing adaptation

Request	DELETE https://{fqdn}/NRP/admin/adaptations/32768/egressadaptations/294912
Request Content	None.
Response	See Adaptation response. on page 50

Modify specified egress pattern fields

Request	POST https://{fqdn}/NRP/admin/adaptations/32768/egressadaptations/294912;maxdigits=25;insertdigits=333;deletedigits=1
Request Content	None.
Response	See Adaptation response. on page 50

Replace an existing egress pattern

Request	PUT https://{fqdn}/NRP/admin/adaptations/32768/egressadaptations/294912
Request Content	<egressadaptation> <notes/> <deletedigits>0</deletedigits> <insertdigits>011</insertdigits> <matchingpattern>123</matchingpattern> <maxdigits>36</maxdigits> <mindigits>3</mindigits> <addressToModify>both</addressToModify> </egressadaptation>
Response	See Adaptation response. on page 50

Adaptation request content

XML

Table continues…

```
<adaptation>
    <notes>notes</notes>
    <adaptationmodule>CiscoAdapter</adaptationmodule>
    <egressuriparameters/>
    <name>test adaptation</name>
    <egressadaptation>
        <notes/>
        <deletedigits>0</deletedigits>
        <insertdigits>9</insertdigits>
        <matchingpattern>456</matchingpattern>
        <maxdigits>36</maxdigits>
        <mindigits>3</mindigits>
        <addressToModify>both</addressToModify>
    </egressadaptation>
    <ingressadaptation>
        <notes/>
        <deletedigits>0</deletedigits>
        <insertdigits>011</insertdigits>
        <matchingpattern>123</matchingpattern>
        <maxdigits>36</maxdigits>
        <mindigits>3</mindigits>
        <addressToModify>both</addressToModify>
    </ingressadaptation>
</adaptation>
```

JSON

```
{
      "egressadaptation": [
        {
          "addressToModify": "both",
          "mindigits": 3,
          "maxdigits": 36,
          "matchingpattern": "456",
          "deletedigits": 0,
          "insertdigits": "9",
          "notes": ""
        }
      ],
      "ingressadaptation": [
        {
          "addressToModify": "both",
          "mindigits": 3,
          "maxdigits": 36,
          "matchingpattern": "123",
          "deletedigits": 0,
          "insertdigits": "011",
          "notes": ""
        }
      ],
      "name": "test adaptation",
      "adaptationmodule": "CiscoAdapter",
      "egressuriparameters": "",
      "notes": "notes"
    }
```

Adaptation response content

XML

Table continues…

```
<adaptation>
    <notes>notes</notes>
    <adaptationmodule>CiscoAdapter</adaptationmodule>
    <egressuriparameters/>
    <name>test adaptation</name>
    <egressadaptation>
        <notes/>
        <deletedigits>0</deletedigits>
        <insertdigits>9</insertdigits>
        <matchingpattern>456</matchingpattern>
        <maxdigits>36</maxdigits>
        <mindigits>3</mindigits>
        <addressToModify>both</addressToModify>
        <link href="https://{fqdn}/NRP/admin/adaptations/360455/egressadaptations/
131084" rel="self"/>
    </egressadaptation>
    <ingressadaptation>
        <notes/>
        <deletedigits>0</deletedigits>
        <insertdigits>011</insertdigits>
        <matchingpattern>123</matchingpattern>
        <maxdigits>36</maxdigits>
        <mindigits>3</mindigits>
        <addressToModify>both</addressToModify>
        <link href="https://{fqdn}/NRP/admin/adaptations/360455/ingressadaptations/
163852" rel="self"/>
    </ingressadaptation>
    <link href="https://{fqdn}/NRP/admin/adaptations/360455" rel="self"/>
</adaptation>
```

JSON

Table continues…

```
{
      "link": {
        "href": "https://{fqdn}/NRP/admin/adaptations/360455",
        "rel": "self"
      },
      "egressadaptation": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/adaptations/360455/egressadaptations/
131084",
            "rel": "self"
          },
          "addressToModify": "both",
          "mindigits": 3,
          "maxdigits": 36,
          "matchingpattern": "456",
          "deletedigits": 0,
          "insertdigits": "9",
          "notes": ""
        }
      ],
      "ingressadaptation": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/adaptations/360455/ingressadaptations/
163852",
            "rel": "self"
          },
          "addressToModify": "both",
          "mindigits": 3,
          "maxdigits": 36,
          "matchingpattern": "123",
          "deletedigits": 0,
          "insertdigits": "011",
          "notes": ""
        }
      ],
      "name": "test adaptation",
      "adaptationmodule": "CiscoAdapter",
      "egressuriparameters": "",
      "notes": "notes"
    }
```


Adaptation query response

XML

Table continues…

```
<adaptations count="2" limit="100" offset="0" query="" totalcount="2">
    <adaptation>
        <notes/>
        <adaptationmodule>DigitConversionAdapter  name=value</adaptationmodule>
        <egressuriparameters/>
        <name>adaptation</name>
        <egressadaptation>
            <notes/>
            <deletedigits>0</deletedigits>
            <insertdigits>9</insertdigits>
            <matchingpattern>456</matchingpattern>
            <maxdigits>36</maxdigits>
            <mindigits>3</mindigits>
            <addressToModify>both</addressToModify>
            <link href="https://{fqdn}/NRP/admin/adaptations/360449/egressadaptations/
131073" rel="self"/>
        </egressadaptation>
        <ingressadaptation>
            <notes/>
            <deletedigits>0</deletedigits>
            <insertdigits>011</insertdigits>
            <matchingpattern>123</matchingpattern>
            <maxdigits>36</maxdigits>
            <mindigits>3</mindigits>
            <addressToModify>both</addressToModify>
            <link href="https://{fqdn}/NRP/admin/adaptations/360449/ingressadaptations/
163841" rel="self"/>
        </ingressadaptation>
        <link  href="https://{fqdn}/NRP/admin/adaptations/360449"  rel="self"/>
    </adaptation>
    <adaptation>
        <notes>notes</notes>
        <adaptationmodule>CiscoAdapter</adaptationmodule>
        <egressuriparameters/>
        <name>test adaptation</name>
        <egressadaptation>
            <notes/>
            <deletedigits>0</deletedigits>
            <insertdigits>9</insertdigits>
            <matchingpattern>456</matchingpattern>
            <maxdigits>36</maxdigits>
            <mindigits>3</mindigits>
            <addressToModify>both</addressToModify>
            <link href="https://{fqdn}/NRP/admin/adaptations/360455/egressadaptations/
131084" rel="self"/>
        </egressadaptation>
        <ingressadaptation>
            <notes/>
            <deletedigits>0</deletedigits>
            <insertdigits>011</insertdigits>
            <matchingpattern>123</matchingpattern>
            <maxdigits>36</maxdigits>
            <mindigits>3</mindigits>
            <addressToModify>both</addressToModify>
            <link href="https://{fqdn}/NRP/admin/adaptations/360455/ingressadaptations/
163852" rel="self"/>
        </ingressadaptation>
        <link  href="https://{fqdn}/NRP/admin/adaptations/360455"  rel="self"/>
    </adaptation>
</adaptations>
```

JSON

Table continues…

```
{
  "adaptation": [
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/adaptations/360449",
        "rel": "self"
      },
      "egressadaptation": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/adaptations/360449/egressadaptations/
131073",
            "rel": "self"
          },
          "addressToModify": "both",
          "mindigits": 3,
          "maxdigits": 36,
          "matchingpattern": "456",
          "deletedigits": 0,
          "insertdigits": "9",
          "notes": ""
        }
      ],
      "ingressadaptation": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/adaptations/360449/ingressadaptations/
163841",
            "rel": "self"
          },
          "addressToModify": "both",
          "mindigits": 3,
          "maxdigits": 36,
          "matchingpattern": "123",
          "deletedigits": 0,
          "insertdigits": "011",
          "notes": ""
        }
      ],
      "name": "adaptation",
      "adaptationmodule": "DigitConversionAdapter name=value",
      "egressuriparameters": "",
      "notes": ""
    },
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/adaptations/360455",
        "rel": "self"
      },
      "egressadaptation": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/adaptations/360455/egressadaptations/
131084",
            "rel": "self"
          },
          "addressToModify": "both",
          "mindigits": 3,
          "maxdigits": 36,
          "matchingpattern": "456",
          "deletedigits": 0,
          "insertdigits": "9",
          "notes": ""
```

```
        }
      ],
      "ingressadaptation": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/adaptations/360455/ingressadaptations/
163852",
            "rel": "self"
          },
          "addressToModify": "both",
          "mindigits": 3,
          "maxdigits": 36,
          "matchingpattern": "123",
          "deletedigits": 0,
          "insertdigits": "011",
          "notes": ""
        }
      ],
      "name": "test adaptation",
      "adaptationmodule": "CiscoAdapter",
      "egressuriparameters": "",
      "notes": "notes"
    }
  ],
  "offset": 0,
  "query": "",
  "count": 2,
  "limit": 100,
  "totalcount": 2
}
```


SIP Entities

Get a single SIP entity by ID or name

Request	`GET https://{fqdn}/NRP/admin/sipentities/32768` `GET https://{fqdn}/NRP/admin/sipentities/name/dummyASM1`
Request Content	None.
Response Content	See SIP entity response. on page 63
IPv6 Supported Response Content	See IPv6 SIP entity response content on page 63

Add a SIP entity

Request	`POST https://{fqdn}/NRP/admin/sipentities`
Request Content	See SIP entity request. on page 60
Response Content	See SIP entity response. on page 63

Add IPv6 SIP entity

Request	`POST https://{fqdn}/NRP/admin/sipentities`

Table continues…

Request Content	See IPv6 SIP entity request on page 72
Response Content	See IPv6 SIP entity response on page 72

Modify specified SIP entity fields

Request	`POST https://{fqdn}/NRP/admin/sipentities/32768;notes=adding%20notes;fqdnoripaddr =2.2.2.2;timezoneName=America%2FChicago`
Request Content	None.
Response	See SIP entity response. on page 63

Modify specified IPv6 SIP entity fields

Request	`POST https://{fqdn}/NRP/admin/sipentities/196619;notes=adding%20notes;fqdnoripaddr =2:2:2::2;timezoneName=America%2FChicago`
Request Content	None.
Response	See IPv6 modify SIP entity response on page 73

Replace an existing SIP entity by ID or name

Request	`PUT https://{fqdn}/NRP/admin/sipentities/32768` `PUT https://{fqdn}/NRP/admin/sipentities/name/dummyASM1`
Request Content	See SIP entity request. on page 60
Response	See SIP entity response. on page 63

Retrieve all SIP entities

Request	`GET https://{fqdn}/NRP/admin/sipentities`
Request Content	None.
Optional Query Parameters	name, offset, limit
Response	See SIP entity query response. on page 67

Add a listen port to an existing SIP entity

Request	`POST https://{fqdn}/NRP/admin/sipentities/32768/listenports`

Table continues…

Request Content	<listenport> <notes/> <portnumber>5061</portnumber> <endpoint>true</endpoint> <transportprotocol>TLS</transportprotocol> <sipdomain> <link hrefName="domain1.com"/> or <link href="https://{fqdn}/NRP/admin/domains/4"/> </sipdomain> </listenport>
Response	See SIP entity response. on page 63

Add a IPv6 listen port to an existing SIP entity

Request	POST https://{fqdn}/NRP/admin/sipentities/32768/listenports
Request Content	<listenport> <notes/> <portnumber>5061</portnumber> <transportprotocol>TLS</transportprotocol> <endpoint>false</endpoint> <ipaddr family>IPv6</ipaddr family> <sipdomain> <link hrefName="domain1.com"/> or <link href="https://{fqdn}/NRP/admin/domains/4"/> </sipdomain> </listenport>
Response	See IPv6 SIP entity response on page 74

Remove a single listen port from an existing SIP entity

Request	DELETE https://{fqdn}/NRP/admin/sipentities/32768/listenports/294912
Request Content	None.
Response	See SIP entity response. on page 63

Modify specified listen port fields

Request	POST https://{fqdn}/NRP/admin/sipentities/32768/listenports/294912;portnumber=5555;notes=some%20notes;
Request Content	None.
Response	See SIP entity response. on page 63

Replace an existing listen port

Request	PUT https://{fqdn}/NRP/admin/sipentities/32768/listenports/294912
Request Content	<listenport> <notes/> <portnumber>5061</portnumber> <endpoint>true</endpoint> <transportprotocol>TLS</transportprotocol> <sipdomain> <link hrefName="domain1.com"/> or <link href="https://{fqdn}/NRP/admin/domains/4"/> </sipdomain> </listenport>
Response	See SIP entity response. on page 63

Modify SIP domain associated with an existing listen port

Request	`POST https://{fqdn}/NRP/admin/sipentities/32768/listenports/294912/sipdomain`

Request Content	`<link hrefName="domain1.com"/>`
	` or`
	`<link href= "https://{fqdn}/NRP/admin/domains/4"/>`

Response	See SIP entity response. on page 63

Add a SIP response code to an existing SIP entity

Request	`POST https://{fqdn}/NRP/admin/sipentities/32768/sipresponses`

Request Content	`<sipresponse>`
	`  <notes/>`
	`  <response>111</response>`
	`  <type>up</type>`
	`</sipresponse>`

Response	See SIP entity response. on page 63

Remove a single SIP response code from an existing SIP entity

Request	`DELETE https://{fqdn}/NRP/admin/sipentities/32768/sipresponses/294912`
Request Content	None.
Response	See SIP entity response. on page 63

Modify specified SIP response code fields

Request	`POST https://{fqdn}/NRP/admin/sipentities/32768/sipresponses/294912;maxdigits=25;type=down;response=345`
Request Content	None.
Response	See SIP entity response. on page 63

Replace an existing SIP response code

Request	`PUT https://{fqdn}/NRP/admin/sipentities/32768/sipresponses/294912`

Request Content	`<sipresponse>`
	`  <notes/>`
	`  <response>111</response>`
	`  <type>up</type>`
	`</sipresponse>`

Response	See SIP entity response. on page 63

Add an adaptation to an existing SIP entity

Request	`POST https://{fqdn}/NRP/admin/sipentities/32768/adaptation`

Request Content	`<link hrefName="adaptation"/>`
	`or`
	` <link href= "https://{fqdn}/NRP/admin/adaptations/4"/>`

Response	See SIP entity response. on page 63

Remove an adaptation from an existing SIP entity

Request	`DELETE https://{fqdn}/NRP/admin/sipentities/32768/adaptation`
Request Content	None.
Response	See SIP entity response. on page 63

Add multiple adaptation reference to an existing SIP entity

You can add multiple adaptations to a SIP entity only if the **Enable Regular Expression Adaptation** field on the Global Settings page is enabled.

Request	`POST https://{fqdn}/NRP/admin/sipentities/32768/adaptationbases`

Request Content	`<adaptation>`
	`<adaptation_order/>1</adaptation_order>`
	`<link hrefName="regex adaptation 1" />`
	or
	`<link href="https://{fqdn}/NRP/admin/adaptationsbases/4" />`
	`</adaptation>`

Response	See SIP Entity Response with multiple adaptations>

Delete multiple adaptation reference to an existing SIP entity

Request	`DELETE https://{fqdn}/NRP/admin/sipentities/32768/adaptationbases/75`
Request Content	None
Response	See SIP Entity Response with multiple adaptations

Add a location to an existing SIP entity

Request	`POST https://{fqdn}/NRP/admin/sipentities/32768/location`

Request Content	`<link hrefName="Westminster"/>`
	or
	`<link href= "https://{fqdn}/NRP/admin/locations/4"/>`

Response	See SIP entity response. on page 63

Remove a location from an existing SIP entity

Request	`DELETE https://{fqdn}/NRP/admin/sipentities/32768/location`
Request Content	None.
Response	See SIP entity response. on page 63

Add an outbound proxy to an existing SIP entity

Request	`POST https://{fqdn}/NRP/admin/sipentities/32768/outboundproxy`

Request Content	`<link hrefName="dummyASM2"/>`
	or
	`<link href= "https://{fqdn}/NRP/admin/sipentities/4"/>`

Response	See SIP entity response. on page 63

Remove an outbound proxy from an existing SIP entity

Request	`DELETE https://{fqdn}/NRP/admin/sipentities/32768/outboundproxy`
Request Content	None.
Response	See SIP entity response. on page 63

Add a primary bandwidth manager to an existing SIP entity

Request	`POST https://{fqdn}/NRP/admin/sipentities/32768/primaryBandwidthManager`
Request Content	`<link hrefName="dummyASM2"/>` or `<link href= "https://{fqdn}/NRP/admin/sipentities/4"/>`
Response	See SIP entity response. on page 63

Remove a primary bandwidth manager from an existing SIP entity

Request	`DELETE https://{fqdn}/NRP/admin/sipentities/32768/primaryBandwidthManager`
Request Content	None.
Response	See SIP entity response. on page 63

Add a secondary bandwidth manager to an existing SIP entity

Request	`POST https://{fqdn}/NRP/admin/sipentities/32768/secondaryBandwidthManager`
Request Content	`<link hrefName="dummyASM3"/>` or `<link href= "https://{fqdn}/NRP/admin/sipentities/5"/>`
Response	See SIP entity response. on page 63

Remove a secondary bandwidth manager from an existing SIP entity

Request	`DELETE https://{fqdn}/NRP/admin/sipentities/32768/secondaryBandwidthManager`
Request Content	None.
Response	See SIP entity response. on page 63

SIP entity request content

XML

Table continues…

```
<sipentity>
    <notes></notes>
    <entitytype>ASM</entitytype>
    <fqdnoripaddr>192.168.101.101</fqdnoripaddr>
    <ipaddrFamilyType>IPv4</ipaddrFamilyType>
    <ipaddrTolerant>true</ipaddrTolerant>
    <name>ASM</name>
    <sip_fqdn>tmest.avaya.com</sip_fqdn>
    <cac_capable>false</cac_capable>
    <cdrSetting>none</cdrSetting>
    <credentialname></credentialname>
    <do_monitoring>use-instance</do_monitoring>
    <loop_detect_interval_msec>200</loop_detect_interval_msec>
    <loop_detect_mode>on</loop_detect_mode>
    <loop_detect_threshold>5</loop_detect_threshold>
    <monitor_okresponses>1</monitor_okresponses>
    <monitor_proactive_secs>900</monitor_proactive_secs>
    <monitor_reactive_secs>120</monitor_reactive_secs>
    <monitor_retries>1</monitor_retries>
    <securable>false</securable>
    <timer_bf_secs>4</timer_bf_secs>
    <timezoneName>America/Fortaleza</timezoneName>
    <userfc3263>false</userfc3263>
    <link href="https://augusta1.dr.avaya.com/NRP/admin/sipentities/32771" rel="self"/>
    <listenport>
        <notes></notes>
        <portnumber>5061</portnumber>
        <endpoint>false</endpoint>
        <ipaddrFamily>IPv4</ipaddrFamily>
        <transportprotocol>TLS</transportprotocol>
        <sipdomain>
            <link href="https://augusta1.dr.avaya.com/NRP/admin/domains/1"
```

```
hrefName="avaya.com" rel="reference" title=""/>

        </sipdomain>

        <link href="https://augusta1.dr.avaya.com/NRP/admin/sipentities/32771/
listenports/32768" rel="self"/>

    </listenport>

    <sipresponse>

        <notes></notes>

        <response>513</response>

        <type>up</type>

        <link href="https://augusta1.dr.avaya.com/NRP/admin/sipentities/32771/
sipresponses/2" rel="self"/>

    </sipresponse>

</sipentity>
```

JSON

Table continues…

```
{
  "listenport": [
    {
      "sipdomain": {
        "link": {
          "hrefName": "domain1.com"
        }
      },
      "transportprotocol": "TLS",
      "portnumber": 5061,
      "endpoint": true,
      "notes": ""
    }
  ],
  "entitylink": [],
  "sipresponse": [
    {
      "type": "up",
      "response": "111",
      "notes": ""
    }
  ],
  "name": "dummyASM1",
  "do_monitoring": "use-instance",
  "monitor_proactive_secs": 900,
  "monitor_reactive_secs": 120,
  "monitor_retries": 1,
  "securable": false,
  "cdrSetting": "none",
  "cac_capable": false,
  "loop_detect_mode": "off",
  "loop_detect_threshold": 5,
  "loop_detect_interval_msec": 200,
  "credentialname": "",
  "userfc3263": false,
  "timer_bf_secs": 4,
  "timezoneName": "America/Denver",
  "fqdnoripaddr": "192.168.0.24",
  "entitytype": "ASM",
  "notes": ""
}
```


SIP entity response content

XML

Table continues…

```
<sipentity>
    <notes></notes>
    <entitytype>ASM</entitytype>
    <fqdnoripaddr>192.168.101.101</fqdnoripaddr>
    <ipaddrFamilyType>IPv4</ipaddrFamilyType>
    <ipaddrTolerant>true</ipaddrTolerant>
    <name>ASM</name>
    <cac_capable>false</cac_capable>
    <cdrSetting>none</cdrSetting>
    <credentialname></credentialname>
    <do_monitoring>use-instance</do_monitoring>
    <loop_detect_interval_msec>200</loop_detect_interval_msec>
    <loop_detect_mode>on</loop_detect_mode>
    <loop_detect_threshold>5</loop_detect_threshold>
    <monitor_okresponses>1</monitor_okresponses>
    <monitor_proactive_secs>900</monitor_proactive_secs>
    <monitor_reactive_secs>120</monitor_reactive_secs>
    <monitor_retries>1</monitor_retries>
    <securable>false</securable>
    <timer_bf_secs>4</timer_bf_secs>
    <timezoneName>America/Fortaleza</timezoneName>
    <userfc3263>false</userfc3263>
    <link  href="https://augusta1.dr.avaya.com/NRP/admin/sipentities/32771"  rel="self"/>
    <listenport>
        <notes></notes>
        <portnumber>5061</portnumber>
        <endpoint>false</endpoint>
<ipaddrFamily>IPv4</ipaddrFamily>
        <transportprotocol>TLS</transportprotocol>
        <sipdomain>
            <link href="https://augusta1.dr.avaya.com/NRP/admin/domains/1"
hrefName="avaya.com" rel="reference" title=""/>
```

```
        </sipdomain>

        <link href="https://augusta1.dr.avaya.com/NRP/admin/sipentities/32771/
listenports/32768" rel="self"/>

    </listenport>

    <sipresponse>

        <notes></notes>

        <response>513</response>

        <type>up</type>

        <link href="https://augusta1.dr.avaya.com/NRP/admin/sipentities/32771/
sipresponses/2" rel="self"/>

    </sipresponse>

</sipentity>
```

JSON

Table continues…

```
{
  "link": {
    "href": "https://{fqdn}/NRP/admin/sipentities/32785",
    "rel": "self"
  },
  "listenport": [
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/sipentities/32785/listenports/32768",
        "rel": "self"
      },
      "sipdomain": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/domains/4",
          "title": "",
          "rel": "reference",
          "hrefName": "domain1.com"
        }
      },
      "transportprotocol": "TLS",
      "portnumber": 5061,
      "notes": ""
    }
  ],
  "entitylink": [],
  "sipresponse": [
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/sipentities/32785/sipresponses/32768",
        "rel": "self"
      },
      "type": "up",
      "response": "111",
      "notes": ""
    }
  ],
  "name": "dummyASM1",
  "do_monitoring": "use-instance",
  "monitor_proactive_secs": 900,
  "monitor_reactive_secs": 120,
  "monitor_retries": 1,
  "securable": false,
  "cdrSetting": "none",
  "cac_capable": false,
  "loop_detect_mode": "off",
  "loop_detect_threshold": 5,
  "loop_detect_interval_msec": 200,
  "credentialname": "",
  "userfc3263": false,
  "timer_bf_secs": 4,
  "timezoneName": "America/Denver",
  "fqdnoripaddr": "192.168.0.24",
  "entitytype": "ASM",
  "notes": ""
}
```


IPv6 SIP entity response content

XML

Table continues…

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<sipentity>
<notes></notes>
<entitytype>ASM</entitytype>
<fqdnoripaddr>23::34</fqdnoripaddr>
<ipaddrFamilyType>IPv6</ipaddrFamilyType>
<ipaddrTolerant>true</ipaddrTolerant>
<name>SM2_IPv6</name>
<cac_capable>false</cac_capable>
<cdrSetting>none</cdrSetting>
<credentialname></credentialname>
<do_monitoring>use-instance</do_monitoring>
<loop_detect_interval_msec>200</loop_detect_interval_msec>
<loop_detect_mode>on</loop_detect_mode>
<loop_detect_threshold>5</loop_detect_threshold>
<monitor_okresponses>1</monitor_okresponses>
<monitor_proactive_secs>900</monitor_proactive_secs>
<monitor_reactive_secs>120</monitor_reactive_secs>
<monitor_retries>1</monitor_retries>
<securable>false</securable>
<tcp_failover_port_v6>5061</tcp_failover_port_v6>
<timer_bf_secs>4</timer_bf_secs>
<timezoneName>America/Fortaleza</timezoneName>
<userfc3263>false</userfc3263> <link href="https://{fqdn}/NRP/admin/sipentities/
163842" rel="self"/>
<entitylink> <link href="https://{fqdn}/NRP/admin/entitylinks/65536"
hrefName="SM1_IPv6 - SM2_IPv6 TCPIPv6" rel="reference" title="Auto-generated Failover
Link"/>
</entitylink>
</sipentity>
```

SIP entity query response

XML

Table continues…

```
<sipentities count="2" limit="100" offset="0" query="" totalcount="2">
    <sipentity>
        <notes/>
        <entitytype>ASM</entitytype>
        <fqdnoripaddr>192.168.0.24</fqdnoripaddr>
        <name>dummyASM1</name>
        <cac_capable>false</cac_capable>
        <cdrSetting>none</cdrSetting>
        <credentialname/>
        <do_monitoring>use-instance</do_monitoring>
        <loop_detect_interval_msec>200</loop_detect_interval_msec>
        <loop_detect_mode>off</loop_detect_mode>
        <loop_detect_threshold>5</loop_detect_threshold>
        <monitor_proactive_secs>900</monitor_proactive_secs>
        <monitor_reactive_secs>120</monitor_reactive_secs>
        <monitor_retries>1</monitor_retries>
        <securable>false</securable>
        <timer_bf_secs>4</timer_bf_secs>
        <timezoneName>America/Denver</timezoneName>
        <userfc3263>false</userfc3263>
        <link href="https://{fqdn}/NRP/admin/sipentities/32785" rel="self"/>
        <outboundproxy>
            <link href="https://{fqdn}/NRP/admin/sipentities/32786"
hrefName="dummyASM2" rel="reference" title=""/>
        </outboundproxy>
        <listenport>
            <notes/>
            <portnumber>5061</portnumber>
            <endpoint>true</endpoint>
            <transportprotocol>TLS</transportprotocol>
            <sipdomain>
                <link href="https://{fqdn}/NRP/admin/domains/4" hrefName="domain1.com"
rel="reference" title=""/>
            </sipdomain>
            <link href="https://{fqdn}/NRP/admin/sipentities/32785/listenports/32768"
rel="self"/>
        </listenport>
        <sipresponse>
            <notes/>
            <response>111</response>
            <type>up</type>
            <link href="https://{fqdn}/NRP/admin/sipentities/32785/sipresponses/32768"
rel="self"/>
        </sipresponse>
    </sipentity>
    <sipentity>
        <notes/>
        <entitytype>CM</entitytype>
        <fqdnoripaddr>192.168.0.67</fqdnoripaddr>
        <name>failovergroups.peer.1</name>
        <cac_capable>false</cac_capable>
        <cdrSetting>none</cdrSetting>
        <credentialname/>
        <do_monitoring>use-instance</do_monitoring>
        <loop_detect_interval_msec>200</loop_detect_interval_msec>
        <loop_detect_mode>off</loop_detect_mode>
        <loop_detect_threshold>5</loop_detect_threshold>
        <monitor_proactive_secs>900</monitor_proactive_secs>
        <monitor_reactive_secs>120</monitor_reactive_secs>
        <monitor_retries>1</monitor_retries>
        <timer_bf_secs>4</timer_bf_secs>
        <timezoneName>America/Denver</timezoneName>
        <userfc3263>false</userfc3263>
```

```
        <adaptation>
            <link href="https://{fqdn}/NRP/admin/adaptations/360449"
hrefName="adaptation" rel="reference" title=""/>
        </adaptation>
        <link href="https://{fqdn}/NRP/admin/sipentities/32773" rel="self"/>
        <location>
            <link href="https://{fqdn}/NRP/admin/locations/32769" hrefName="Basking
Ridge" rel="reference" title=""/>
        </location>
        <primaryBandwidthManager>
            <link href="https://{fqdn}/NRP/admin/sipentities/32785"
hrefName="dummyASM1" rel="reference" title=""/>
        </primaryBandwidthManager>
    </sipentity>
</sipentities>
```

JSON

Table continues…

```
{
  "sipEntity": [
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/sipentities/32785",
        "rel": "self"
      },
      "listenport": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/sipentities/32785/listenports/32768",
            "rel": "self"
          },
          "sipdomain": {
            "link": {
              "href": "https://{fqdn}/NRP/admin/domains/4",
              "title": "",
              "rel": "reference",
              "hrefName": "domain1.com"
            }
          },
          "transportprotocol": "TLS",
          "portnumber": 5061,
          "notes": ""
        }
      ],
      "entitylink": [],
      "outboundproxy": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/sipentities/32786",
          "title": "",
          "rel": "reference",
          "hrefName": "dummyASM2"
        }
      },
      "sipresponse": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/sipentities/32785/sipresponses/32768",
            "rel": "self"
          },
          "type": "up",
          "response": "111",
          "notes": ""
        }
      ],
      "name": "dummyASM1",
      "do_monitoring": "use-instance",
      "monitor_proactive_secs": 900,
      "monitor_reactive_secs": 120,
      "monitor_retries": 1,
      "securable": false,
      "cdrSetting": "none",
      "cac_capable": false,
      "loop_detect_mode": "off",
      "loop_detect_threshold": 5,
      "loop_detect_interval_msec": 200,
      "credentialname": "",
      "userfc3263": false,
      "timer_bf_secs": 4,
      "timezoneName": "America/Denver",
      "fqdnoripaddr": "192.168.0.24",
      "entitytype": "ASM",
```

```
      "notes": ""
    },
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/sipentities/32773",
        "rel": "self"
      },
      "listenport": [],
      "entitylink": [],
      "location": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/locations/32769",
          "title": "",
          "rel": "reference",
          "hrefName": "Basking Ridge"
        }
      },
      "adaptation": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/adaptations/360449",
          "title": "",
          "rel": "reference",
          "hrefName": "adaptation"
        }
      },
      "primaryBandwidthManager": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/sipentities/32785",
          "title": "",
          "rel": "reference",
          "hrefName": "dummyASM1"
        }
      },
      "sipresponse": [],
      "name": "failovergroups.peer.1",
      "do_monitoring": "use-instance",
      "monitor_proactive_secs": 900,
      "monitor_reactive_secs": 120,
      "monitor_retries": 1,
      "cdrSetting": "none",
      "cac_capable": false,
      "loop_detect_mode": "off",
      "loop_detect_threshold": 5,
      "loop_detect_interval_msec": 200,
      "credentialname": "",
      "userfc3263": false,
      "timer_bf_secs": 4,
      "timezoneName": "America/Denver",
      "fqdnoripaddr": "192.168.0.67",
      "entitytype": "CM",
      "notes": ""
    }
  ],
  "offset": 0,
  "query": "",
  "count": 2,
  "limit": 100,
  "totalcount": 2
}
```

IPv6 SIP entity request

XML

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<sipentity>
<notes></notes>
<entitytype>ASM</entitytype>
<fqdnoripaddr>23:abc::34</fqdnoripaddr>
<ipaddrFamilyType>IPv6</ipaddrFamilyType>
<ipaddrTolerant>true</ipaddrTolerant>
<name>SM Test RSWS IPv6</name>
<cac capable>false</cac capable>
<cdrSetting>none</cdrSetting>
<credentialname></credentialname>
<do monitoring>use-instance</do monitoring>
<loop detect interval msec>200</loop detect interval msec>
<loop detect mode>on</loop detect mode>
<loop detect threshold>5</loop detect threshold>
<monitor okresponses>1</monitor okresponses>
<monitor proactive secs>900</monitor proactive secs>
<monitor reactive secs>120</monitor reactive secs>
<monitor retries>1</monitor retries>
<securable>false</securable>
<timer bf secs>4</timer bf secs>
<timezoneName>America/Fortaleza</timezoneName>
<userfc3263>false</userfc3263>
<sipresponse>
<notes/>
<response>111</response>
<type>up</type>
</sipresponse>
</sipentity>
```

IPv6 SIP entity response

XML

Table continues…

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<sipentity>
<notes></notes>
<entitytype>ASM</entitytype>
<fqdnoripaddr>23:abc::34</fqdnoripaddr>
<ipaddrFamilyType>IPv6</ipaddrFamilyType>
<ipaddrTolerant>true</ipaddrTolerant>
<name>SM_Test_RSWS_IPv6</name>
<cac_capable>false</cac_capable>
<cdrSetting>none</cdrSetting>
<credentialname></credentialname>
<do_monitoring>use-instance</do_monitoring>
<loop_detect_interval_msec>200</loop_detect_interval_msec>
<loop_detect_mode>on</loop_detect_mode>
<loop_detect_threshold>5</loop_detect_threshold>
<monitor_okresponses>1</monitor_okresponses>
<monitor_proactive_secs>900</monitor_proactive_secs>
<monitor_reactive_secs>120</monitor_reactive_secs>
<monitor_retries>1</monitor_retries>
<securable>false</securable>
<timer_bf_secs>4</timer_bf_secs>
<timezoneName>America/Fortaleza</timezoneName>
<userfc3263>false</userfc3263>
<link  href="https://smgr168.avaya.com/NRP/admin/sipentities/196619"  rel="self"/>
<sipresponse>
<notes></notes>
<response>111</response>
<type>up</type>
<link href="https://smgr168.avaya.com/NRP/admin/sipentities/196619/sipresponses/12"
rel="self"/>
</sipresponse>
</sipentity>
```

IPv6 Modify SIP entity response

XML

Table continues…

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<sipentity>
<notes>adding notes</notes>
<entitytype>ASM</entitytype>
<fqdnoripaddr>2:2:2::2</fqdnoripaddr>
<ipaddrFamilyType>IPv6</ipaddrFamilyType>
<ipaddrTolerant>true</ipaddrTolerant>
<name>SM_Test_RSWS_IPv6</name>
<cac_capable>false</cac_capable>
<cdrSetting>none</cdrSetting>
<credentialname></credentialname>
<do_monitoring>use-instance</do_monitoring>
<loop_detect_interval_msec>200</loop_detect_interval_msec>
<loop_detect_mode>on</loop_detect_mode>
<loop_detect_threshold>5</loop_detect_threshold>
<monitor_okresponses>1</monitor_okresponses>
<monitor_proactive_secs>900</monitor_proactive_secs>
<monitor_reactive_secs>120</monitor_reactive_secs>
<monitor_retries>1</monitor_retries>
<securable>false</securable>
<timer_bf_secs>4</timer_bf_secs>
<timezoneName>America/Chicago</timezoneName>
<userfc3263>false</userfc3263>
<link  href="https://smgr168.avaya.com/NRP/admin/sipentities/196619"  rel="self"/>
<sipresponse>
<notes></notes>
<response>111</response>
<type>up</type>
<link href="https://smgr168.avaya.com/NRP/admin/sipentities/196619/sipresponses/12"
rel="self"/>
</sipresponse>
</sipentity>
```

IPv6 SIP entity response

XML

Table continues…

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<sipentity>
 <notes></notes>
 <entitytype>ASM</entitytype>
 <fqdnoripaddr>23:abc:23::34</fqdnoripaddr>
 <ipaddrFamilyType>IPv6</ipaddrFamilyType>
 <ipaddrTolerant>true</ipaddrTolerant>
 <name>SMTest_IPv6</name>
 <cac_capable>false</cac_capable>
 <cdrSetting>none</cdrSetting>
 <credentialname></credentialname>
 <do_monitoring>use-instance</do_monitoring>
 <loop_detect_interval_msec>200</loop_detect_interval_msec>
 <loop_detect_mode>on</loop_detect_mode>
 <loop_detect_threshold>5</loop_detect_threshold>
 <monitor_okresponses>1</monitor_okresponses>
 <monitor_proactive_secs>900</monitor_proactive_secs>
 <monitor_reactive_secs>120</monitor_reactive_secs>
 <monitor_retries>1</monitor_retries>
 <securable>false</securable>
 <tcp_failover_port_v6>5061</tcp_failover_port_v6>
 <timer_bf_secs>4</timer_bf_secs>
 <timezoneName>America/Fortaleza</timezoneName>
 <userfc3263>false</userfc3263>
 <link  href="https://smgr168.avaya.com/NRP/admin/sipentities/196627"  rel="self"/>
 <listenport>
 <notes></notes>
 <portnumber>5060</portnumber>
 <endpoint>false</endpoint>
 <ipaddrFamily>IPv6</ipaddrFamily>
 <transportprotocol>TLS</transportprotocol>
 <sipdomain>
 <link href="https://smgr168.avaya.com/NRP/admin/domains/1" hrefName="avaya.com"
rel="reference" title=""/>
 </sipdomain>
 <link href="https://smgr168.avaya.com/NRP/admin/sipentities/196627/listenports/65553"
rel="self"/>
 </listenport>
 <sipresponse>
 <notes></notes>
 <response>111</response>
 <type>up</type>
 <link href="https://smgr168.avaya.com/NRP/admin/sipentities/196627/sipresponses/20"
rel="self"/>
 </sipresponse>
</sipentity>
```

SIP Entity Response with multiple adaptations

XML

Table continues…

```
<sipentity>
    <notes></notes>
    <entitytype>ASM</entitytype>
    <fqdnoripaddr>192.168.0.24</fqdnoripaddr>
    <name>dummyASM1</name>
    <cac_capable>false</cac_capable>
    <cdrSetting>none</cdrSetting>
    <credentialname></credentialname>
    <do_monitoring>use-instance</do_monitoring>
    <loop_detect_interval_msec>200</loop_detect_interval_msec>
    <loop_detect_mode>off</loop_detect_mode>
    <loop_detect_threshold>5</loop_detect_threshold>
    <monitor_proactive_secs>900</monitor_proactive_secs>
    <monitor_reactive_secs>120</monitor_reactive_secs>
    <monitor_retries>1</monitor_retries>
    <timer_bf_secs>4</timer_bf_secs>
    <timezoneName>America/Denver</timezoneName>
    <userfc3263>false</userfc3263>
    <link href="https://{fqdn}/NRP/admin/sipentities/32785" rel="self"/>
    <outboundproxy>
    <link href="https://{fqdn}/NRP/admin/sipentities/32786" hrefName="dummyASM2"
rel="reference" title=""/>
    </outboundproxy>
    <adaptations>
       <adaptation_order>1</adaptation_order>
       <link href="https://{fqdn}/NRP/admin/adaptationsbase/4" hrefName="digit
adaptation 1" rel="reference" title=""/>
    </adaptations>
    <adaptations>
       <adaptation_order>2</adaptation_order>
       <link href="https://{fqdn}/NRP/admin/adaptationsbase/32678" hrefName="regexp
adaptation 1" rel="reference" title=""/>
    </adaptations>
    <listenport>
    <notes></notes>
    <portnumber>5061</portnumber>
    <transportprotocol>TLS</transportprotocol>
    <endpoint>false</endpoint>
    <sipdomain>
    <link href="https://{fqdn}/NRP/admin/domains/4" hrefName="domain1.com"
rel="reference" title=""/>
    </sipdomain>
    <link href="https://{fqdn}/NRP/admin/sipentities/32785/listenports/32768"
rel="self"/>
    </listenport>
    <sipresponse>
    <notes></notes>
    <response>111</response>
    <type>up</type>
    <link href="https://{fqdn}/NRP/admin/sipentities/32785/sipresponses/32768"
rel="self"/>
    </sipresponse>
</sipentity>
```

SIP entity query response

XML

Table continues…

```
<sipentities count="2" limit="100" offset="0" query="" totalcount="2">
<sipentity>
     <notes></notes>
     <entitytype>ASM</entitytype>
     <fqdnoripaddr>192.168.0.24</fqdnoripaddr>
     <name>dummyASM1</name>
     <cac_capable>false</cac_capable>
     <cdrSetting>none</cdrSetting>
     <credentialname></credentialname>
     <do_monitoring>use-instance</do_monitoring>
     <loop_detect_interval_msec>200</loop_detect_interval_msec>
     <loop_detect_mode>off</loop_detect_mode>
     <loop_detect_threshold>5</loop_detect_threshold>
     <monitor_proactive_secs>900</monitor_proactive_secs>
     <monitor_reactive_secs>120</monitor_reactive_secs>
     <monitor_retries>1</monitor_retries>
     <timer_bf_secs>4</timer_bf_secs>
     <timezoneName>America/Denver</timezoneName>
     <userfc3263>false</userfc3263>
     <link href="https://{fqdn}/NRP/admin/sipentities/32785" rel="self"/>
     <outboundproxy>
     <link href="https://{fqdn}/NRP/admin/sipentities/32786" hrefName="dummyASM2"
rel="reference" title=""/>
     </outboundproxy>
     <listenport>
     <notes></notes>
     <portnumber>5061</portnumber>
     <transportprotocol>TLS</transportprotocol>
     <endpoint>false</endpoint>
     <sipdomain>
     <link href="https://{fqdn}/NRP/admin/domains/4" hrefName="domain1.com"
rel="reference" title=""/>
     </sipdomain>
     <link href="https://{fqdn}/NRP/admin/sipentities/32785/listenports/32768"
rel="self"/>
     </listenport>
     <sipresponse>
     <notes></notes>
     <response>111</response>
     <type>up</type>
     <link href="https://{fqdn}/NRP/admin/sipentities/32785/sipresponses/32768"
rel="self"/>
     </sipresponse>
     </sipentity>
     <sipentity>
     <notes></notes>
     <entitytype>CM</entitytype>
     <fqdnoripaddr>192.168.0.67</fqdnoripaddr>
     <name>failovergroups.peer.1</name>
     <cac_capable>false</cac_capable>
     <cdrSetting>none</cdrSetting>
     <credentialname></credentialname>
     <do_monitoring>use-instance</do_monitoring>
     <loop_detect_interval_msec>200</loop_detect_interval_msec>
     <loop_detect_mode>off</loop_detect_mode>
     <loop_detect_threshold>5</loop_detect_threshold>
     <monitor_proactive_secs>900</monitor_proactive_secs>
     <monitor_reactive_secs>120</monitor_reactive_secs>
     <timer_bf_secs>4</timer_bf_secs>
     <timezoneName>America/Denver</timezoneName>
     <userfc3263>false</userfc3263>
     <adaptation>
     <link href="https://{fqdn}/NRP/admin/adaptations/360449" hrefName="adaptation"
```

```
rel="reference" title=""/>
     </adaptation>
     <link href="https://{fqdn}/NRP/admin/sipentities/32773" rel="self"/>
     <location>
     <link href="https://{fqdn}/NRP/admin/locations/32769" hrefName="Basking Ridge"
rel="reference" title=""/>
     </location>
     <primaryBandwidthManager>
     <link href="https://{fqdn}/NRP/admin/sipentities/32785" hrefName="dummyASM1"
rel="reference" title=""/>
     </primaryBandwidthManager>
     </sipentity>
</sipentities>
```

JSON

Table continues…

```
{
  "sipEntity": [
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/sipentities/32785",
        "rel": "self"
      },
      "listenport": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/sipentities/32785/listenports/32768",
            "rel": "self"
          },
          "sipdomain": {
            "link": {
              "href": "https://{fqdn}/NRP/admin/domains/4",
              "title": "",
              "rel": "reference",
              "hrefName": "domain1.com"
            }
          },
          "transportprotocol": "TLS",
          "portnumber": 5061,
          "endpoint":false,


          "notes": ""
        }
      ],
      "entitylink": [],
      "outboundproxy": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/sipentities/32786",
          "title": "",
          "rel": "reference",
          "hrefName": "dummyASM2"
        }
      },
      "sipresponse": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/sipentities/32785/sipresponses/32768",
            "rel": "self"
          },
          "type": "up",
          "response": "111",
          "notes": ""
        }
      ],
      "name": "dummyASM1",
      "do_monitoring": "use-instance",
      "monitor_proactive_secs": 900,
      "monitor_reactive_secs": 120,
      "monitor_retries": 1,
      "cdrSetting": "none",
      "cac_capable": false,
      "loop_detect_mode": "off",
      "loop_detect_threshold": 5,
      "loop_detect_interval_msec": 200,
      "credentialname": "",
      "userfc3263": false,
      "timer_bf_secs": 4,
      "timezoneName": "America/Denver",
```

```
      "fqdnoripaddr": "192.168.0.24",
      "entitytype": "ASM",
      "notes": ""
    },
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/sipentities/32773",
        "rel": "self"
      },
      "listenport": [],
      "entitylink": [],
      "location": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/locations/32769",
          "title": "",
          "rel": "reference",
          "hrefName": "Basking Ridge"
        }
      },
      "adaptation": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/adaptations/360449",
          "title": "",
          "rel": "reference",
          "hrefName": "adaptation"
        }
      },
      "primaryBandwidthManager": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/sipentities/32785",
          "title": "",
          "rel": "reference",
          "hrefName": "dummyASM1"
        }
      },
      "sipresponse": [],
      "name": "failovergroups.peer.1",
      "do_monitoring": "use-instance",
      "monitor_proactive_secs": 900,
      "monitor_reactive_secs": 120,
      "monitor_retries": 1,
      "cdrSetting": "none",
      "cac_capable": false,
      "loop_detect_mode": "off",
      "loop_detect_threshold": 5,
      "loop_detect_interval_msec": 200,
      "credentialname": "",
      "userfc3263": false,
      "timer_bf_secs": 4,
      "timezoneName": "America/Denver",
      "fqdnoripaddr": "192.168.0.67",
      "entitytype": "CM",
      "notes": ""
    }
  ],
  "offset": 0,
  "query": "",
  "count": 2,
  "limit": 100,
  "totalcount": 2
}
```

Entity Links

Get a single entity link by ID or name

Request	GET https://{fqdn}/NRP/admin/entitylinks/32768 GET https://{fqdn}/NRP/admin/entitylinks/name/link1
Request Content	None.
Response Content	See Entity link response. on page 82
Response Content	See IPv6 entity link response on page 83

Add an entity link

Request	POST https://{fqdn}/NRP/admin/entitylinks
Request Content	See Entity link request. on page 82
Response Content	See Entity link response. on page 82

Modify specified entity link fields

Request	POST https://{fqdn}/NRP/admin/entitylinks/ 32768;notes=adding%20notes; transportProtocol =UDP;connectionPolicy=untrusted
Request Content	None.
Response	See Entity link response. on page 82

Replace an existing entity link by ID or name

Request	PUT https://{fqdn}/NRP/admin/entitylinks/32768 PUT https://{fqdn}/NRP/admin/entitylinks/name/link1
Request Content	See Entity link request. on page 82
Response	See Entity link response. on page 82

Retrieve all entity links

Request	GET https://{fqdn}/NRP/admin/entitylinks
Request Content	None.
Optional Query Parameters	name, offset, limit
Response	See Entity link query response. on page 84
Response	See IPv6 entity link response on page 83

Update SIP Entity 1 or SIP Entity 2 for an existing entity link

Request	POST https://{fqdn}/NRP/admin/entitylinks/32768/sipentity1 POST https://{fqdn}/NRP/admin/entitylinks/32768/sipentity2
Request Content	<link hrefName="dummyASM1"/> or <link href= "https://{fqdn}/NRP/admin/sipentities/4"/>
Response	See Entity link response. on page 82

Entity link request content

XML

```
<entitylink>
    <notes/>
    <connectionPolicy>trusted</connectionPolicy>
    <listenPortEntity1>5061</listenPortEntity1>
    <listenPortEntity2>5061</listenPortEntity2>
    <name>testscrush to testCM3</name>
    <serviceState>normal</serviceState>
    <transportProtocol>TLS</transportProtocol>
    <trusted>true</trusted>
    <sipentity1>
        <link hrefName="testscrush"/>
    </sipentity1>
    <sipentity2>
        <link hrefName="testCM3"/>
    </sipentity2>
</entitylink>
```

JSON

```
{
      "sipentity2": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/sipentities/32810"
        }
      },
      "sipentity1": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/sipentities/32831"
        }
      },
      "name": "testscrush to testCM3",
      "serviceState": "normal",
      "trusted": true,
      "transportProtocol": "TLS",
      "listenPortEntity1": 5061,
      "listenPortEntity2": 5061,
      "connectionPolicy": "trusted",
      "notes": ""
    }
```

Entity link response content

XML

Table continues…

```
<entitylink>
    <notes/>
    <connectionPolicy>trusted</connectionPolicy>
    <listenPortEntity1>5061</listenPortEntity1>
    <listenPortEntity2>5061</listenPortEntity2>
    <name>testscrush to testCM3</name>
    <serviceState>normal</serviceState>
    <transportProtocol>TLS</transportProtocol>
    <trusted>true</trusted>
    <link href="https://{fqdn}/NRP/admin/entitylinks/32771" rel="self"/>
    <sipentity1>
        <link href="https://{fqdn}/NRP/admin/sipentities/32831" hrefName="testscrush"
rel="reference" title=""/>
    </sipentity1>
    <sipentity2>
        <link href="https://{fqdn}/NRP/admin/sipentities/32810" hrefName="testCM3"
rel="reference" title=""/>
    </sipentity2>
</entitylink>
```

JSON

```
{
      "link": {
        "href": "https://{fqdn}/NRP/admin/entitylinks/32771",
        "rel": "self"
      },
      "sipentity2": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/sipentities/32810",
          "title": "",
          "rel": "reference",
          "hrefName": "testCM3"
        }
      },
      "sipentity1": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/sipentities/32831",
          "title": "",
          "rel": "reference",
          "hrefName": "testscrush"
        }
      },
      "name": "testscrush to testCM3",
      "serviceState": "normal",
      "trusted": true,
      "transportProtocol": "TLS",
      "listenPortEntity1": 5061,
      "listenPortEntity2": 5061,
      "connectionPolicy": "trusted",
      "notes": ""
    }
```

IPv6 Entity link response

XML

Table continues…

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<entitylinks count="1" limit="1000" offset="0" query="" totalcount="1">
 <entitylink>
 <notes>Auto-generated Failover Link</notes>
 <connectionPolicy>trusted</connectionPolicy>
 <ipaddr_family>IPv6</ipaddr_family>
 <listenPortEntity1>5061</listenPortEntity1>
 <listenPortEntity2>5061</listenPortEntity2>
 <name>SM1_IPv6 - SM2_IPv6 TCPIPv6</name>
 <serviceState>normal</serviceState>
 <transportProtocol>TCP</transportProtocol>
 <trusted>true</trusted>
 <link href="https://smgr168.avaya.com/NRP/admin/entitylinks/65536" rel="self"/>
 <sipentity1>
 <link href="https://smgr168.avaya.com/NRP/admin/sipentities/163841"
hrefName="SM1_IPv6" rel="reference" title=""/>
 </sipentity1>
 <sipentity2>
 <link href="https://smgr168.avaya.com/NRP/admin/sipentities/163842"
hrefName="SM2_IPv6" rel="reference" title=""/>
 </sipentity2>
 </entitylink>
</entitylinks>
```

Entity link query response

XML

Table continues…

```
<entitylinks count="4" limit="100" offset="0" query="" totalcount="4">
    <entitylink>
        <notes/>
        <connectionPolicy>trusted</connectionPolicy>
        <listenPortEntity1>5555</listenPortEntity1>
        <listenPortEntity2>5555</listenPortEntity2>
        <name>aft entity link</name>
        <serviceState>normal</serviceState>
        <transportProtocol>TLS</transportProtocol>
        <trusted>true</trusted>
        <link href="https://{fqdn}/NRP/admin/entitylinks/32768" rel="self"/>
        <sipentity1>
            <link href="https://{fqdn}/NRP/admin/sipentities/32829"
hrefName="nrp_aft_entity1" rel="reference" title=""/>
        </sipentity1>
        <sipentity2>
            <link href="https://{fqdn}/NRP/admin/sipentities/32830"
hrefName="nrp_aft_entity2" rel="reference" title=""/>
        </sipentity2>
    </entitylink>
    <entitylink>
        <notes/>
        <connectionPolicy>trusted</connectionPolicy>
        <listenPortEntity1>5061</listenPortEntity1>
        <listenPortEntity2>5061</listenPortEntity2>
        <name>testscrush to testCM1</name>
        <serviceState>normal</serviceState>
        <transportProtocol>TLS</transportProtocol>
        <trusted>true</trusted>
        <link href="https://{fqdn}/NRP/admin/entitylinks/32769" rel="self"/>
        <sipentity1>
            <link href="https://{fqdn}/NRP/admin/sipentities/32831"
hrefName="testscrush" rel="reference" title=""/>
        </sipentity1>
        <sipentity2>
            <link href="https://{fqdn}/NRP/admin/sipentities/32809" hrefName="testCM1"
rel="reference" title=""/>
        </sipentity2>
    </entitylink> ...  </entitylinks>
```

JSON

Table continues…

```
{
  "entitylink": [
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/entitylinks/32769",
        "rel": "self"
      },
      "sipentity2": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/sipentities/32809",
          "title": "",
          "rel": "reference",
          "hrefName": "testCM1"
        }
      },
      "sipentity1": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/sipentities/32831",
          "title": "",
          "rel": "reference",
          "hrefName": "testscrush"
        }
      },
      "name": "testscrush to testCM1",
      "serviceState": "normal",
      "trusted": true,
      "transportProtocol": "TLS",
      "listenPortEntity1": 5061,
      "listenPortEntity2": 5061,
      "connectionPolicy": "trusted",
      "notes": ""
    },
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/entitylinks/32770",
        "rel": "self"
      },
      "sipentity2": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/sipentities/32811",
          "title": "",
          "rel": "reference",
          "hrefName": "testCM2"
        }
      },
      "sipentity1": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/sipentities/32831",
          "title": "",
          "rel": "reference",
          "hrefName": "testscrush"
        }
      },
      "name": "testscrush to testCM2",
      "serviceState": "normal",
      "trusted": true,
      "transportProtocol": "TLS",
      "listenPortEntity1": 5061,
      "listenPortEntity2": 5061,
      "connectionPolicy": "trusted",
      "notes": ""
    },
    ...
```

```
  ],
  "offset": 0,
  "query": "",
  "count": 4,
  "limit": 100,
  "totalcount": 4
}
```

Time Ranges

Get a single time range by ID or name

Request	`GET https://{fqdn}/NRP/admin/timeranges/32567` `GET https://{fqdn}/NRP/admin/timeranges/name/after%20hours`
Request Content	None.
Response Content	See Time range response. on page 88

Add a time range

Request	`POST https://{fqdn}/NRP/admin/timeranges`
Request Content	See Time range request. on page 88
Response Content	See Time range response. on page 88

Modify specified time range fields

Request	`POST https://{fqdn}/NRP/admin/timeranges/` `32567;notes=new%20range;startTime=02:30`
Request Content	None.
Response	See Time range response. on page 88

Replace an existing time range by ID or name

Request	`PUT https://{fqdn}/NRP/admin/timeranges/32567` `PUT https://{fqdn}/NRP/admin/timeranges/name/new%20range`
Request Content	See Time range request. on page 88
Response	See Time range response. on page 88

Retrieve all time ranges

Request	`GET https://{fqdn}/NRP/admin/timeranges`
Request Content	None.
Optional Query Parameters	name, offset, limit
Response	See Time range query response. on page 89

Delete a time range by ID or name

Request	DELETE https://{fqdn}/NRP/admin/timeranges/32567 DELETE https://{fqdn}/NRP/admin/timeranges/name/new%20range
Request Content	None.
Response	None.

Time range request content

XML

```
<timerange>
    <notes>Time Range 24/7</notes>
    <includesFriday>true</includesFriday>
    <includesMonday>true</includesMonday>
    <includesSaturday>true</includesSaturday>
    <includesSunday>true</includesSunday>
    <includesThursday>true</includesThursday>
    <includesTuesday>true</includesTuesday>
    <includesWednesday>true</includesWednesday>
    <name>24/7</name>
    <startTime>00:00</startTime>
    <stopTime>23:59</stopTime>
</timerange>
```

JSON

```
{
      "name": "aft time range",
      "startTime": "01:00",
      "stopTime": "12:00",
      "includesMonday": true,
      "includesTuesday": true,
      "includesWednesday": true,
      "includesThursday": true,
      "includesFriday": true,
      "includesSaturday": true,
      "includesSunday": true
    }
```

Time range response content

XML

```
<timerange>
    <notes>Time Range 24/7</notes>
    <includesFriday>true</includesFriday>
    <includesMonday>true</includesMonday>
    <includesSaturday>true</includesSaturday>
    <includesSunday>true</includesSunday>
    <includesThursday>true</includesThursday>
    <includesTuesday>true</includesTuesday>
    <includesWednesday>true</includesWednesday>
    <name>24/7</name>
    <startTime>00:00</startTime>
    <stopTime>23:59</stopTime>
    <link href="https://{fqdn}/NRP/admin/timeranges/32768" rel="self"/>
</timerange>
```

JSON

Table continues…

```
{
      "link": {
        "href": "https://{fqdn}/NRP/admin/timeranges/32769",
        "rel": "self"
      },
      "name": "aft time range",
      "startTime": "01:00",
      "stopTime": "12:00",
      "includesMonday": true,
      "includesTuesday": true,
      "includesWednesday": true,
      "includesThursday": true,
      "includesFriday": true,
      "includesSaturday": true,
      "includesSunday": true
    }
```

Time range query response

XML

```
<timeranges count="2" limit="100" offset="0" query="" totalcount="2">
    <timerange>
        <notes>Time Range 24/7</notes>
        <includesFriday>true</includesFriday>
        <includesMonday>true</includesMonday>
        <includesSaturday>true</includesSaturday>
        <includesSunday>true</includesSunday>
        <includesThursday>true</includesThursday>
        <includesTuesday>true</includesTuesday>
        <includesWednesday>true</includesWednesday>
        <name>24/7</name>
        <startTime>00:00</startTime>
        <stopTime>23:59</stopTime>
        <link href="https://princeville-smgr.dr.avaya.com/NRP/admin/timeranges/32768"
rel="self"/>
    </timerange>
    <timerange>
        <includesFriday>true</includesFriday>
        <includesMonday>true</includesMonday>
        <includesSaturday>true</includesSaturday>
        <includesSunday>true</includesSunday>
        <includesThursday>true</includesThursday>
        <includesTuesday>true</includesTuesday>
        <includesWednesday>true</includesWednesday>
        <name>aft time range</name>
        <startTime>02:30</startTime>
        <stopTime>12:00</stopTime>
        <link href="https://princeville-smgr.dr.avaya.com/NRP/admin/timeranges/32769"
rel="self"/>
    </timerange>
</timeranges>
```

JSON

Table continues…

```
{
  "timeRange": [
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/timeranges/32768",
        "rel": "self"
      },
      "name": "24/7",
      "startTime": "00:00",
      "stopTime": "23:59",
      "includesMonday": true,
      "includesTuesday": true,
      "includesWednesday": true,
      "includesThursday": true,
      "includesFriday": true,
      "includesSaturday": true,
      "includesSunday": true,
      "notes": "Time Range 24/7"
    },
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/timeranges/32769",
        "rel": "self"
      },
      "name": "aft time range",
      "startTime": "01:00",
      "stopTime": "12:00",
      "includesMonday": true,
      "includesTuesday": true,
      "includesWednesday": true,
      "includesThursday": true,
      "includesFriday": true,
      "includesSaturday": true,
      "includesSunday": true
    }
  ],
  "offset": 0,
  "query": "",
  "count": 2,
  "limit": 100,
  "totalcount": 2
}
```


Routing Policies

Get a single routing policy by ID or name

Request	`GET https://{fqdn}/NRP/admin/routingpolicies/32567` `GET https://{fqdn}/NRP/admin/routingpolicies/name/policy`
Request Content	None.
Response Content	See Routing policy response. on page 94

Add a routing policy

Request	`POST https://{fqdn}/NRP/admin/routingpolicies`

Table continues…

Request Content	See Routing policy request. on page 93
Response Content	See Routing policy response. on page 94

Modify specified routing policy fields

Request	`POST https://{fqdn}/NRP/admin/routingpolicies/32567;retries=2;disabled=true`
Request Content	None.
Response	See Routing policy response. on page 94

Replace an existing routing policy by ID or name

Request	`PUT https://{fqdn}/NRP/admin/routingpolicies/32567` `PUT https://{fqdn}/NRP/admin/routingpolicies/name/policy`
Request Content	See Routing policy request. on page 93
Response	See Routing policy response. on page 94

Retrieve all routing policies

Request	`GET https://{fqdn}/NRP/admin/routingpolicies`
Request Content	None.
Optional Query Parameters	name, offset, limit
Response	See Routing policy query response. on page 96

Delete a routing policy by ID or name

Request	`DELETE https://{fqdn}/NRP/admin/routingpolicies/32567` `DELETE https://{fqdn}/NRP/admin/routingpolicies/name/policy`
Request Content	None.
Response	None.

Update SIP entity destination for an existing routing policy

Request	`POST https://{fqdn}/NRP/admin/routingpolicies/32768/sipentity`

Request Content	`<link hrefName="dummyASM1"/>`
	`or`
	`<link href= "https://{fqdn}/NRP/admin/sipentities/4"/>`

Response	See Routing policy response. on page 94

Add time of day to an existing routing policy

Request	`POST https://{fqdn}/NRP/admin/routingpolicies/32768/timeofdays`

Table continues…

Request Content	<timeofday> <rank>0</rank> <timerange> <link href="https://{fqdn}/NRP/admin/timeranges/32768"/> or <link hrefName="24/7"/> </timerange> </timeofday>
Response	See Routing policy response. on page 94

Remove a single time of day from an existing routing policy

Request	DELETE https://{fqdn}/NRP/admin/routingpolicies/32768/timeofdays/294912
Request Content	None.
Response	See Routing policy response. on page 94

Modify specified time of day fields

Request	POST https://{fqdn}/NRP/admin/routingpolicies/32768/timeofdays/294912;rank=2
Request Content	None.
Response	See Routing policy response. on page 94

Replace an existing time of day

Request	PUT https://{fqdn}/NRP/admin/routingpolicies/32768/timeofdays/294912
Request Content	<timeofday> <rank>0</rank> <timerange> <link href="https://{fqdn}/NRP/admin/timeranges/32768"/> or <link hrefName="24/7"/> </timerange> </timeofday>
Response	See Routing policy response. on page 94

Modify time range associated with an existing time of day

Request	POST https://{fqdn}/NRP/admin/routingpolicies/32768/timeofdays/294912/timerange
Request Content	<link href= "https://{fqdn}/NRP/admin/timeranges/32768"/> or <link hrefName="24/7"/>
Response	See Routing policy response. on page 94

Add a dial pattern to an existing routing policy

Request	POST https://{fqdn}/NRP/admin/routingpolicies/32768/dialpatterns
Request Content	<link hrefName="1/2/15/Basking Ridge/ALL"/> {pattern}/{min}/{max}/{location}/{domain} or <link href="https://{fqdn}/NRP/admin/dialpatterns/4"/>
Response	See Routing policy response. on page 94

Remove a dial pattern from an existing routing policy

Request	`DELETE https://{fqdn}/NRP/admin/routingpolicies/32768/dialpatterns/294912`
Request Content	None.
Response	See Routing policy response. on page 94

Add a regular expression to an existing routing policy

Request	`POST https://{fqdn}/NRP/admin/routingpolicies/32768/regularexpressions`

Request Content	`<link hrefName="3"/>`
	` or`
	`<link href="https://{fqdn}/NRP/admin/regularexpressions/4"/>`

Response	See Routing policy response. on page 94

Remove a regular expression from an existing routing policy

Request	`DELETE https://{fqdn}/NRP/admin/routingpolicies/32768/regularexpressions/294912`
Request Content	None.
Response	See Routing policy response. on page 94

Routing policy request content

XML

```
<routingpolicy>
    <notes/>
    <disabled>false</disabled>
    <name>policy</name>
    <retries>0</retries>
    <dialpattern>
        <link hrefName="1/2/15/Basking Ridge/ALL"/>
    </dialpattern>
    <regularexpression>
        <link hrefName="1"/>
    </regularexpression>
    <sipentity>
        <link hrefName="bsm4-8300-sm"/>
    </sipentity>
    <timeofday>
        <rank>0</rank>
        <timerange>
            <link hrefName="24/7"/>
        </timerange>
    </timeofday>
</routingpolicy>
```

JSON

Table continues…

```
{
      "regularexpression": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/regularexpressions/163840"
          }
        }
      ],
      "dialpattern": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/dialpatterns/1376256"
          }
        }
      ],
      "timeofday": [
        {
          "timerange": {
            "link": {
              "href": "https://{fqdn}/NRP/admin/timeranges/32768"
            }
          },
          "rank": 0
        }
      ],
      "sipentity": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/sipentities/98304"
        }
      },
      "name": "policy",
      "retries": 0,
      "disabled": false,
      "notes": ""
    }
```


Routing policy response content

XML

Table continues…

```
<routingpolicy>
    <notes/>
    <disabled>false</disabled>
    <name>policy</name>
    <retries>0</retries>
    <dialpattern>
        <link href="https://{fqdn}/NRP/admin/dialpatterns/1376256" hrefName="1/2/15/
Basking Ridge/ALL" rel="reference" title=""/>
    </dialpattern>
    <link href="https://{fqdn}/NRP/admin/routingpolicies/98304" rel="self"/>
    <regularexpression>
        <link href="https://{fqdn}/NRP/admin/regularexpressions/163840" hrefName="1"
rel="reference" title=""/>
    </regularexpression>
    <sipentity>
        <link href="https://{fqdn}/NRP/admin/sipentities/98304" hrefName="bsm4-8300-
sm" rel="reference" title=""/>
    </sipentity>
    <timeofday>
        <rank>0</rank>
        <link href="https://{fqdn}/NRP/admin/routingpolicies/98304/timeofdays/98304"
rel="self"/>
        <timerange>
            <link href="https://{fqdn}/NRP/admin/timeranges/32768" hrefName="24/7"
rel="reference" title="Time Range 24/7"/>
        </timerange>
    </timeofday>
</routingpolicy>
```

JSON

Table continues…

```
{
      "link": {
        "href": "https://{fqdn}/NRP/admin/routingpolicies/98304",
        "rel": "self"
      },
      "regularexpression": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/regularexpressions/163840",
            "title": "",
            "rel": "reference",
            "hrefName": "1"
          }
        }
      ],
      "dialpattern": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/dialpatterns/1376256",
            "title": "",
            "rel": "reference",
            "hrefName": "1/2/15/Basking Ridge/ALL"
          }
        }
      ],
      "timeofday": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/routingpolicies/98304/timeofdays/98304",
            "rel": "self"
          },
          "timerange": {
            "link": {
              "href": "https://{fqdn}/NRP/admin/timeranges/32768",
              "title": "Time Range 24/7",
              "rel": "reference",
              "hrefName": "24/7"
            }
          },
          "rank": 0
        }
      ],
      "sipentity": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/sipentities/98304",
          "title": "",
          "rel": "reference",
          "hrefName": "bsm4-8300-sm"
        }
      },
      "name": "policy",
      "retries": 0,
      "disabled": false,
      "notes": ""
    }
```


Routing policy query response

XML

Table continues…

```
<routingpolicies count="2" limit="100" offset="0" query="" totalcount="2">
    <routingpolicy>
        <notes/>
        <disabled>false</disabled>
        <name>policy</name>
        <retries>0</retries>
        <dialpattern>
            <link href="https://{fqdn}/NRP/admin/dialpatterns/1376256"
hrefName="1/2/15/Basking Ridge/ALL" rel="reference" title=""/>
        </dialpattern>
        <link href="https://{fqdn}/NRP/admin/routingpolicies/98304" rel="self"/>
        <regularexpression>
            <link href="https://{fqdn}/NRP/admin/regularexpressions/163840"
hrefName="1" rel="reference" title=""/>
        </regularexpression>
        <sipentity>
            <link href="https://{fqdn}/NRP/admin/sipentities/98304"
hrefName="bsm4-8300-sm" rel="reference" title=""/>
        </sipentity>
        <timeofday>
            <rank>0</rank>
            <link href="https://{fqdn}/NRP/admin/routingpolicies/98304/timeofdays/
98304" rel="self"/>
            <timerange>
                <link href="https://{fqdn}/NRP/admin/timeranges/32768" hrefName="24/7"
rel="reference" title="Time Range 24/7"/>
            </timerange>
        </timeofday>
    </routingpolicy>
    <routingpolicy>
        <notes/>
        <disabled>false</disabled>
        <name>policy2</name>
        <retries>0</retries>
        <dialpattern>
            <link href="https://{fqdn}/NRP/admin/dialpatterns/1376256"
hrefName="1/2/15/Basking Ridge/ALL" rel="reference" title=""/>
        </dialpattern>
        <link href="https://{fqdn}/NRP/admin/routingpolicies/98305" rel="self"/>
        <regularexpression>
            <link href="https://{fqdn}/NRP/admin/regularexpressions/163840"
hrefName="1" rel="reference" title=""/>
        </regularexpression>
        <sipentity>
            <link href="https://{fqdn}/NRP/admin/sipentities/98304"
hrefName="bsm4-8300-sm" rel="reference" title=""/>
        </sipentity>
        <timeofday>
            <rank>0</rank>
            <link href="https://{fqdn}/NRP/admin/routingpolicies/98305/timeofdays/
98305" rel="self"/>
            <timerange>
                <link href="https://{fqdn}/NRP/admin/timeranges/32768" hrefName="24/7"
rel="reference" title="Time Range 24/7"/>
            </timerange>
        </timeofday>
    </routingpolicy>
</routingpolicies>
```

JSON

Table continues…

```
{
  "routingPolicy": [
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/routingpolicies/98304",
        "rel": "self"
      },
      "regularexpression": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/regularexpressions/163840",
            "title": "",
            "rel": "reference",
            "hrefName": "1"
          }
        }
      ],
      "dialpattern": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/dialpatterns/1376256",
            "title": "",
            "rel": "reference",
            "hrefName": "1/2/15/Basking Ridge/ALL"
          }
        }
      ],
      "timeofday": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/routingpolicies/98304/timeofdays/98304",
            "rel": "self"
          },
          "timerange": {
            "link": {
              "href": "https://{fqdn}/NRP/admin/timeranges/32768",
              "title": "Time Range 24/7",
              "rel": "reference",
              "hrefName": "24/7"
            }
          },
          "rank": 0
        }
      ],
      "sipentity": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/sipentities/98304",
          "title": "",
          "rel": "reference",
          "hrefName": "bsm4-8300-sm"
        }
      },
      "name": "policy",
      "retries": 0,
      "disabled": false,
      "notes": ""
    },
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/routingpolicies/98305",
        "rel": "self"
      },
      "regularexpression": [
```

```
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/regularexpressions/163840",
            "title": "",
            "rel": "reference",
            "hrefName": "1"
          }
        }
      ],
      "dialpattern": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/dialpatterns/1376256",
            "title": "",
            "rel": "reference",
            "hrefName": "1/2/15/Basking Ridge/ALL"
          }
        }
      ],
      "timeofday": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/routingpolicies/98305/timeofdays/98305",
            "rel": "self"
          },
          "timerange": {
            "link": {
              "href": "https://{fqdn}/NRP/admin/timeranges/32768",
              "title": "Time Range 24/7",
              "rel": "reference",
              "hrefName": "24/7"
            }
          },
          "rank": 0
        }
      ],
      "sipentity": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/sipentities/98304",
          "title": "",
          "rel": "reference",
          "hrefName": "bsm4-8300-sm"
        }
      },
      "name": "policy2",
      "retries": 0,
      "disabled": false,
      "notes": ""
    }
  ],
  "offset": 0,
  "query": "",
  "count": 2,
  "limit": 100,
  "totalcount": 2
}
```

Dial Patterns

Get a single dial pattern by ID or pattern/min/max/location/domain

Request	`GET https://{fqdn}/NRP/admin/dialpatterns/32567` `GET https://{fqdn}/NRP/admin/dialpatterns/1/2/15/Basking%20Ridge/ALL`
Request Content	None.
Response Content	See Dial pattern response. on page 103

Add a dial pattern

Request	`POST https://{fqdn}/NRP/admin/dialpatterns`
Request Content	See Dial pattern request. on page 101
Response Content	See Dial pattern response. on page 103

Modify specified dial pattern fields

Request	`POST https://{fqdn}/NRP/admin/dialpatterns/` `32567;mindigits=2;maxdigits=5;digitpattern=11`
Request Content	None.
Response	See Dial pattern response. on page 103

Replace an existing dial pattern by ID or pattern/min/max/location/domain

Request	`PUT https://{fqdn}/NRP/admin/dialpatterns/32567` `PUT https://{fqdn}/NRP/admin/dialpatterns/1/2/15/Basking%20Ridge/ALL`
Request Content	See Dial pattern request. on page 101
Response	See Dial pattern response. on page 103

Retrieve all dial patterns

Request	`GET https://{fqdn}/NRP/admin/dialpatterns`
Request Content	None.
Optional Query Parameters	pattern, min, max, location, domain, offset, limit
Response	See Dial pattern query response. on page 105

Delete a dial pattern by ID or pattern/min/max/location/domain

Request	`DELETE https://{fqdn}/NRP/admin/dialpatterns/32567` `DELETE https://{fqdn}/NRP/admin/dialpatterns/1/2/15/Basking%20Ridge/ALL`
Request Content	None.
Response	None.

Add a routing policy to an existing dial pattern

Request	`POST https://{fqdn}/NRP/admin/dialpatterns/32768/routingpolicies`

Request Content	`<link hrefName="policy "/>`
	or
	`<link href="https://{fqdn}/NRP/admin/routingpolicies/4"/>`

Response	See Dial pattern response. on page 103

Remove a routing policy from an existing dial pattern

Request	`DELETE https://{fqdn}/NRP/admin/dialpatterns/32768/routingpolicies/294912`
Request Content	None.
Response	See Dial pattern response. on page 103

Post dial pattern with origination dial pattern set name

Request	`POST https://{fqdn}/NRP/admin/dialpatterns/`
Request Content	See Dial pattern request content with Origination Pattern Set Name on page 108
Response	None

Dial pattern request content

Note:

Must include <location> tag with content for a specific location or <locationall/> for ALL locations.

Must include <sipdomain> tag with content for a specific domain or <sipdomainall/> for ALL domains.

XML

Table continues…

```
<dialpattern>
<notes/>
    <deny>false</deny>
    <digitpattern>1</digitpattern>
    <emergency_order>1</emergency_order>
    <maxdigits>36</maxdigits>
    <mindigits>1</mindigits>
    <treatasemergency>false</treatasemergency>
    <locationall/>
    <routingpolicy>
        <link hrefName="policy"/>
    </routingpolicy>
    <sipdomainall/>
</dialpattern>
```

```
<dialpattern>
    <notes/>
    <deny>false</deny>
    <digitpattern>1</digitpattern>
    <emergency_order>1</emergency_order>
    <maxdigits>15</maxdigits>
    <mindigits>2</mindigits>
    <treatasemergency>false</treatasemergency>
    <location>
        <link hrefName="Basking Ridge"/>
    </location>
    <routingpolicy>
        <link hrefName="policy"/>
    </routingpolicy>
    <sipdomain>
        <link hrefName="domain1.com"/>
    </sipdomain>
</dialpattern>
```

JSON

Table continues…

```
{
      "routingpolicy": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/routingpolicies/98304"
          }
        }
      ],
      "locationall": "",
      "sipdomainall": "",
      "digitpattern": "1",
      "mindigits": 1,
      "maxdigits": 36,
      "emergency_order": 1,
      "deny": false,
      "treatasemergency": false,
      "notes": ""
    }

{
      "routingpolicy": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/routingpolicies/98304"
          }
        }
      ],
      "sipdomain": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/domains/4"
        }
      },
      "location": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/locations/32769"
        }
      },
      "digitpattern": "1",
      "mindigits": 2,
      "maxdigits": 15,
      "emergency_order": 1,
      "deny": false,
      "treatasemergency": false,
      "notes": ""
   }
```


Dial pattern response content

XML

Table continues…

```
<dialpattern>
    <notes/>
    <deny>false</deny>
    <digitpattern>1</digitpattern>
    <emergency_order>1</emergency_order>
    <maxdigits>36</maxdigits>
    <mindigits>1</mindigits>
    <treatasemergency>false</treatasemergency>
    <link href="https://{fqdn}/NRP/admin/dialpatterns/1409024" rel="self"/>
    <locationall/>
    <routingpolicy>
        <link href="https://{fqdn}/NRP/admin/routingpolicies/98304" hrefName="policy"
rel="reference" title=""/>
    </routingpolicy>
    <sipdomainall/>
</dialpattern>

<dialpattern>
    <notes/>
    <deny>false</deny>
    <digitpattern>1</digitpattern>
    <emergency_order>1</emergency_order>
    <maxdigits>15</maxdigits>
    <mindigits>2</mindigits>
    <treatasemergency>false</treatasemergency>
    <link href="https://{fqdn}/NRP/admin/dialpatterns/1376256" rel="self"/>
    <location>
        <link href="https://{fqdn}/NRP/admin/locations/32769" hrefName="Basking Ridge"
rel="reference" title=""/>
    </location>
    <routingpolicy>
        <link href="https://{fqdn}/NRP/admin/routingpolicies/98304" hrefName="policy"
rel="reference" title=""/>
    </routingpolicy>
    <sipdomain>
        <link href="https://{fqdn}/NRP/admin/domains/4" hrefName="domain1.com"
rel="reference" title=""/>
    </sipdomain>
</dialpattern>
```

JSON

Table continues…

```
{
      "link": {
        "href": "https://{fqdn}/NRP/admin/dialpatterns/1409024",
        "rel": "self"
      },
      "routingpolicy": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/routingpolicies/98304",
            "title": "",
            "rel": "reference",
            "hrefName": "policy"
          }
        }
      ],
      "locationall": "",
      "sipdomainall": "",
      "digitpattern": "1",
      "mindigits": 1,
      "maxdigits": 36,
      "emergency_order": 1,
      "deny": false,
      "treatasemergency": false,
      "notes": ""
    }
```


Dial pattern query response

XML

Table continues…

```
<dialpatterns count="2" limit="100" offset="0" query="" totalcount="2">
    <dialpattern>
        <notes/>
        <deny>false</deny>
        <digitpattern>1</digitpattern>
        <emergency_order>1</emergency_order>
        <maxdigits>36</maxdigits>
        <mindigits>1</mindigits>
        <treatasemergency>false</treatasemergency>
        <link href="https://{fqdn}/NRP/admin/dialpatterns/1409024" rel="self"/>
        <locationall/>
        <routingpolicy>
            <link href="https://{fqdn}/NRP/admin/routingpolicies/98304"
hrefName="policy" rel="reference" title=""/>
        </routingpolicy>
        <sipdomainall/>
    </dialpattern>
    <dialpattern>
        <notes/>
        <deny>false</deny>
        <digitpattern>1</digitpattern>
        <emergency_order>1</emergency_order>
        <maxdigits>15</maxdigits>
        <mindigits>2</mindigits>
        <treatasemergency>false</treatasemergency>
        <link href="https://{fqdn}/NRP/admin/dialpatterns/1376256" rel="self"/>
        <location>
            <link href="https://{fqdn}/NRP/admin/locations/32769" hrefName="Basking
Ridge" rel="reference" title=""/>
        </location>
        <routingpolicy>
            <link href="https://{fqdn}/NRP/admin/routingpolicies/98304"
hrefName="policy" rel="reference" title=""/>
        </routingpolicy>
        <sipdomain>
            <link href="https://{fqdn}/NRP/admin/domains/4" hrefName="domain1.com"
rel="reference" title=""/>
        </sipdomain>
    </dialpattern>
</dialpatterns>
```

JSON

Table continues…

```
{
  "dialPattern": [
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/dialpatterns/1409024",
        "rel": "self"
      },
      "routingpolicy": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/routingpolicies/98304",
            "title": "",
            "rel": "reference",
            "hrefName": "policy"
          }
        }
      ],
      "locationall": "",
      "sipdomainall": "",
      "digitpattern": "1",
      "mindigits": 1,
      "maxdigits": 36,
      "emergency_order": 1,
      "deny": false,
      "treatasemergency": false,
      "notes": ""
    },
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/dialpatterns/1376256",
        "rel": "self"
      },
      "routingpolicy": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/routingpolicies/98304",
            "title": "",
            "rel": "reference",
            "hrefName": "policy"
          }
        }
      ],
      "sipdomain": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/domains/4",
          "title": "",
          "rel": "reference",
          "hrefName": "domain1.com"
        }
      },
      "location": {
        "link": {
          "href": "https://{fqdn}/NRP/admin/locations/32769",
          "title": "",
          "rel": "reference",
          "hrefName": "Basking Ridge"
        }
      },
      "digitpattern": "1",
      "mindigits": 2,
      "maxdigits": 15,
      "emergency_order": 1,
      "deny": false,
```

```
      "treatasemergency": false,
      "notes": ""
    }
  ],
  "offset": 0,
  "query": "",
  "count": 2,
  "limit": 100,
  "totalcount": 2
}
```


Dial pattern request content with Origination Pattern Set Name

XML
`<dialpattern> <notes><notes/> <deny>false</deny> <digitpattern>9028</digitpattern> <emergency order>1</emergency order> <maxdigits>36</maxdigits> <mindigits>4</mindigits> <originationpatternsetName>test-opt</originationpatternsetName> <treatasemergency>false</treatasemergency> <link href="https://{fqdn}/NRP/admin/dialpatterns/65536" rel="self"/> <location> <link href="https://{fqdn}/NRP/admin/locations/32768" hrefName="mumbai" rel="reference" title=""/> </location> <routingpolicy> <link href="https://{fqdn}/NRP/admin/routingpolicies/32768" hrefName="test-rp" rel="reference" title=""/> </routingpolicy> <sipdomainall></sipdomainall> </dialpattern>`

Origination Dial Pattern Sets

Get a single origination dial pattern set by ID or name

Request	`GET https://{fqdn}/NRP/admin/originationdialpatternsets/32768` `GET https://{fqdn}/NRP/admin/originationdialpatternsets/name/OrginationSet1`
Request Content	None.
Response Content	See Origination dial pattern set response content on page 109.

Retrieve all origination dial pattern sets

Request	`GET https://{fqdn}/NRP/admin/originationdialpatternsets`
Request Content	None.
Optional Query Parameters	name, offset, limit
Response	See Origination dial pattern set get all records response on page 110.

Add an origination dial pattern set

Request	`POST https://{fqdn}/NRP/admin/originationdialpatternsets`
Request Content	See Origination dial pattern set request content on page 109.
Response Content	See Origination dial pattern set response content on page 109.

Modify specified origination dial pattern set fields

Request	`POST https://{fqdn}/NRP/admin/originationdialpatternsets/32768;notes=new%20originationdialpatternset2`
Request Content	None.
Response	See Origination dial pattern set update response on page 111.

Replace an existing origination dial pattern set by ID or name

Request	`PUT https://{fqdn}/NRP/admin/originationdialpatternsets/32768` `PUT https://{fqdn}/NRP/admin/originationdialpatternsets/name/OrginationSet1`
Request Content	See Origination dial pattern set update request on page 110.
Response	See Origination dial pattern set update response on page 111.

Delete an origination dial pattern set by ID or name

Request	`DELETE https://{fqdn}/NRP/admin/originationdialpatternsets/32768` `DELETE https://{fqdn}/NRP/admin/originationdialpatternsets/name/OrginationSet1`
Request Content	None.
Response	None.

Origination dial pattern set request content

XML:

```
<originationdialpatternset><name>OrginationSet1</name><notes>Testing</notes></originationdialpatternset>
```

JSON:

```
{
  "notes": "Testing",
  "name": "OrginationSet1"
}
```

Origination dial pattern set response content

XML:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<originationdialpatternset>
   <notes>Testing</notes>
   <name>OrginationSet2</name>
   <link href="https://10.133.85.91/NRP/admin/originationdialpatternsets/32768" rel="self"/>
</originationdialpatternset>
```

JSON:

```
{
  "notes": "Testing",
  "name": "OrginationSet1",
  "link": {
   "href": "https://10.133.85.91/NRP/admin/originationdialpatternsets/32768",
   "rel": "self"
  }
}
```

Origination dial pattern set get all records response

XML:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<originationdialpatternsets count="2" limit="1000" offset="0" query="" totalcount="2">
   <originationdialpatternset>
       <notes>new originationdialpatternset2</notes>
       <name>originationdialpatternset2</name>
       <link href="https://10.133.85.91/NRP/admin/originationdialpatternsets/32768"
rel="self"/>
   </originationdialpatternset>
   <originationdialpatternset>
       <notes>Testing from GUI</notes>
       <name>Test-OrginationSet-record</name>
       <link href="https://10.133.85.91/NRP/admin/originationdialpatternsets/65538"
rel="self"/>
   </originationdialpatternset>
</originationdialpatternsets>
```

JSON:

```
{
  "query": "",
  "totalcount": 2,
  "offset": 0,
  "limit": 1000,
  "count": 2,
  "originationdialpatternset": [
     {
        "notes": "new originationdialpatternset2",
        "name": "originationdialpatternset2",
        "link": {
            "href": "https://10.133.85.91/NRP/admin/originationdialpatternsets/32768",
            "rel": "self"
        }
     },
     {
        "notes": "Testing from GUI",
        "name": "Test-OrginationSet-record",
        "link": {
            "href": "https://10.133.85.91/NRP/admin/originationdialpatternsets/65538",
            "rel": "self"
        }
     }
  ]
}
```

Origination dial pattern set update request

XML:

Table continues…

```
<originationdialpatternset><name>originationdialpatternset2</name><notes>new
originationdialpatternset2</notes></originationdialpatternset>
```

JSON:

```
{
  "notes": "new originationdialpatternset2",
  "name": "originationdialpatternset2"
}
```

Origination dial pattern set update response

XML:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<originationdialpatternset>
 <notes>new originationdialpatternset2</notes>
 <name>originationdialpatternset2</name>
 <link href="https://10.133.85.91/NRP/admin/originationdialpatternsets/32768"
rel="self"/>
</originationdialpatternset>
```

JSON:

```
{
 "notes": "new originationdialpatternset2",
 "name": "originationdialpatternset2",
 "link": {
     "href": "https://10.133.85.91/NRP/admin/originationdialpatternsets/32768",
     "rel": "self"
 }
}
```

Origination Dial Patterns

Retrieve all origination dial patterns

Request	`GET https://{fqdn}/NRP/admin/originationdialpatterns`
Request Content	None.
Optional Query Parameters	pattern, min, max, domain, offset, limit
Response	See Origination dial pattern query response on page 113.

Get a single origination dial pattern by ID or pattern/min/max/domain

Request	`GET https://{fqdn}/NRP/admin/originationdialpatterns/32769` `GET https://{fqdn}/NRP/admin/originationdialpatterns/3131/4/36/avaya.com`
Request Content	None.
Response Content	See Origination dial pattern response on page 112.

Query origination dial patterns for particular origination pattern set

Request	`GET https://{fqdn}/NRP/admin/originationdialpatterns?digitmaporiginationset=originpattern`
Request Content	None.
Response Content	See Origination dial pattern response on page 112.

Add an origination dial pattern

Request	`POST https://{fqdn}/NRP/admin/originationdialpatterns`
Request Content	See Origination dial pattern request on page 116.
Response Content	See Origination dial pattern response on page 112.

Replace an existing origination dial pattern by ID or pattern/min/max/domain

Request	`PUT https://{fqdn}/NRP/admin/originationdialpatterns/32567` `PUT https://{fqdn}/NRP/admin/originationdialpatterns/999/3/33/ALL`
Request Content	See Origination dial pattern request for replace on page 117.
Response	See Origination dial pattern response for replace on page 117.

Delete an origination dial pattern by ID or pattern/min/max/domain

Request	`DELETE https://{fqdn}/NRP/admin/originationdialpatterns/163841` `DELETE https://{fqdn}/NRP/admin/originationdialpatterns/999/3/33/test.com`
Request Content	None.
Response	None.

Note:

You must enable Flexible Routing.

Dial pattern request content must include `<sipdomain>` tag with content for a specific domain or `<sipdomainall/>` for ALL domains.

Origination dial pattern response

XML:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<originationdialpattern>
  <notes></notes>
  <digitpattern>3131</digitpattern>
  <maxdigits>36</maxdigits>
  <mindigits>4</mindigits>
  <digitmaporiginationsetName>originpattern</digitmaporiginationsetName>
  <link href="https://{fqdn}/NRP/admin/originationdialpatterns/32769" rel="self"/>
  <sipdomain>
  <link href="https://{fqdn}/NRP/admin/domains/1" hrefName="avaya.com" rel="reference"
title=""/>
  </sipdomain>
</originationdialpattern>
```

JSON:

Table continues…

```
{
 "notes": "",
  "digitpattern": "3131",
  "mindigits": 4,
  "maxdigits": 36,
  "link": {
  "href": "https://{fqdn}/NRP/admin/originationdialpatterns/32769",
  "rel": "self"
  },
  "digitmaporiginationsetName": "originpattern",
  "sipdomain": {
  "link": {
  "href": "https://{fqdn}/NRP/admin/domains/1",
  "hrefName": "avaya.com",
  "rel": "reference",
  "title": ""
  }
  }
}
```

Origination dial pattern query response

XML:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<originationdialpatterns count="3" limit="1000" offset="0" query="" totalcount="3">
  <originationdialpattern>
  <notes></notes>
  <digitpattern>3131</digitpattern>
  <maxdigits>36</maxdigits>
  <mindigits>4</mindigits>
  <digitmaporiginationsetName>originpattern</digitmaporiginationsetName>
  <link href="https://{fqdn}/NRP/admin/originationdialpatterns/32769" rel="self"/>
  <sipdomain>
  <link href="https://{fqdn}/NRP/admin/domains/1" hrefName="avaya.com" rel="reference"
title=""/>
  </sipdomain>
  </originationdialpattern>
  <originationdialpattern>
  <notes>test</notes>
  <digitpattern>1234</digitpattern>
  <maxdigits>36</maxdigits>
  <mindigits>4</mindigits>
  <digitmaporiginationsetName>originpattern</digitmaporiginationsetName>
  <link href="https://{fqdn}/NRP/admin/originationdialpatterns/32771" rel="self"/>
  <sipdomain>
  <link href="https://{fqdn}/NRP/admin/domains/1" hrefName="avaya.com" rel="reference"
title=""/>
  </sipdomain>
  </originationdialpattern>
  <originationdialpattern>
  <notes></notes>
  <digitpattern>+</digitpattern>
  <maxdigits>36</maxdigits>
  <mindigits>1</mindigits>
  <digitmaporiginationsetName>test</digitmaporiginationsetName>
  <link href="https://{fqdn}/NRP/admin/originationdialpatterns/131075" rel="self"/>
  <sipdomainall></sipdomainall>
  </originationdialpattern>
</originationdialpatterns>
```

JSON:

Table continues…

```
{
  "query": "",
  "totalcount": 3,
  "offset": 0,
  "limit": 1000,
  "count": 3,
  "originationdialpattern": [
  {
  "notes": "",
  "digitpattern": "3131",
  "mindigits": 4,
  "maxdigits": 36,
  "link": {
  "href": "https://{fqdn}/NRP/admin/originationdialpatterns/32769",
  "rel": "self"
  },
  "digitmaporiginationsetName": "originpattern",
  "sipdomain": {
  "link": {
  "href": "https://{fqdn}/NRP/admin/domains/1",
  "hrefName": "avaya.com",
  "rel": "reference",
  "title": ""
  }
  }
  },
  {
  "notes": "test",
  "digitpattern": "1234",
  "mindigits": 4,
  "maxdigits": 36,
  "link": {
  "href": "https://{fqdn}/NRP/admin/originationdialpatterns/32771",
  "rel": "self"
  },
  "digitmaporiginationsetName": "originpattern",
  "sipdomain": {
  "link": {
  "href": "https://{fqdn}/NRP/admin/domains/1",
  "hrefName": "avaya.com",
  "rel": "reference",
  "title": ""
  }
  }
  },
  {
  "notes": "",
  "digitpattern": "+",
  "mindigits": 1,
  "maxdigits": 36,
  "link": {
  "href": "https://{fqdn}/NRP/admin/originationdialpatterns/131075",
  "rel": "self"
  },
  "digitmaporiginationsetName": "test",
  "sipdomainall": ""
  }
  ]
}
```

Origination dial pattern response for query by origination dial pattern set

XML:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<originationdialpatterns count="2" limit="1000" offset="0" query="?
digitmaporiginationset=originpattern" totalcount="2">
  <originationdialpattern>
  <notes></notes>
  <digitpattern>3131</digitpattern>
  <maxdigits>36</maxdigits>
  <mindigits>4</mindigits>
  <digitmaporiginationsetName>originpattern</digitmaporiginationsetName>
  <link  href="https://{fqdn}/NRP/admin/originationdialpatterns/32769"  rel="self"/>
  <sipdomain>
  <link href="https://{fqdn}/NRP/admin/domains/1" hrefName="avaya.com" rel="reference"
title=""/>
  </sipdomain>
  </originationdialpattern>
  <originationdialpattern>
  <notes>test</notes>
  <digitpattern>1234</digitpattern>
  <maxdigits>36</maxdigits>
  <mindigits>4</mindigits>
  <digitmaporiginationsetName>originpattern</digitmaporiginationsetName>
  <link  href="https://{fqdn}/NRP/admin/originationdialpatterns/32771"  rel="self"/>
  <sipdomain>
  <link href="https://{fqdn}/NRP/admin/domains/1" hrefName="avaya.com" rel="reference"
title=""/>
  </sipdomain>
  </originationdialpattern>
</originationdialpatterns>
```

JSON:

Table continues…

```
{
  "query": "?digitmaporiginationset=originpattern",
  "totalcount": 2,
  "offset": 0,
  "limit": 1000,
  "count": 2,
  "originationdialpattern": [
  {
  "notes": "",
  "digitpattern": "3131",
  "mindigits": 4,
  "maxdigits": 36,
  "link": {
  "href": "https://{fqdn}/NRP/admin/originationdialpatterns/32769",
  "rel": "self"
  },
  "digitmaporiginationsetName": "originpattern",
  "sipdomain": {
  "link": {
  "href": "https://{fqdn}/NRP/admin/domains/1",
  "hrefName": "avaya.com",
  "rel": "reference",
  "title": ""
  }
  }
  },
  {
  "notes": "test",
  "digitpattern": "1234",
  "mindigits": 4,
  "maxdigits": 36,
  "link": {
  "href": "https://{fqdn}/NRP/admin/originationdialpatterns/32771",
  "rel": "self"
  },
  "digitmaporiginationsetName": "originpattern",
  "sipdomain": {
  "link": {
  "href": "https://{fqdn}/NRP/admin/domains/1",
  "hrefName": "avaya.com",
  "rel": "reference",
  "title": ""
  }
  }
  }
  ]
}
```


Origination dial pattern request

XML:

```
<originationdialpattern>
  <notes>test</notes>
  <digitpattern>999</digitpattern>
  <maxdigits>36</maxdigits>
  <mindigits>3</mindigits>
  <digitmaporiginationsetName>originpattern</digitmaporiginationsetName>
  <sipdomain>
  <link href="https://{fqdn}/NRP/admin/domains/1" hrefName="avaya.com" rel="reference"
title=""/>
  </sipdomain>
</originationdialpattern>
```

Origination dial pattern response

XML:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<originationdialpattern>
  <notes>test</notes>
  <digitpattern>999</digitpattern>
  <maxdigits>36</maxdigits>
  <mindigits>3</mindigits>
  <digitmaporiginationsetName>originpattern</digitmaporiginationsetName>
  <link href="https://{fqdn}/NRP/admin/originationdialpatterns/163840" rel="self"/>
  <sipdomain>
  <link href="https://{fqdn}/NRP/admin/domains/1" hrefName="avaya.com" rel="reference"
title=""/>
  </sipdomain>
</originationdialpattern>
```

Origination dial pattern request for replace

XML:

```
<originationdialpattern>
  <notes>test</notes>
  <digitpattern>666</digitpattern>
  <maxdigits>33</maxdigits>
  <mindigits>3</mindigits>
  <digitmaporiginationsetName>originpattern</digitmaporiginationsetName>
  <sipdomainall></sipdomainall>
</originationdialpattern>
```

Origination dial pattern response for replace

XML:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<originationdialpattern>
  <notes>test</notes>
  <digitpattern>666</digitpattern>
  <maxdigits>33</maxdigits>
  <mindigits>3</mindigits>
  <digitmaporiginationsetName>originpattern</digitmaporiginationsetName>
  <link href="https://{fqdn}/NRP/admin/originationdialpatterns/32769" rel="self"/>
  <sipdomainall></sipdomainall>
</originationdialpattern>
```

Regular Expressions

Get a single regular expression by ID or pattern

Request	`GET https://{fqdn}/NRP/admin/regularexpressions/32567` `GET https://{fqdn}/NRP/admin/regularexpressions/pattern/1`
Request Content	None.
Response Content	See Regular expression response. on page 121

Add a regular expression

Request	`POST https://{fqdn}/NRP/admin/regularexpressions`
Request Content	See Regular expression request. on page 120
Response Content	See Regular expression response. on page 121

Modify specified regular expression fields

Request	`POST https://{fqdn}/NRP/admin/regularexpressions/32567;deny=true;rankorder=5;pattern=11`
Request Content	None.
Response	See Regular expression response. on page 121

Replace an existing regular expression by ID or pattern

Request	`PUT https://{fqdn}/NRP/admin/regularexpressions/32567` `PUT https://{fqdn}/NRP/admin/regularexpressions/pattern/1`
Request Content	See Regular expression request. on page 120
Response	See Regular expression response. on page 121

Retrieve all regular expressions

Request	`GET https://{fqdn}/NRP/admin/regularexpressions`
Request Content	None.
Optional Query Parameters	pattern, offset, limit
Response	See Regular expression query response. on page 122

Delete a regular expression by ID or pattern

Request	`DELETE https://{fqdn}/NRP/admin/regularexpressions/32567` `DELETE https://{fqdn}/NRP/admin/regularexpressions/pattern/1`
Request Content	None.
Response	None.

Add a routing policy to an existing regular expression

Request	`POST https://{fqdn}/NRP/admin/regularexpressions/32768/routingpolicies`

Request Content	`<link hrefName="policy "/>`
	`or`
	`<link href="https://{fqdn}/NRP/admin/routingpolicies/4"/>`

Response	See Regular expression response. on page 121

Remove a routing policy from an existing regular expression

Request	`DELETE https://{fqdn}/NRP/admin/regularexpressions/32768/routingpolicies/294912`

Table continues…

Request Content	None.
Response	See Regular expression response. on page 121

Add location to an existing regular expression

Request	`POST https://{fqdn}/NRP/admin/regularexpressions/229376/location`

Request Content	`<link hrefName="pune"/>`
	or
	`<link href="https://{fqdn}/NRP/admin/locations/32768" hrefName="pune" rel="reference" title=""/>`

Response	See Regular expression add location response

Delete location from an existing regular expression

Request	`DELETE https://{fqdn}/NRP/admin/regularexpressions/229376/location`
Request Content	None
Response	See Regular expression delete location response

Add condition to an existing regular expression

Request	`POST https://{fqdn}/NRP/admin/regularexpressions/229376/condition`

Request Content	`<link hrefName="condition1"/>`
	or
	`<link href="https://{fqdn}/NRP/admin/locations/98305"/>`

Response	See Regular expression add condition response

Delete condition from an existing regular expression

Request	`DELETE https://{fqdn}/NRP/admin/regularexpressions/229376/condition`
Request Content	None
Response	See Regular expression delete condition response

Add a Dial Pattern Origination Set to an existing regular expression

Request	`POST https://{fqdn}/NRP/admin/regularexpressions/229376/originationdialpatternset`
Request Content	`<link hrefName="origdialpatternset-1"/> or` `<link href="https://{fqdn}/NRP/admin/originationdialpatternsets/1"/>`
Response	See Regular expression response. on page 121

Delete a Dial Pattern Origination Set to an existing regular expression

Request	`DELETE https://{fqdn}/NRP/admin/regularexpressions/229376/originationdialpatternset`
Request Content	None
Response	See Regular expression response. on page 121

Regular expression request content

XML

```
<regularexpression>
  <notes></notes>
  <deny>false</deny>
  <pattern>1</pattern>
  <rankorder>0</rankorder>
  <routingpolicy>
......<link href="hrefName="policy"/>
  </routingpolicy>
  <location>
      <link hrefName="Denver"/>
  </location>
  <condition>
      <link hrefName="condition-1"/>
  </condition>
  <originationdialpatternset>
      <link  hrefName="orig-dial-pattern-set-1"/>
  </originationdialpatternset>
</regularexpression>
```

JSON

```
test
 {
  "routingpolicy": [
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/routingpolicies/98304"
      }
    }
  ],
  "pattern": "5",
  "rankorder": 6,
  "deny": false,
  "notes": "",
  "location": [
    {
      "link": {
        "hrefName": "Denver"
      }
    }
  ],
  "condition": [
    {
      "link": {
        "hrefName": "condition-1"
      }
    }
  ],
  "originationdialpatternset": [
    {
      "link": {
        "hrefName":  "orig-dial-pattern-set-1"
      }
    }
  ]
}
```

Regular expression response content

XML

```
<regularexpression>
    <notes/>
    <deny>false</deny>
    <pattern>2[56].*</pattern>
    <rankorder>0</rankorder>
    <link href="https://{fqdn}/NRP/admin/regularexpressions/163840" rel="self"/>
    <condition>
        <link href="https://{fqdn}/NRP/admin/conditions/32770" hrefName="condition1"
            rel="reference" title="" />
    </condition>
    <link href="https://{fqdn}/NRP/admin/regularexpressions/229376"
        rel="self" />
    <location>
        <link href="https://{fqdn}/NRP/admin/locations/32768" hrefName="pune"
            rel="reference" title="" />
    </location>
    <originationdialpatternset>
        <link href="https://{fqdn}/NRP/admin/originationdialpatternsets/1" hrefName="orig-dial-
pattern-set-1"
            rel="reference" title="Flexible routing" />
    </originationdialpatternset>
    <routingpolicy>
        <link href="https://{fqdn}/NRP/admin/routingpolicies/
98304" hrefName="policy" rel="reference" title=""/>
    </routingpolicy>
</regularexpression>
```

JSON

Table continues…

```
{
  "notes": "",
  "pattern": "1",
  "rankorder": 0,
  "deny": false,
  "link": {
    "href": "https://{fqdn}/NRP/admin/regularexpressions/163840",
    "rel": "self"
  },
  "location": {
    "link": {
      "href": "https://{fqdn}/NRP/admin/locations/32768",
      "hrefName": "pune",
      "rel": "reference",
      "title": ""
    }
  },
  "condition": {
    "link": {
      "href": "https://{fqdn}/NRP/admin/conditions/1",
      "hrefName": "condition1",
      "rel": "reference",
      "title": ""
    }
  },
  "originationdialpatternset": {
    "link": {
      "href": "https://{fqdn}/NRP/admin/originationdialpatternsets/1",
      "hrefName": "orig-dial-pattern-set-1",
      "rel": "reference",
      "title": "Flexible routing"
    }
  },
  "routingpolicy": [{
    "link": {
      "href": "https://{fqdn}/NRP/admin/routingpolicies/98304",
      "hrefName": "policy",
      "rel": "reference",
      "title": ""
    }
  }]
}
```


Regular expression query response

XML


```
<regularexpressions count="1" limit="100" offset="0" query="" totalcount="1">
    <regularexpression>
        <notes/>
        <deny>false</deny>
        <pattern>1</pattern>
        <rankorder>0</rankorder>
        <link href="https://{fqdn}/NRP/admin/regularexpressions/163840" rel="self"/>
        <routingpolicy>
            <link href="https://{fqdn}/NRP/admin/routingpolicies/98304"
hrefName="policy" rel="reference" title=""/>
        </routingpolicy>
    </regularexpression>
</regularexpressions>
```


JSON

Table continues…

```
{
  "regularexpression": [
    {
      "link": {
        "href": "https://{fqdn}/NRP/admin/regularexpressions/163840",
        "rel": "self"
      },
      "routingpolicy": [
        {
          "link": {
            "href": "https://{fqdn}/NRP/admin/routingpolicies/98304",
            "title": "",
            "rel": "reference",
            "hrefName": "policy"
          }
        }
      ],
      "pattern": "1",
      "rankorder": 0,
      "deny": false,
      "notes": ""
    }
  ],
  "offset": 0,
  "query": "",
  "count": 1,
  "limit": 100,
  "totalcount": 1
}
```


SIP Entity with Edge Topology

Add Enterprise SIP Entity

Request	`POST https://{fqdn}/NRP/admin/sipentities`
Request Content	See SIP entity request below
Response Content	See SIP entity response below.

XML SIP entity request(Enterprise)

XML

```
    <sipentity>
    <entitytype>ASM</entitytype>
    <fqdnoripaddr>12.2.3.61</fqdnoripaddr>
    <ipaddrFamilyType>IPv4</ipaddrFamilyType>
    <ipaddrTolerant>true</ipaddrTolerant>
    <name>RestWSEnterpriseSM</name>
    <network topology>enterprise</network topology>
    <timezoneName>America/Fortaleza</timezoneName>
    </sipentity>
```

XML SIP Entity Response (Enterprise)

XML

```
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
<sipentity>
<entitytype>ASM</entitytype>
<fqdnoripaddr>11.2.3.6</fqdnoripaddr>
<ipaddrFamilyType>IPv4</ipaddrFamilyType>
<ipaddrTolerant>true</ipaddrTolerant>
<name>RestWSEnterpriseSM</name>
<network topology>edge core</network topology>
<sbc_sip_ipaddr>2.54.16.5</sbc_sip_ipaddr>
<sip fqdn>RestWSEnterpriseSM.com</sip fqdn>
<cac capable>false</cac capable>
<cdrSetting>egress</cdrSetting>
<credentialname/>
<do monitoring>use-instance</do monitoring>
<loop detect interval msec>200</loop detect interval msec>
<loop detect mode>on</loop detect mode>
<loop detect threshold>5</loop detect threshold>
<monitor okresponses>1</monitor okresponses>
<monitor proactive secs>900</monitor proactive secs>
<monitor reactive secs>120</monitor reactive secs>
<monitor_retries>1</monitor_retries>
<securable>false</securable>
<timer bf secs>4</timer bf secs>
<timezoneName>America/Fortaleza</timezoneName>
<userfc3263>false</userfc3263>
<linkhref="https://10.133.85.93/NRP/admin/sipentities/458755"rel="self"/>
</sipentity>
```

Add Edge Core SIP Entity

Request	`POST https://{fqdn}/NRP/admin/sipentities`
Request Content	See SIP entity request below
Response Content	See SIP entity response below

XML – SIP entity request (Edge Core)

XML Request

```
    <sipentity>
    <entitytype>ASM</entitytype>
    <fqdnoripaddr>1.2.3.6</fqdnoripaddr>
    <ipaddrFamilyType>IPv4</ipaddrFamilyType>
    <ipaddrTolerant>true</ipaddrTolerant>
    <name>RestWSEdgeCoreSM</name>
    <network topology>edge core</network topology>
    <sbc_sip_ipaddr>2.54.6.5</sbc_sip_ipaddr>
      <sip fqdn>RestWSEdgeCoreSM.com</sip fqdn>
    <timezoneName>America/Fortaleza</timezoneName>
    </sipentity>
```

XML – SIP entity response (Edge Core)

XML Response

```
    <?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
    <sipentity>
    <entitytype>ASM</entitytype>
    <fqdnoripaddr>1.2.3.6</fqdnoripaddr>
    <ipaddrFamilyType>IPv4</ipaddrFamilyType>
    <ipaddrTolerant>true</ipaddrTolerant>
    <name>RestWSEdgeCoreSM</name>
    <network topology>edge core</network topology>
    <sbc sip ipaddr>2.54.6.5</sbc sip ipaddr>
    <sip fqdn>RestWSEdgeCoreSM.com</sip fqdn>
    <cac capable>false</cac capable>
    <cdrSetting>egress</cdrSetting>
    <credentialname/>
    <do monitoring>use-instance</do monitoring>
    <loop detect interval msec>200</loop detect interval msec>
    <loop detect mode>on</loop detect mode>
    <loop detect threshold>5</loop detect threshold>
    <monitor okresponses>1</monitor okresponses>
    <monitor proactive secs>900</monitor proactive secs>
    <monitor reactive secs>120</monitor reactive secs>
    <monitor retries>1</monitor retries>
    <securable>false</securable>
    <timer bf secs>4</timer bf secs>
    <timezoneName>America/Fortaleza</timezoneName>
    <userfc3263>false</userfc3263>
    <linkhref="https://10.133.85.93/NRP/admin/sipentities/458755"rel="self"/>
    </sipentity>
```

Add Edge Branch SIP Entity

Request	`POST https://{fqdn}/NRP/admin/sipentities`
Request Content	See SIP entity request below.
Response Content	See SIP entity response below.

XML – SIP entity request (Edge Branch)

XML Request

```
    <sipentity>
    <entitytype>ASM</entitytype>
    <fqdnoripaddr>1.2.3.61</fqdnoripaddr>
    <ipaddrFamilyType>IPv4</ipaddrFamilyType>
    <ipaddrTolerant>true</ipaddrTolerant>
    <name>RestWSEdgeBranchSM</name>
    <network topology>edge branch</network topology>
    <sbc_sip_ipaddr>2.54.6.15</sbc_sip_ipaddr>
    <timezoneName>America/Fortaleza</timezoneName>
    </sipentity>
```

XML – SIP entity response (Edge Branch)

XML Response

```
    <?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
    <sipentity>
    <entitytype>ASM</entitytype>
    <fqdnoripaddr>1.2.3.61</fqdnoripaddr>
    <ipaddrFamilyType>IPv4</ipaddrFamilyType>
    <ipaddrTolerant>true</ipaddrTolerant>
    <name>RestWSEdgeBranchSM</name>
    <network topology>edge branch</network topology>
    <sbc sip ipaddr>2.54.6.15</sbc sip ipaddr>
    <cac capable>false</cac capable>
    <cdrSetting>egress</cdrSetting>
    <credentialname/>
    <do monitoring>use-instance</do monitoring>
    <loop detect interval msec>200</loop detect interval msec>
    <loop detect mode>on</loop detect mode>
    <loop detect threshold>5</loop detect threshold>
    <monitor okresponses>1</monitor okresponses>
    <monitor proactive secs>900</monitor proactive secs>
    <monitor_reactive_secs>120</monitor_reactive_secs>
    <monitor retries>1</monitor retries>
    <securable>false</securable>
    <timer bf secs>4</timer bf secs>
    <timezoneName>America/Fortaleza</timezoneName>
    <userfc3263>false</userfc3263>
    <linkhref="https://10.133.85.93/NRP/admin/sipentities/458756"rel="self"/>
    </sipentity>
```

Chapter 5: Resource Java JAX-RS Examples

Resource Java Jax-RS Examples

Following are some simplistic code snippets that provide examples of Routing JAXB mapping examples for Java clients. Examples provide Java analogs for the more complete XML and JSON reference examples. Before running any of these samples, ensure that at least one of each resource type administered through Routing GUI.

Production code is more robust. It can account for reusable connection management, consistent client setup, consistent request media type management, and robust error handling.

JAX-RS Client Setup

Some of the code examples are essentially run able, but need a helper class for Client setup and error handling. The Client setup is dependent on the underlying jax-rs provider. Key aspects to think about for setting up a jax-rs Client:

- SSL/TLS configuration, all URLs need to begin with https://
- Basic Authentication mechanism and injecting login/password
- Scoping Client instances appropriate for the application use.

A generalized Client creation routine might look as follows in Oracle Jersey 2.6 Note: SSL setup differs between Jersey versions. JBoss RESTEasy and Apache CXF require notably different approaches for configuring clients.

```
static public Client getClient() {
    SslConfigurator sslConfig = SslConfigurator.newInstance().trustStoreFile("./
resources/sample.jks").trustStorePassword("sample").securityProtocol("TLS");
    SSLContext sslContext = sslConfig.createSSLContext();
    Client client =
ClientBuilder.newBuilder().sslContext(sslContext).register(getAuthFilter()).build();
    return client;
}
```

A generalized, simple HTTP basic authentication filter that does not handle preemptive requests authorization challenge and session cookie handling.

```
public static class BasicAuth implements ClientRequestFilter {
    private final String user;
    private final String password;
    public BasicAuth(String user, String password) {
        this.user = user;
        this.password = password;
    }
    public void filter(ClientRequestContext requestContext) throws IOException {
        MultivaluedMap<String, Object> headers = requestContext.getHeaders();
```

```
final String basicAuthentication = getBasicAuthentication();
        headers.add("Authorization", basicAuthentication);
    }
    private String getBasicAuthentication() {
        String token = this.user + ":" + this.password;
        try {
            return "BASIC " +
DatatypeConverter.printBase64Binary(token.getBytes("UTF-8"));
        } catch (Exception ex) {
            throw new IllegalStateException("Cannot encode with UTF-8", ex);
        }
    }
}
```

Domains

Domain query and single GET

```
Client client = Common.getClient();
/*
 * Query all domains.
 */
WebTarget target = client.target(Common.URLBASE).path("domains");
Response response = target.request(MediaType.APPLICATION_XML).get();
Common.checkError(response);
/*
 * In this case we are manually telling what entity type is to be
 * unmarshalled. Many clients allow registration of the JAXB mapping
 * classes so this is not needed.
 */
Domains domains = response.readEntity(Domains.class);
System.out.println("Received " + domains.getCount() + " of "
        + domains.getTotalcount() + " domains");

/*
 * Now take first domain found and GET based on reference URI.
 */
Domain domain = domains.getList().get(0);
target = client.target(domain.getLink().getHref());
response = target.request(MediaType.APPLICATION_XML).get();
Common.checkError(response);
Domain domain2 = response.readEntity(Domain.class);
System.out.println("Received " + domain2.getName());
System.out.println("Domain has ETag: "
        + response.getHeaderString("ETag"));
```

Domain Add, Modify, Delete

```
Client client = Common.getClient();
/*
 * Add a new domain, track ETag to force possible optimistic lock
 */
Domain domain = new Domain();
domain.setName("new.com");
domain.setNotes("Notes for a new domain");
WebTarget target = client.target(Common.URLBASE).path("domains");
Builder request = target.request(MediaType.APPLICATION_XML).accept(
        MediaType.APPLICATION_XML);
Response response = request.post(Entity.xml(domain));
Common.checkError(response);
String etag = response.getHeaderString("ETag");
```

```
Domain domainAdd = response.readEntity(Domain.class);
System.out.println("Domain " + domainAdd.getName() + " added at URI "
        + domainAdd.getLink().getHref());
/*
 * Modify a domain, for java client it is simpler to fetch full domain
 * entity and PUT "replace" then build URI with matrix parameters.
 *
 * Domain.getLink() is only populated on server side.
 */
target = client.target(domainAdd.getLink().getHref());
request = target.request(MediaType.APPLICATION_XML).accept(
        MediaType.APPLICATION_XML);
request.header("ETag", etag);
domain.setNotes("A different and modified note");
response = request.put(Entity.xml(domain));
Common.checkError(response);
Domain domainModified = response.readEntity(Domain.class);
/*
 * Now delete. No payload is returned. ETag is ignored for deletes.
 */
target = client.target(domainModified.getLink().getHref());
request = target.request(MediaType.APPLICATION_XML).accept(
        MediaType.APPLICATION_XML);
response = request.delete();
Common.checkError(response);
/*
 * Now a get query based on name, should be no results.
 */
target = client.target(Common.URLBASE).path("domains");
target.queryParam("name", "new.com");
request = target.request(MediaType.APPLICATION_XML).accept(
        MediaType.APPLICATION_XML);
response = request.get();
Domains domains = response.readEntity(Domains.class);
System.out.println("We should get a 200 return" + response.getStatus()
        + " and 0 results in query: " + domains.getCount());
```

Locations

Location query and single GET

```
Client client = Common.getClient();
/*
 * Query all locations.
 */
WebTarget target = client.target(Common.URLBASE).path("locations");
Response response = target.request(MediaType.APPLICATION_XML).get();
Common.checkError(response);
/*
 * In this case we are manually telling what entity type is to be
 * unmarshalled. Many clients allow registration of the JAXB mapping
 * classes so this is not needed.
 */
Locations locations = response.readEntity(Locations.class);
System.out.println("Received " + locations.getCount() + " of "
        + locations.getTotalcount() + " locations");
/*
 * Now take first location found and GET based on reference URI.
 */
```

```
Location location = locations.getList().get(0);
target = client.target(location.getLink().getHref());
response = target.request(MediaType.APPLICATION_XML).get();
Common.checkError(response);
Location location2 = response.readEntity(Location.class);
System.out.println("Received " + location2.getName());
System.out.println("Location has ETag: "
        + response.getHeaderString("ETag"));
```

Location add, modify, delete

```
Client client = Common.getClient();
/*
 * Add a new location, and location pattern. Track ETag to force possible optimistic
lock.
 * If you look at the GUI, you will see numerous required fields which
 * have default values as seen on the GUI are implicitly set by the REST
 * interface in a similar fashion.
 */
Location location = new Location();
location.setName("REST location");
location.setNotes("Notes for a new location");

/*
 * And now add a pattern. Remember if you want to remove a pattern
 * or modify pattern you have to work on that sub resource URL directly.
 *
 * See segment below for deletion.
 */
LocationPattern pattern = new LocationPattern();
pattern.setIpaddresspattern("192.168.*");
List<LocationPattern> patterns = new ArrayList<LocationPattern>();
patterns.add(pattern);
location.setLocationPatterns(patterns);
WebTarget target = client.target(Common.URLBASE).path("locations");
Builder request = target.request(MediaType.APPLICATION_XML).accept(
        MediaType.APPLICATION_XML);
Response response = request.post(Entity.xml(location));
Common.checkError(response);
String etag = response.getHeaderString("ETag");
Location locationAdd = response.readEntity(Location.class);
System.out.println("Location " + locationAdd.getName() + " added at URI "
        + locationAdd.getLink().getHref());
/*
 * Modify a location, for java client it is simpler to fetch full location
 * entity and PUT "replace" then build URI with matrix parameters.
 *
 * Location.getLink() is only populated on server side.
 */
target = client.target(locationAdd.getLink().getHref());
request = target.request(MediaType.APPLICATION_XML).accept(
        MediaType.APPLICATION_XML);
request.header("ETag", etag);
location.setNotes("A different and modified note");
response = request.put(Entity.xml(location));
Common.checkError(response);
Location locationModified = response.readEntity(Location.class);

/*
 * Let's now delete just the ListenPort sub resource
 */
target = client.target(locationModified.getLink().getHref());
request = target.request(MediaType.APPLICATION_XML).accept(
        MediaType.APPLICATION_XML);
response = request.delete();
```

```
Common.checkError(response);
/*
 * Now delete. No payload is returned. ETag is ignored for deletes.
 */
target = client.target(locationModified.getLink().getHref());
request = target.request(MediaType.APPLICATION_XML).accept(
        MediaType.APPLICATION_XML);
response = request.delete();
Common.checkError(response);
/*
 * Now a get query based on name, should be no results.
 */
target = client.target(Common.URLBASE).path("locations");
target.queryParam("name", "new.com");
request = target.request(MediaType.APPLICATION_XML).accept(
        MediaType.APPLICATION_XML);
response = request.get();
Locations locations = response.readEntity(Locations.class);
System.out.println("We should get a 200 return" + response.getStatus()
        + " and 0 results in query: " + locations.getCount());
```

Adaptations

Adaptation query and single GET

```
Client client = Common.getClient();
/*
 * Query all adaptations.
 */
WebTarget target = client.target(Common.URLBASE).path("adaptations");
Response response = target.request(MediaType.APPLICATION_XML).get();
Common.checkError(response);
/*
 * In this case we are manually telling what entity type is to be
 * unmarshalled. Many clients allow registration of the JAXB mapping
 * classes so this is not needed.
 */
Adaptations adaptations = response.readEntity(Adaptations.class);
System.out.println("Received " + adaptations.getCount() + " of "
        + adaptations.getTotalcount() + " adaptations");
/*
 * Now take first adaptation found and GET based on reference URI.
 */
Adaptation adaptation = adaptations.getList().get(0);
target = client.target(adaptation.getLink().getHref());
response = target.request(MediaType.APPLICATION_XML).get();
Common.checkError(response);
Adaptation adaptation2 = response.readEntity(Adaptation.class);
System.out.println("Received " + adaptation2.getName());
System.out.println("Adaptation has ETag: "
        + response.getHeaderString("ETag"));
```

Adaptation add, modify, delete

```
Client client = Common.getClient();
/*
 * Add a new location, and location pattern. Track ETag to force possible optimistic
lock.
 * If you look at the GUI, you will see numerous required fields which
 * have default values as seen on the GUI are implicitly set by the REST
 * interface in a similar fashion.
```

```
 */
Location location = new Location();
location.setName("REST location");
location.setNotes("Notes for a new location");

/*
 * And now add a pattern. Remember if you want to remove a pattern
 * or modify pattern you have to work on that sub resource URL directly.
 *
 * See segment below for deletion.
 */
LocationPattern pattern = new LocationPattern();
pattern.setIpaddresspattern("192.168.*");
List<LocationPattern> patterns = new ArrayList<LocationPattern>();
patterns.add(pattern);
location.setLocationPatterns(patterns);
WebTarget target = client.target(Common.URLBASE).path("locations");
Builder request = target.request(MediaType.APPLICATION_XML).accept(
        MediaType.APPLICATION_XML);
Response response = request.post(Entity.xml(location));
Common.checkError(response);
String etag = response.getHeaderString("ETag");
Location locationAdd = response.readEntity(Location.class);
System.out.println("Location " + locationAdd.getName() + " added at URI "
        + locationAdd.getLink().getHref());
/*
 * Modify a location, for java client it is simpler to fetch full location
 * entity and PUT "replace" then build URI with matrix parameters.
 *
 * Location.getLink() is only populated on server side.
 */
target = client.target(locationAdd.getLink().getHref());
request = target.request(MediaType.APPLICATION_XML).accept(
        MediaType.APPLICATION_XML);
request.header("ETag", etag);
location.setNotes("A different and modified note");
response = request.put(Entity.xml(location));
Common.checkError(response);
Location locationModified = response.readEntity(Location.class);

/*
 * Let's now delete just the ListenPort sub resource
 */
target =
client.target(locationModified.getLocationPatterns().get(0).getLink().getHref());
request = target.request(MediaType.APPLICATION_XML).accept(
        MediaType.APPLICATION_XML);
response = request.delete();
Common.checkError(response);
/*
 * Now delete. No payload is returned. ETag is ignored for deletes.
 */
target = client.target(locationModified.getLink().getHref());
request = target.request(MediaType.APPLICATION_XML).accept(
        MediaType.APPLICATION_XML);
response = request.delete();
Common.checkError(response);
/*
 * Now a get query based on name, should be no results.
 */
target = client.target(Common.URLBASE).path("locations");
target.queryParam("name", "new.com");
request = target.request(MediaType.APPLICATION_XML).accept(
        MediaType.APPLICATION_XML);
response = request.get();
```

```
Locations locations = response.readEntity(Locations.class);
System.out.println("We should get a 200 return" + response.getStatus()
        + " and 0 results in query: " + locations.getCount());
```

Dial Patterns

Dial pattern query and single GET

```
Client client = Common.getClient();
/*
 * Query all dialpatterns.
 */
WebTarget target = client.target(Common.URLBASE).path("dialpatterns");
Response response = target.request(MediaType.APPLICATION_XML).get();
Common.checkError(response);
/*
 * In this case we are manually telling what entity type is to be
 * unmarshalled. Many clients allow registration of the JAXB mapping
 * classes so this is not needed.
 */
DialPatterns dialpatterns = response.readEntity(DialPatterns.class);
System.out.println("Received " + dialpatterns.getCount() + " of "
        + dialpatterns.getTotalcount() + " dialpatterns");
/*
 * Now take first dialpattern found and GET based on reference URI.
 */
DialPattern dialpattern = dialpatterns.getList().get(0);
target = client.target(dialpattern.getLink().getHref());
response = target.request(MediaType.APPLICATION_XML).get();
Common.checkError(response);
DialPattern dialpattern2 = response.readEntity(DialPattern.class);
System.out.println("Received " + dialpattern2.getName());
System.out.println("DialPattern has ETag: "
        + response.getHeaderString("ETag"));
```

Dial Pattern add, modity, delete

```
Client client = Common.getClient();
/*
 * Add a new dialpattern, if use the Routing GUI to add an entry you
 * will notice that pattern/min/max/domain/location are the key values
 * for dial pattern uniqueness. And also the unique identifiers for the
 * query key.
 *
 * Make sure to get the pattern in first. This JAXB class is pretty
 * finicky.
 */
DialPattern dialpattern = new DialPattern();
dialpattern.setDigitpattern("222");
dialpattern.setMindigits(3);
dialpattern.setMaxdigits(8);
dialpattern.setTreatasemergency(false);
dialpattern.setNotes("Notes for a REST dial pattern");
/*
 * Now we need to do a lookup to find our policy URI
 */
WebTarget target = client.target(Common.URLBASE)
        .path("routingpolicies").path("name").path(POLICY);
Builder request = target.request(MediaType.APPLICATION_XML).accept(
        MediaType.APPLICATION_XML);
Response response = request.get();
```

```
Common.checkError(response);
/*
 * This is actually the hard but consistent way to do this.
 *
 * An alternate would be to use the name we already have and not do the
 * round trip request:
 *
 * RsLink link = new RsLink(); link.setHRefName(POLICY); RsEntityLink
 * elink = new RsEntityLink(link);
 */
RoutingPolicy policy = response.readEntity(RoutingPolicy.class);
List<RsEntityLink> policies = new ArrayList<RsEntityLink>();
policies.add(new RsEntityLink(policy.getLink()));
dialpattern.setPolicies(policies);
/*
 * We are going to use this policy for all locations. This approach to
 * expressing all locations is quite different then the import mechanism
 * of inputing a null.
 */
dialpattern.setLocationall("ALL");
target = client.target(Common.URLBASE).path("dialpatterns");
request = target.request(MediaType.APPLICATION_XML).accept(
        MediaType.APPLICATION_XML);
response = request.post(Entity.xml(dialpattern));
Common.checkError(response);
String etag = response.getHeaderString("ETag");
DialPattern dialpatternAdd = response.readEntity(DialPattern.class);
System.out.println("DialPattern " + dialpatternAdd.getDigitpattern()
        + " added at URI " + dialpatternAdd.getLink().getHref());
/*
 * Modify a dialpattern, for java client it is simpler to fetch full
 * dialpattern entity and PUT "replace" then build URI with matrix
 * parameters.
 *
 * DialPattern.getLink() is only populated on server side.
 */
target = client.target(dialpatternAdd.getLink().getHref());
request = target.request(MediaType.APPLICATION_XML).accept(
        MediaType.APPLICATION_XML);
request.header("ETag", etag);
dialpattern.setNotes("A different and modified note");
response = request.put(Entity.xml(dialpattern));
Common.checkError(response);
DialPattern dialpatternModified = response
        .readEntity(DialPattern.class);
/*
 * Now delete. No payload is returned. ETag is ignored for deletes.
 */
target = client.target(dialpatternModified.getLink().getHref());
request = target.request(MediaType.APPLICATION_XML).accept(
        MediaType.APPLICATION_XML);
response = request.delete();
Common.checkError(response);
/*
 * Now a get lookup based on unique lookup attributes documented in the
 * API reference: pattern/min/max/location/domain
 */
target = client.target(Common.URLBASE).path("dialpatterns");
target = target.path(dialpatternModified.getDigitpattern()).path("" +
dialpatternModified.getMindigits());
target = target.path("" + dialpatternModified.getMaxdigits()).path("ALL").path("ALL");
request = target.request(MediaType.APPLICATION_XML).accept(
        MediaType.APPLICATION_XML);
response = request.get();
System.out.println("We should get a 404 not found return " + response.getStatus());
```

Chapter 6: Limitations and known issues

Limitations

HTTP HEAD Requests

The underlying jax-rs server side provider RESTEasy implementation supports HEAD requests. The HEAD requests do not reliably test response header properties. Therefore, it is recommend not to make HTTP HEAD requests.

Limited Query Support and Search Keys

Limited support for query terms and conditional logic support. Stronger support for more filtering keywords and limited boolean logic is under consideration. Limited support for controlling query result size.

Idiosyncrasies of nrp_jaxb.jar

There are a few caveats of working with nrp_jaxb.jar. Most of these occur because the mappings are based on existing Import JAXB mappings . Consequently, the following exist:

- Many getters and setters that must not be used. It is therefore recommended to consult some Resource API Examples and export files to determine the fields that are in use and how they are used
- Difficult to understand which fields are required. It is therefore recommended to consult Resource API Examples and the GUI for clarity
- An inheritance hierarchy with "*TO" classes which must be ignored
- There are some fields that require values to be filles when constructing and/or some simple validation executes within property setters. You see some NullPointerExceptions. A rule of thumb is to fill the required property values in order of appearance on the GUI
- Some fields do not set a default value within the default constructor. In general, if the GUI loads a default value when creating a New entity then the JAXB mapping also
- There are no XSDs available at the current time. The JAXB content handling is derived from import classes that are not mapped in a way that are conducive to XSD generation.

Known Issues

Java JAX-RS client restrictions

Use the Jersey JAX-RS 2.0 client if possible. If you want to use 1.X , then it is recommended that you use the latest version. For example, the 1.17.1 version of the client does not handle GZIP correctly and there is no support for matrix parameters used for updates.

As of Jersey 2.6, there is a new HttpAuthenticationFeature which supports basic authentication challenge mode. However, it is discovered that plugging it into the client interfered with SSL/TLS session setup. As a work around, you can add the basic authorization header manually or by implementing a jax-rs ClientRequestFilter.

```
response = target.request(MediaType.APPLICATION_XML).header("Authorization", "Basic
YWRtaW46QWRtaW4xMjMk").get();
```

Jersey 2.3 has the old form basic authentication filter that works.

While JAX-RS providers are feature rich, all packages have a lot of idiosyncrasies.

Note:

If using ETag headers is that the javax.ws.rs.core.Response.getEntityTag() requires a specialized provider that implements a parsing and construct of the ETag header value. It is probably simpler to get the header directly

```
response.getHeaderString("ETag");
```

Java Client Jackson JSON JAXB marshalling

The provided nrp_jaxb.jar correctly unmarshall and marshall when used with the Jackson JSON processor configured to use JAXB annotations. These are the approximate settings for ObjectMapper for Jackson circa 1.6.X release. It is possible that some things changed in the 2.X release, but the properties have similar analogues.

```
public void marshalJSON(Object o, HttpRequest request) throws Exception {
    StringWriter os = new StringWriter();
    ObjectMapper mapper = new ObjectMapper();
    mapper.configure(DeserializationConfig.Feature.FAIL_ON_UNKNOWN_PROPERTIES,
            false);
    mapper.getSerializationConfig()
            .setSerializationInclusion(org.codehaus.jackson.map.annotate.JsonSerialize.I
nclusion.NON_NULL);
    mapper.getSerializationConfig()
            .setAnnotationIntrospector(new JaxbAnnotationIntrospector());
    mapper.writeValue(os, o);
    request.content(os.toString().getBytes());
}
```

```
public <T> T unmarshalJSON(Class<T> clazz, String s) throws Exception {
ObjectMapper mapper = new ObjectMapper();
    mapper.configure(DeserializationConfig.Feature.FAIL_ON_UNKNOWN_PROPERTIES,
            false);
    mapper.getSerializationConfig()
            .setSerializationInclusion(org.codehaus.jackson.map.annotate.JsonSerialize.I
nclusion.NON_NULL);
    mapper.getSerializationConfig()
            .setAnnotationIntrospector(new JaxbAnnotationIntrospector());
    return (T) mapper.readValue(new StringReader(s), clazz);
}
```

Routing Name Values

Unfortunately, Routing administration lets characters that are not friendly when used as either hrefName, href, or URI segments. Try to avoid using such characters when assigning names to routing entities.

URL Encoding as path

A path segment encoded with %2F ("/") causes bad request. For example:

```
GET .../timeranges/name/24%2F7
```

This appears to be a RESTEasy issue.

Be careful of XML pretty printers or auto formatters

XML Editor adds spaces when using a formatter. Below code fails to add because the editor auto formatter added extra whitespace at the end of Kbit/sec.

```
<ManagedBandwidthUnitOfMeasurement>Kbit/sec
</ManagedBandwidthUnitOfMeasurement>
<cac_video_alarm_latency>5</cac_video_alarm_latency>
<cac_video_alarm_threshold_percent>80
</cac_video_alarm_threshold_percent>
```

Occasional HTTP redirects

Occasionally, a **`302 MOVED TEMPORARILY`** is seen if the System Manager jboss server is in the process of restarting. In general, there are no redirects sent from the Web Service. This redirect is coming from the Tomcat HTTP container.

Chapter 7: Resources

Session Manager documentation

The following table lists the documents related to Session Manager. Download the documents from the Avaya Support website at http://support.avaya.com.

Title	Description	Audience
Overview		
Avaya Aura® Session Manager Overview and Specification	Describes the key features of Session Manager.	System administrators
Avaya Aura® Session Manager Security Design	Describes the security considerations, features, and solutions for Session Manager.	Network administrators, services, and support personnel
Implementation		
Deploying Avaya Aura® Session Manager and Avaya Aura® Branch Session Manager in Virtualized Environment	Describes how to deploy the Session Manager virtual application in a virtualized environment.	Services and support personnel
Deploying Avaya Aura® Session Manager in Software-Only and Infrastructure as a Service Environment	Describes how to deploy the Session Manager in the Software-Only and Infrastructure as a Service (IaaS) environment.	Services and support personnel
Routing Web Service API Programming Reference	Describes how to use the System Manager Routing Web Service API for Session Manager.	Services and support personnel
Avaya Aura® Session Manager Element Manager Web Service API Programming Reference	Describes how to get programmatic access to Session Manager Dashboard and User Registration status data.	Services and support personnel
Administration		
Administering Avaya Aura® Session Manager	Describes the procedures to administer Session Manager using System Manager.	System administrators

Table continues…

Title	Description	Audience
Avaya Aura® Session Manager Data Privacy Guidelines	Describes how to administer Session Manager to fulfill Data Privacy requirements.	System administrators, Network administrators, services, and support personnel
Installation and upgrades		
Upgrading Avaya Aura® Session Manager	Describes the procedures to upgrade Session Manager to the latest software release.	Services and support personnel
Maintaining and Troubleshooting		
Maintaining Avaya Aura® Session Manager	Contains the procedures for maintaining Session Manager.	Services and support personnel
Troubleshooting Avaya Aura® Session Manager	Contains the procedures to troubleshoot Session Manager, resolve alarms, and replace hardware.	Services and support personnel

Finding documents on the Avaya Support website

Procedure

1. Go to https://support.avaya.com.
2. At the top of the screen, type your username and password and click **Login**.
3. Click **Support by Product** > **Documents**.
4. In **Enter your Product Here**, type the product name and then select the product from the list.
5. In **Choose Release**, select the appropriate release number.

   The **Choose Release** field is not available if there is only one release for the product.
6. In the **Content Type** filter, click a document type, or click **Select All** to see a list of all available documents.

   For example, for user guides, click **User Guides** in the **Content Type** filter. The list only displays the documents for the selected category.
7. Click **Enter**.

Accessing the port matrix document

Procedure

1. Go to https://support.avaya.com.
2. Log on to the Avaya website with a valid Avaya user ID and password.
3. On the Avaya Support page, click **Support by Product** > **Documents**.

4. In **Enter Your Product Here**, type the product name, and then select the product from the list of suggested product names.
5. In **Choose Release**, select the required release number.
6. In the **Content Type** filter, select one or both the following categories:
   - **Application & Technical Notes**
   - **Design, Development & System Mgt**

   The list displays the product-specific Port Matrix document.
7. Click **Enter**.

Avaya Documentation Center navigation

For some programs, the latest customer documentation is now available on the Avaya Documentation Center website at https://documentation.avaya.com.

Important:

For documents that are not available on Avaya Documentation Center, click **More Sites** > **Support** on the top menu to open https://support.avaya.com.

Using the Avaya Documentation Center, you can:

- Search for keywords.

  To filter by product, click **Filters** and select a product.
- Search for documents.

  From **Products & Solutions**, select a solution category and product, and then select the appropriate document from the list.
- Sort documents on the search results page.
- Click **Languages** ( ) to change the display language and view localized documents.
- Publish a PDF of the current section in a document, the section and its subsections, or the entire document.
- Add content to your collection using **My Docs** ( ).

  Navigate to the **Manage Content** > **My Docs** menu, and do any of the following:
  - Create, rename, and delete a collection.
  - Add topics from various documents to a collection.
  - Save a PDF of the selected content in a collection and download it to your computer.
  - Share content in a collection with others through email.
  - Receive collection that others have shared with you.
- Add yourself as a watcher using the **Watch** icon ( ).

Navigate to the **Manage Content** > **Watchlist** menu, and do the following:

- Enable **Include in email notification** to receive email alerts.
- Unwatch selected content, all content in a document, or all content on the Watch list page.

As a watcher, you are notified when content is updated or deleted from a document, or the document is removed from the website.

- Share a section on social media platforms, such as Facebook, LinkedIn, and Twitter.
- Send feedback on a section and rate the content.

Note:

Some functionality is only available when you log in to the website. The available functionality depends on your role.

Training

The following table contains courses that are available on https://www.avaya-learning.com. To search for the course, in the **Search** field, enter the course code and click **Go**.

New training courses are added periodically. Enter **Session Manager** in the **Search** field to display the inclusive list of courses related to Session Manager.

Course code	Course title
20980W	What's New with Avaya Aura® Release 8.1
71200V	Integrating Avaya Aura® Core Components
72200V	Supporting Avaya Aura® Core Components
20130V	Administering Avaya Aura® System Manager Release 8.1

Viewing Avaya Mentor videos

Avaya Mentor videos provide technical content on how to install, configure, and troubleshoot Avaya products.

About this task

Videos are available on the Avaya Support website, listed under the video document type, and on the Avaya-run channel on YouTube.

- To find videos on the Avaya Support website, go to https://support.avaya.com/ and do one of the following:
  - In **Search**, type `Avaya Mentor Videos`, click **Clear All** and select **Video** in the **Content Type**.

- In **Search**, type the product name. On the Search Results page, click **Clear All** and select **Video** in the **Content Type**.

  The **Video** content type is displayed only when videos are available for that product.

In the right pane, the page displays a list of available videos.

- To find the Avaya Mentor videos on YouTube, go to www.youtube.com/AvayaMentor and do one of the following:
  - Enter a key word or key words in the **Search Channel** to search for a specific product or topic.
  - Scroll down Playlists, and click a topic name to see the list of videos available for the topic. For example, Contact Centers.

Note:

Videos are not available for all products.

Support

Go to the Avaya Support website at https://support.avaya.com for the most up-to-date documentation, product notices, and knowledge articles. You can also search for release notes, downloads, and resolutions to issues. Use the online service request system to create a service request. Chat with live agents to get answers to questions, or request an agent to connect you to a support team if an issue requires additional expertise.

Using the Avaya InSite Knowledge Base

The Avaya InSite Knowledge Base is a web-based search engine that provides:

- Up-to-date troubleshooting procedures and technical tips
- Information about service packs
- Access to customer and technical documentation
- Information about training and certification programs
- Links to other pertinent information

If you are an authorized Avaya Partner or a current Avaya customer with a support contract, you can access the Knowledge Base without extra cost. You must have a login account and a valid Sold-To number.

Use the Avaya InSite Knowledge Base for any potential solutions to problems.

1. Go to http://www.avaya.com/support.
2. Log on to the Avaya website with a valid Avaya user ID and password.

   The system displays the Avaya Support page.

3. Click **Support by Product** > **Product-specific Support**.
4. In **Enter Product Name**, enter the product, and press `Enter`.
5. Select the product from the list, and select a release.
6. Click the **Technical Solutions** tab to see articles.
7. Select relevant articles.

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