CHAPTER 12

Routing Protocol (OSPF, BGP, EIGRP) Requirements

- Resource Summary for Routing Protocols
- Create a Routing Protocol Instance Identifier
- Delete a Routing Protocol Instance Identifier
- Retrieve All Routing Protocol IDs
- BGP Network Resource
- BGP Best Path Selection Resource
- EIGRP Network Resource
- OSPF Network Resource
- BGP Neighbor Resource
- Enabling and Disabling Routing Updates on an Interface (Passive for OSPF and EIGRP)
- Routing Table Display
- Static Route Resource

Resource Summary for Routing Protocols

<table>
<thead>
<tr>
<th>Resource</th>
<th>URL (BaseURL)</th>
<th>HTTP Method</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>GET POST PUT DELETE</td>
</tr>
<tr>
<td>All OSPF passive interfaces</td>
<td>/api/v1/routing-svc/ospf/{routing-protocol-id}/passive</td>
<td>Y N N N</td>
</tr>
<tr>
<td>All EIGRP passive interfaces</td>
<td>/api/v1/routing-svc/eigrp/{routing-protocol-id}/passive</td>
<td>Y N N N</td>
</tr>
<tr>
<td>Enables/Disables the OSPF route updates on an interface</td>
<td>/api/v1/routing-svc/ospf/{routing-protocol-id}/passive/{if-id}</td>
<td>Y N Y N</td>
</tr>
<tr>
<td>Resource Summary for Routing Protocols</td>
<td>HTTP Method</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>Enables/Disables the route updates on an interface</td>
<td>[Y/N] [N/Y] [Y/N] [N/Y]</td>
<td></td>
</tr>
<tr>
<td>OSPF process id</td>
<td>[Y/N] [N/Y] [Y/N] [N/Y]</td>
<td></td>
</tr>
<tr>
<td>BGP ASN</td>
<td>[Y/N] [N/Y] [Y/N] [N/Y]</td>
<td></td>
</tr>
<tr>
<td>EIGRP ASN</td>
<td>[Y/N] [N/Y] [Y/N] [N/Y]</td>
<td></td>
</tr>
<tr>
<td>OSPF routing process instance</td>
<td>[Y/N] [N/Y] [Y/N] [N/Y]</td>
<td></td>
</tr>
<tr>
<td>BGP routing process instance</td>
<td>[Y/N] [N/Y] [Y/N] [N/Y]</td>
<td></td>
</tr>
<tr>
<td>BGP Bestpath</td>
<td>[Y/N] [N/Y] [Y/N] [N/Y]</td>
<td></td>
</tr>
<tr>
<td>Neighbor Fall-over</td>
<td>[Y/N] [N/Y] [Y/N] [N/Y]</td>
<td></td>
</tr>
<tr>
<td>EIGRP routing process instance</td>
<td>[Y/N] [N/Y] [Y/N] [N/Y]</td>
<td></td>
</tr>
<tr>
<td>OSPF network</td>
<td>[Y/N] [N/Y] [Y/N] [N/Y]</td>
<td></td>
</tr>
<tr>
<td>EIGRP Networks</td>
<td>[Y/N] [N/Y] [Y/N] [N/Y]</td>
<td></td>
</tr>
<tr>
<td>BGP Networks</td>
<td>[Y/N] [N/Y] [Y/N] [N/Y]</td>
<td></td>
</tr>
<tr>
<td>OSPF network</td>
<td>[Y/N] [N/Y] [Y/N] [N/Y]</td>
<td></td>
</tr>
<tr>
<td>EIGRP network</td>
<td>[Y/N] [N/Y] [Y/N] [N/Y]</td>
<td></td>
</tr>
<tr>
<td>BGP network</td>
<td>[Y/N] [N/Y] [Y/N] [N/Y]</td>
<td></td>
</tr>
<tr>
<td>Routing Protocol Instance Identifier</td>
<td>HTTP Method</td>
<td></td>
</tr>
<tr>
<td>------------------------------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>BGP neighbors</td>
<td>Y Y N N</td>
<td></td>
</tr>
<tr>
<td>Only BGP requires neighbor configuration. OSPF and EIGRP learn their neighbors.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BGP neighbor</td>
<td>Y N Y Y</td>
<td></td>
</tr>
<tr>
<td>/api/v1/routing-svc/bgp/{asn-id}/neighbors/neighbor-ip-address&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BGP Neighbor Fall-over</td>
<td>Y Y N N N</td>
<td></td>
</tr>
<tr>
<td>/api/v1/routing-svc/bgp/{routing-protocol-id}/neighbors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>/api/v1/routing-svc/bgp/{routing-protocol-id}/neighbors/{neighbor-id}</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Routing table</td>
<td>Y N N N</td>
<td></td>
</tr>
<tr>
<td>/api/v1/routing-svc/routing-table</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Static routes</td>
<td>Y Y N N</td>
<td></td>
</tr>
<tr>
<td>/api/v1/routing-svc/static-routes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A static route</td>
<td>Y N N Y</td>
<td></td>
</tr>
<tr>
<td>/api/v1/routing-svc/static-routes/{destination-network_next-hop}</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- or - /api/v1/routing-svc/static-routes/{destination-network_next-hop_intf-name}</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- or - /api/v1/routing-svc/static-routes/{destination-network_next-hop_intf-name}</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Create a Routing Protocol Instance Identifier

#### History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOS XE 3.10</td>
<td>Introduced for the CSR1000V platform</td>
</tr>
<tr>
<td>IOS XE 3.14</td>
<td>Introduced for ASR1001-X and ASR1002-X platforms</td>
</tr>
</tbody>
</table>

### Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>POST</td>
<td>/api/v1/routing-svc/BGP</td>
</tr>
<tr>
<td></td>
<td>/api/v1/routing-svc/EIGRP</td>
</tr>
<tr>
<td></td>
<td>/api/v1/routing-svc/OSPF</td>
</tr>
</tbody>
</table>
Create a Routing Protocol Instance Identifier

Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Required for POST and PUT</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>routing-protocol-type</td>
<td>string</td>
<td>Optional in request</td>
<td>“BGP”, “EIGRP”, or “OSPF”</td>
</tr>
<tr>
<td>routing-protocol-id</td>
<td>string</td>
<td>Mandatory</td>
<td>Unique routing protocol ID. Examples: EIGRP ASN, BGP ASN, OSPF process ID.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Note</strong>: IOS supports only one BGP routing instance.</td>
</tr>
<tr>
<td>router-id</td>
<td>ipaddress</td>
<td>Optional</td>
<td>IP address in x.x.x.x format.</td>
</tr>
</tbody>
</table>

JSON Representation

```
{
  "routing-protocol-id": "{string}"
}
```

Related Topics

- BGP Network Resource, page 12-8
- EIGRP Network Resource, page 12-14
- OSPF Network Resource, page 12-18

Create a BGP Instance

Example

**JSON Request**

POST /api/v1/routing-svc/bgp

Content-Type: application/json
Accept: application/json

```
{
  "routing-protocol-id": "100"
}
```

**JSON Response**

201 Created
Location: http://host/api/v1/routing-svc/bgp/100
Create an OSPF Process ID

Example

**JSON Request**

```
POST  /api/v1/routing-svc/ospf
Content-Type: application/json
Accept: application/json

{
  "routing-protocol-id": "100"
}
```

**JSON Response**

201 Created
Location: http://host/api/v1/routing-svc/ospf/100

Create an EIGRP ASN

Example

**JSON Request**

```
POST  /api/v1/routing-svc/eigrp
Content-Type: application/json
Accept: application/json

{
  "routing-protocol-id": "100"
}
```

**JSON Response**

201 Created
Location: http://host/api/v1/routing-svc/eigrp/100

Delete a Routing Protocol Instance Identifier

History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOS XE 3.10</td>
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<tr>
<td>IOS XE 3.14</td>
<td>Introduced for ASR1001-X and ASR1002-X platforms</td>
</tr>
</tbody>
</table>
Delete a Routing Protocol Instance Identifier

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELETE</td>
<td>/api/v1/routing-svc/BGP/{routing-protocol-id}</td>
</tr>
<tr>
<td></td>
<td>/api/v1/routing-svc/OSPF/{routing-protocol-id}</td>
</tr>
<tr>
<td></td>
<td>/api/v1/routing-svc/EIGRP/{routing-protocol-id}</td>
</tr>
</tbody>
</table>

{routing-protocol-id} is one of: EIGRP ASN, BGP ASN, or OSPF process id.

Delete a BGP ASN

Example

**JSON Request**

```
DELETE /api/v1/routing-svc/bgp/100
```

**JSON Response**

```
204 No Content
```

Delete an EIGRP ASN

Example

**JSON Request**

```
DELETE /api/v1/routing-svc/eigrp/100
```

**JSON Response**

```
204 No Content
```

Delete an OSPF Process ID

Example

**JSON Request**

```
DELETE /api/v1/routing-svc/ospf/100
```

**JSON Response**

```
204 No Content
```
Retrieve All Routing Protocol IDs

History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
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</tbody>
</table>

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>/api/v1/routing-svc/BGP</td>
</tr>
<tr>
<td></td>
<td>/api/v1/routing-svc/OSPF</td>
</tr>
<tr>
<td></td>
<td>/api/v1/routing-svc/EIGRP</td>
</tr>
</tbody>
</table>

Retrieve All BGP ASNs

Example

**JSON Request**

GET /api/v1/routing-svc/bgp
Accept: application/json

**JSON Response**

200 ok
Content-type: application/json

{
  "kind": "collection#bgp-asn",
  "items": [
    {
      "kind": "object#bgp-asn",
      "routing-protocol-id": "100"
    },
    ...
  ]
}

Retrieve All EIGRP ASNs

Example

**JSON Request**

GET /api/v1/routing-svc/eigrp
Accept: application/json
**JSON Response**

200 ok  
Content-type: application/json

```json
{
  "kind": "collection#eigrp-asn",
  "items": [
    {
      "kind": "object#eigrp-asn",
      "routing-protocol-id": "100"
    }
  ]
}
```

**Retrieve All OSPF Process IDs**

**Example**

**JSON Request**

GET /api/v1/routing-svc/ospf  
Accept: application/json

**JSON Response**

200 ok  
Content-type: application/json

```json
{
  "kind": "collection#ospf-process-id",
  "items": [
    {
      "kind": "object#ospf-process-id",
      "routing-protocol-id": "100"
    }
    ...
  ]
}
```

**BGP Network Resource**

**History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOS XE 3.10</td>
<td>Introduced for the CSR1000V platform</td>
</tr>
<tr>
<td>IOS XE 3.14</td>
<td>Introduced for ASR1001-X and ASR1002-X platforms</td>
</tr>
</tbody>
</table>
Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Required for POST and PUT</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>network</td>
<td>string</td>
<td>Mandatory</td>
<td>Destination network CIDR format x.x.x.x/nn</td>
</tr>
<tr>
<td>kind</td>
<td>string</td>
<td>Not applicable</td>
<td>“object#bgp-network”</td>
</tr>
<tr>
<td>routing-protocol</td>
<td>string</td>
<td>Not applicable</td>
<td>bgp</td>
</tr>
<tr>
<td>routing-protocol-id</td>
<td>number</td>
<td>Not applicable</td>
<td>BGP ASN</td>
</tr>
</tbody>
</table>

JSON Representation

```
{
    "kind": "object#bgp-network",
    "routing-protocol-id": "(string)",
    "network": "{ipaddress}"
}
```

Related Topics

Create a BGP Instance, page 12-4

Configure a BGP Network

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>POST</td>
<td>/api/v1/routing-svc/bgp/{routing-protocol-id}/networks</td>
</tr>
</tbody>
</table>

Example

**JSON Request**

POST /api/v1/routing-svc/bgp/100/networks

Content-type: application/json
Accept: application/json

```
{
    "network": "172.17.1.0/24"
}
```

**JSON Response**

201 Created
Location: http://host/api/v1/routing-svc/bgp/100/networks/172.17.1.0_24
Retrieve a BGP Network

Example

**JSON Request**

GET /api/v1/routing-svc/bgp/100/networks/10.0.0.0_24
Accept: application/json

**JSON Response**

200 ok

Content-type: application/json

```
{
  "kind": "object#bgp-network",
  "routing-protocol": "bgp",
  "routing-protocol-id": "100",
  "network": "10.0.0.0/24"
}
```

Retrieve All BGP Networks

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>/api/v1/routing-svc/bgp/{routing-protocol-id}/networks</td>
</tr>
</tbody>
</table>

{routing-protocol-id} is the BGP ASN

Properties for Retrieve All

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>network</td>
<td>string</td>
<td>Destination network CIDR format x.x.x.x/nn</td>
</tr>
</tbody>
</table>

**JSON Representation**

```
{
  "kind": "collection#bgp-network",
  "routing-protocol-type": "BGP",
  "routing-protocol-id": "{string}",
  "items": [ { json object with kind "object#bgp-network"} ]
}
```

Example

**JSON Request**

GET /api/v1/routing-svc/bgp/100/networks
Accept: application/json
JSON Response

200 ok
Content-type: application/json

{
  "kind": "collection#bgp-network",
  "routing-protocol": "bgp",
  "routing-protocol-id": "100",
  "items": [
    {
      "kind": "object#bgp-network",
      "network": "172.17.1.0/24"
    },
    {
      "kind": "object#bgp-network",
      "network": "173.17.1.0/24"
    },
    ...
  ]
}

Delete a BGP Network

Example

JSON Request
DELETE /api/v1/routing-svc/bgp/100/networks/10.0.0.0_24

JSON Response
204 No Content

BGP Best Path Selection Resource

History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOS XE 3.11</td>
<td>Introduced for the CSR1000V platform</td>
</tr>
<tr>
<td>IOS XE 3.14</td>
<td>Introduced for ASR1001-X and ASR1002-X platforms</td>
</tr>
</tbody>
</table>

Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Required for POST and PUT</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>compare-routerid</td>
<td>boolean</td>
<td>Optional</td>
<td>Compare routerid for best path selection</td>
</tr>
<tr>
<td>ignore-cost-community</td>
<td>boolean</td>
<td>Optional</td>
<td>Ignore cost community for best path selection</td>
</tr>
</tbody>
</table>
BGP Best Path Selection Resource

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ignore-igp-metrics</td>
<td>boolean</td>
<td>Optional</td>
<td>Ignore IGP metric</td>
</tr>
<tr>
<td>compare-confederation-path</td>
<td>boolean</td>
<td>Optional</td>
<td>Multi-Exit-Discriminator option</td>
</tr>
<tr>
<td>missing-as-least-preferred</td>
<td>boolean</td>
<td>Optional</td>
<td>Multi-Exit-Discriminator option</td>
</tr>
<tr>
<td>allow-invalid</td>
<td>boolean</td>
<td>Optional</td>
<td>Prefix validation option</td>
</tr>
<tr>
<td>disable</td>
<td>boolean</td>
<td>Optional</td>
<td>Prefix validation option</td>
</tr>
</tbody>
</table>

**JSON Representation**

```json
{
    "kind" : "object#bgp-bestpath",
    "compare-routerid" : true,
    "ignore-cost-community" : true,
    "ignore-igp-metric" : true,
    "multi-exit-discriminator" : {
        "compare-confederation-path" : true,
        "missing-as-worst" : true
    },
    "prefix-validation" : {
        "allow-invalid" : true,
        "disable" : true
    }
}
```

**Retrieve BGP Best Path**

**Resource URI**

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>/api/v1/routing-svc/bgp/{routing-protocol-id}/best-path</td>
</tr>
</tbody>
</table>

**Example**

**JSON Request**

```
GET /api/v1/routing-svc/bgp/100/bestpath
Accept: application/json
```
**JSON Response**

200 OK
Content-Type: application/json

```json
{
    "kind": "object#bgp-bestpath",
    "compare-routerid": true,
    "ignore-cost-community": true,
    "ignore-igp-metric": true,
    "multi-exit-discriminator": {
        "compare-confederation-path": true,
        "missing-as-worst": true
    },
    "prefix-validation": {
        "allow-invalid": true,
        "disable": true
    }
}
```

**Modify BGP Best Path**

**Resource URI**

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUT</td>
<td>/api/v1/routing-svc/bgp/[routing-protocol-id]/best-path</td>
</tr>
</tbody>
</table>

**Example**

**JSON Request**

PUT /api/v1/routing-svc/bgp/100/bestpath
Content-Type: application/json

```json
{
    "compare-routerid": true,
    "ignore-cost-community": true,
    "ignore-igp-metric": true,
    "multi-exit-discriminator": {
        "compare-confederation-path": true,
        "missing-as-worst": true
    },
    "prefix-validation": {
        "allow-invalid": true,
        "disable": true
    }
}
```

**JSON Response**

204 No Content
EIGRP Network Resource

History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOS XE 3.10</td>
<td>Introduced for the CSR1000V platform</td>
</tr>
<tr>
<td>IOS XE 3.13</td>
<td>Added virtual-instance-name property.</td>
</tr>
<tr>
<td>IOS XE 3.14</td>
<td>Introduced for ASR1001-X and ASR1002-X platforms</td>
</tr>
</tbody>
</table>

Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Required for POST and PUT</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>kind</td>
<td>string</td>
<td>Not applicable</td>
<td>&quot;object#eigrp-network&quot;. Read-only.</td>
</tr>
<tr>
<td>routing-protocol</td>
<td>string</td>
<td>Not applicable</td>
<td>&quot;eigrp&quot;</td>
</tr>
<tr>
<td>routing-protocol-id</td>
<td>number</td>
<td>Not applicable</td>
<td>EIGRP ASN</td>
</tr>
<tr>
<td>network</td>
<td>string</td>
<td>Mandatory</td>
<td>Destination network CIDR format x.x.x.x/nn.</td>
</tr>
<tr>
<td>virtual-instance-name</td>
<td>string</td>
<td>Optional</td>
<td>EIGRP virtual instance name</td>
</tr>
</tbody>
</table>

JSON Representation

```json
{
    "kind": "object#bgp-network",
    "routing-protocol": "EIGRP",
    "routing-protocol-id": (number),
    "network": "(string)",
    "virtual-instance-name": "(string)"
}
```

Related Topics

Create an EIGRP ASN, page 12-5
Create an EIGRP Network

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>POST</td>
<td>/api/v1/routing-svc/eigrp/{routing-protocol-id}/networks</td>
</tr>
</tbody>
</table>

Example

**JSON Request**

POST /api/v1/routing-svc/eigrp/145/networks

Content-type: application/json
Accept: application/json

```
{
    "network": "131.108.0.0/24"
}
```

**JSON Response**

201 Created
Location: http://host/api/v1/routing-svc/eigrp/145/networks/131.108.0.0_24

Retrieve an EIGRP Network

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>/api/v1/routing-svc/ospf/{routing-protocol-id}/networks/{network_mask}</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>URI Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>{routing-protocol-id}</td>
<td>EIGRP ASN</td>
</tr>
<tr>
<td>{network_mask}</td>
<td>Network and the prefix length joined by an underscore.</td>
</tr>
</tbody>
</table>
Example

**JSON Request**

GET /api/v1/routing-svc/eigrp/10/networks/131.108.200.0_24

Accept: application/json

**JSON Response**

200 OK

Content-type: application/json

```
{
  "kind": "object#eigrp-network",
  "routing-protocol": "eigrp",
  "routing-protocol-id": "10",
  "network": "131.108.200.0/24"
}
```

**Retrieve All Configured EIGRP Networks**

**Resource URI**

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>/api/v1/routing-svc/eigrp/{routing-protocol-id}/networks</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>URI Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>{routing-protocol-id}</td>
<td>EIGRP ASN</td>
</tr>
</tbody>
</table>

**Properties for Retrieve All**

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>kind</td>
<td>string</td>
<td>“object#eigrp-network”. Read-only.</td>
</tr>
<tr>
<td>routing-protocol</td>
<td>string</td>
<td>“eigrp”</td>
</tr>
<tr>
<td>routing-protocol-id</td>
<td>number</td>
<td>EIGRP ASN</td>
</tr>
<tr>
<td>network</td>
<td>string</td>
<td>Destination network CIDR format x.x.x.x/nn.</td>
</tr>
</tbody>
</table>

**JSON Representation**

```
{
  "kind": "collection#eigrp-network",
  "routing-protocol-type": "EIGRP",
  "routing-protocol-id": (number),
  "items": [ (json object with kind "object#eigrp-network") ]
}
```
Example

**JSON Request**
GET /api/v1/routing-svc/eigrp/145/networks
Accept: application/json

**JSON Response**
200 ok

Content-type: application/json
{
  "kind": "collection#eigrp-network",
  "routing-protocol-id": "145",
  "routing-protocol": "eigrp",
  "items": [
    {
      "kind": "object#eigrp-network",
      "network": "172.17.1.0/24"
    },
    {
      "kind": "object#eigrp-network",
      "network": "173.17.1.0/24"
    },
    ...
  ]
}

**Delete an EIGRP Network**

**Resource URI**

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELETE</td>
<td>/api/v1/routing-svc/ospf/{routing-protocol-id}/networks/{network_mask}</td>
</tr>
</tbody>
</table>

**URI Property** | **Description** |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>{routing-protocol-id}</td>
<td>EIGRP ASN</td>
</tr>
<tr>
<td>{network_mask}</td>
<td>Network and the prefix length, joined by an underscore.</td>
</tr>
</tbody>
</table>

**Example**

**JSON Request**
DELETE /api/v1/routing-svc/eigrp/10/networks/131.108.200.0_24
Accept: application/json

**JSON Response**
204 No Content
OSPF Network Resource

History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOS XE 3.10</td>
<td>Introduced for the CSR1000V platform</td>
</tr>
<tr>
<td>IOS XE 3.14</td>
<td>Introduced for ASR1001-X and ASR1002-X platforms</td>
</tr>
</tbody>
</table>

Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Required for POST and PUT</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>area</td>
<td>string</td>
<td>Mandatory</td>
<td>OSPF area as a decimal value or IP address format x.x.x.x.</td>
</tr>
<tr>
<td>network</td>
<td>string</td>
<td>Mandatory</td>
<td>Destination network CIDR format x.x.x.nn.</td>
</tr>
<tr>
<td>kind</td>
<td>string</td>
<td>Not applicable</td>
<td>“object#ospf-network”. Read-only.</td>
</tr>
<tr>
<td>routing-protocol</td>
<td>string</td>
<td>Not applicable</td>
<td>“ospf”</td>
</tr>
<tr>
<td>routing-protocol-id</td>
<td>number</td>
<td>Not applicable</td>
<td>OSPF process ID.</td>
</tr>
</tbody>
</table>

JSON Representation

```json
{
  "kind": "object#ospf-network",
  "routing-protocol": "{string}",
  "routing-protocol-id": "{string}",
  "network": "{string}",
  "area": "{string}"  
}
```

Related Topics

Create an OSPF Process ID, page 12-5

Configure an OSPF Network

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>POST</td>
<td>/api/v1/routing-svc/ospf/{routing-protocol-id}/networks</td>
</tr>
</tbody>
</table>
### OSPF Network Resource

<table>
<thead>
<tr>
<th>URI Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>{routing-protocol-id}</td>
<td>OSPF process ID</td>
</tr>
</tbody>
</table>

#### Example

**JSON Request**

```json
POST /api/v1/routing-svc/ospf/10/networks

Content-type: application/json
Accept: application/json

{
  "network" : "131.108.200.0/24",
  "area" : 0
}
```

**JSON Response**

201 Created
Location: http://host/api/v1/routing-svc/ospf/10/networks/131.108.200.0_24_0

### Retrieve an OSPF Network

**Resource URI**

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>/api/v1/routing-svc/ospf/{routing-protocol-id}/networks/{network_mask_area}</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>URI Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>{routing-protocol-id}</td>
<td>OSPF process ID</td>
</tr>
<tr>
<td>{network_mask_area}</td>
<td>Network, prefix length, and OSPF area, joined by underscores.</td>
</tr>
</tbody>
</table>

#### Example

**JSON Request**

```json
GET /api/v1/routing-svc/ospf/10/networks/131.108.200.0_24_0

Accept: application/json
```
JSON Response

200 OK

Content-type: application/json

```json
{
    "kind" : "object#ospf-network",
    "routing-protocol" : "ospf",
    "routing-protocol-id" : "10",
    "network" : "131.108.200.0/24",
    "area" : 0
}
```

Retrieve All Configured OSPF Networks

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>/api/v1/routing-svc/ospf/{routing-protocol-id}/networks</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>URI Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>{routing-protocol-id}</td>
<td>OSPF process ID</td>
</tr>
</tbody>
</table>

Properties for Retrieve All

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>kind</td>
<td>string</td>
<td>Must be &quot;collection#ospf-network&quot;</td>
</tr>
<tr>
<td>routing-protocol</td>
<td>string</td>
<td>&quot;OSPF&quot;</td>
</tr>
<tr>
<td>routing-protocol-id</td>
<td>string</td>
<td>OSPF process id</td>
</tr>
<tr>
<td>items</td>
<td>array</td>
<td>List of networks</td>
</tr>
</tbody>
</table>

JSON Representation

```json
{
    "kind": "collection#ospf-network",
    "routing-protocol-type": "{string}",
    "routing-protocol-id": "{string}",
    "items": [{json object with kind "object#ospf-network"}]
}
```

Example

**JSON Request**

GET /api/v1/routing-svc/ospf/10/networks
Accept: application/json
JSON Response

200 ok

Content-type: application/json
{
    "kind": "collection#ospf-network",
    "routing-protocol": "ospf",
    "routing-protocol-id": 10,
    "items": [
        {
            "kind": "object#ospf-network",
            "network": "171.108.201.0/24",
            "area": 0
        },
        {
            "kind": "object#ospf-network",
            "network": "171.108.202.0/24",
            "area": 1
        }
    ]
}

Delete an OSPF Network

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELETE</td>
<td>/api/v1/routing-svc/ospf/{routing-protocol-id}/networks/{network_mask_area}</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>URI Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>{routing-protocol-id}</td>
<td>OSPF process ID</td>
</tr>
<tr>
<td>{network_mask_area}</td>
<td>Network, prefix length, and OSPF area, joined by underscores.</td>
</tr>
</tbody>
</table>

Example

JSON Request

DELETE /api/v1/routing-svc/ospf/10/networks/131.108.200.0_24_0
Accept: application/json

JSON Response

204 No Content
BGP Neighbor Resource

History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOS XE 3.10</td>
<td>Introduced for the CSR1000V platform</td>
</tr>
<tr>
<td>IOS XE 3.11</td>
<td>Added <code>enable</code> and <code>detection</code> properties</td>
</tr>
<tr>
<td>IOS XE 3.14</td>
<td>Introduced for ASR1001-X and ASR1002-X platforms</td>
</tr>
</tbody>
</table>

Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>kind</td>
<td>string</td>
<td>Mandatory Can only be &quot;object#bgp-neighbor&quot;</td>
</tr>
<tr>
<td>routing-protocol-id</td>
<td>number</td>
<td>Mandatory BGP AS</td>
</tr>
<tr>
<td>neighbor</td>
<td>ipaddress</td>
<td>Mandatory IP address format x.x.x.x</td>
</tr>
<tr>
<td>remote-as</td>
<td>string</td>
<td>Mandatory Neighbor’s ASN</td>
</tr>
<tr>
<td>fall-over</td>
<td>object</td>
<td>Optional Configures fall-over</td>
</tr>
<tr>
<td>enable</td>
<td>boolean</td>
<td>Mandatory (sub-property of fall-over)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enable or disable fall-over</td>
</tr>
<tr>
<td>detection</td>
<td>string</td>
<td>Optional (sub-property of fall-over)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If fall-over is enabled, optionally use bfd</td>
</tr>
</tbody>
</table>

JSON Representation for BGP Neighbor Configuration

```json
{
    "kind": "object#bgp-neighbor",
    "routing-protocol-id": "(number)",
    "neighbor": "(ip-address)",
    "remote-as": "(string)",
    "fall-over":
    {
        "enable": "(boolean)",
        "detection": "(string)"
    }
}
```

Create BGP Neighbor

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>POST</td>
<td>/api/v1/routing-svc/bgp/{routing-protocol-id}/neighbors</td>
</tr>
</tbody>
</table>
Example

**JSON Request**

POST /api/v1/routing-svc/bgp/100/neighbors
Content-Type: application/json

```json
{
  "routing-protocol-id": "100",
  "address": "152.13.25.25",
  "remote-as": "222",
  "fall-over":
    {
      "enable": true,
      "method": "bfd"
    }
}
```

**JSON Response**

201 Created
Location: https://host/api/v1/bgp/100/neighbors/152.13.25.25

**Retrieve a BGP Neighbor**

**Resource URI**

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>/api/v1/routing-svc/bgp/{routing-protocol-id}/neighbors/{neighbor-id}</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>URI Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>{routing-protocol-id}</td>
<td>BGP ASN</td>
</tr>
<tr>
<td>{neighbor-id}</td>
<td>Neighbor IP address in x.x.x.x format</td>
</tr>
</tbody>
</table>

Example

**JSON Request**

GET /api/v1/routing-svc/bgp/100/neighbors/152.12.25.25
Accept: application/json
JSON Response

200 OK
Content-Type: application/json

```json
{
    "kind": "object#bgp-neighbor",
    "routing-protocol-id": "100",
    "address": "152.13.25.25",
    "remote-as": "222",
    "fall-over":
    {
      "enable": true,
      "method": "bfd"
    }
}
```

Retrieve All Static BGP Neighbors

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>/api/v1/routing-svc/bgp/{routing-protocol-id}/neighbors</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>URI Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>{routing-protocol-id}</td>
<td>BGP ASN</td>
</tr>
</tbody>
</table>

Properties for Retrieve All

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>kind</td>
<td>string</td>
<td>Must be &quot;collection#bgp-neighbor&quot;</td>
</tr>
<tr>
<td>items</td>
<td>array</td>
<td>Array of static BGP neighbor json objects</td>
</tr>
</tbody>
</table>

JSON Representation

```json
{
  "kind": "collection#bgp-neighbor",
  "routing-protocol-type": "{string}",
  "routing-protocol-id": "{string}",
  "items": [
    (json object with kind "object#bgp-neighbor")
  ]
}
```
Example 1

**JSON Request**
GET /api/v1/routing-svc/bgp/100/neighbors
Accept: application/json

**JSON Response**
200 ok
Content-type: application/json
{
  "kind": "collection#bgp-neighbor",
  "routing-protocol-id": "100",
  "items": [
    {
      "kind": "object#bgp-neighbor",
      "address": "152.13.25.25",
      "remote-as": "100",
    },
    {
      "kind": "object#bgp-neighbor",
      "address": "144.12.13.1",
      "remote-as": "10"
    }
  ]
}

Example 2

**JSON Request**
GET /api/v1/routing-svc/bgp/100/neighbors
Accept: application/json

**JSON Response**
200 ok
Content-type: application/json
{
  "kind": "collection#bgp-neighbor",
  "routing-protocol-id": "100",
  "items": [
    {
      "kind": "object#bgp-neighbor",
      "address": "152.13.25.25",
      "remote-as": "100",
      "fall-over":
      {
        "enable": true,
        "method": "bfd"
      }
    }
  ]
}
Modify a BGP Neighbor

**Resource URI**

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUT</td>
<td>/api/v1/routing-svc/bgp/{routing-protocol-id}/neighbors/{neighbor-id}</td>
</tr>
</tbody>
</table>

**Example**

**JSON Request**

```
PUT /api/v1/routing-svc/bgp/100/neighbors/152.13.25.25
Content-Type: application/json

{
    "routing-protocol-id": "100",
    "address": "152.13.25.25",
    "remote-as": "222",
    "fall-over":
        {
            "enable": true,
            "method": "bfd"
        }
}
```

**JSON Response**

```
204 No Content
``` 

Delete a BGP neighbor

**Resource URI**

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELETE</td>
<td>/api/v1/routing-svc/bgp/{routing-protocol-id}/neighbors/{neighbor-id}</td>
</tr>
</tbody>
</table>

**Example**

**Resource URI**

<table>
<thead>
<tr>
<th>URI Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>{routing-protocol-id}</td>
<td>BGP ASN</td>
</tr>
<tr>
<td>{neighbor-id}</td>
<td>Neighbor IP address in x.x.x.x format</td>
</tr>
</tbody>
</table>
Example

**JSON Request**

```
DELETE /api/v1/routing-svc/bgp/100/neighbors/152.13.25.25
```

**JSON Response**

```
204 No Content
```

### Enabling and Disabling Routing Updates on an Interface (Passive for OSPF and EIGRP)

#### History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOS XE 3.10</td>
<td>Introduced for the CSR1000V platform</td>
</tr>
<tr>
<td>IOS XE 3.13</td>
<td>Added virtual-instance-name property for EIGRP passive interface.</td>
</tr>
<tr>
<td>IOS XE 3.14</td>
<td>Introduced for ASR1001-X and ASR1002-X platforms</td>
</tr>
</tbody>
</table>

#### Properties for OSPF

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Required for POST and PUT</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>kind</td>
<td>string</td>
<td>Not applicable</td>
<td>Object type: object#passive-interface</td>
</tr>
<tr>
<td>routing-protocol-type</td>
<td>string</td>
<td>Mandatory</td>
<td>ospf or eigrp (not case-sensitive)</td>
</tr>
<tr>
<td>routing-protocol-id</td>
<td>string</td>
<td>Mandatory</td>
<td>EIGRP ASN or OSPF process ID.</td>
</tr>
<tr>
<td>if-name</td>
<td>string</td>
<td>Mandatory</td>
<td>Name of an interface</td>
</tr>
<tr>
<td>passive</td>
<td>boolean</td>
<td>Mandatory</td>
<td>“true” to disable sending routing updates on the interface, or “false” to re-enable.</td>
</tr>
</tbody>
</table>

#### Properties for EIGRP

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Required for POST and PUT</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>kind</td>
<td>string</td>
<td>Not applicable</td>
<td>Object type: object#passive-interface</td>
</tr>
<tr>
<td>routing-protocol-type</td>
<td>string</td>
<td>Mandatory</td>
<td>ospf or eigrp (not case-sensitive)</td>
</tr>
<tr>
<td>routing-protocol-id</td>
<td>string</td>
<td>Mandatory</td>
<td>EIGRP ASN or OSPF process ID.</td>
</tr>
<tr>
<td>if-name</td>
<td>string</td>
<td>Mandatory</td>
<td>Name of an interface</td>
</tr>
</tbody>
</table>
Enabling and Disabling Routing Updates on an Interface (Passive for OSPF and EIGRP)

### Enabling and Disabling Routing Updates on an Interface (Passive for OSPF and EIGRP)

#### JSON Representation for OSPF

```
{
    "routing-protocol-id": "{string}",
    "routing-protocol-type": "{string}",
    "if-name": "{string}",
    "passive": {boolean}
}
```

#### JSON Representation for EIGRP

```
{
    "routing-protocol-id": "{string}",
    "routing-protocol-type": "{string}",
    "if-name": "{string}",
    "passive": {boolean},
    "virtual-instance-name": "{string}"
}
```

### Suppress Sending of Routing Updates through a Specified Interface

**Note**

This command is not applicable to BGP.

This command has no meaning or effect unless the routing protocol is running on the interface through the network commands.

#### Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUT</td>
<td>/api/v1/routing-svc/{routing-protocol}/{routing-protocol-id}/passive/{if-id}</td>
</tr>
</tbody>
</table>

#### Example: Disabling sending routing updates on GigabitEthernet1

**JSON Request**

```
PUT /api/v1/routing-svc/eigrp/100/passive/GigabitEthernet1
Content-type: application/json
Accept: application/json

{
    "passive": true
}
```
Enabling and Disabling Routing Updates on an Interface (Passive for OSPF and EIGRP)

JSON Response
204 No Content

Retrieve a Passive Interface

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>/api/v1/routing-svc/ {routing-protocol-id}/passive/{if-id}</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>URI Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>{routing-protocol-id}</td>
<td>ospf or eigrp</td>
</tr>
</tbody>
</table>

Example for OSPF

JSON Request
GET /api/v1/routing-svc/ospf/100/passive/GigabitEthernet1
Accept: application/json

JSON Response
200 OK
Content-type: application/json

```
{
    "kind": "object#passive-interface",
    "routing-protocol-id": "100",
    "routing-protocol-type": "ospf",
    "if-name": "GigabitEthernet1",
    "passive": true
}
```

Example for EIGRP

JSON Request
GET /api/v1/routing-svc/eigrp/passive/GigabitEthernet1
Accept: application/json
Routing Table Display

The routing table may be larger than the HTTP response can handle, so the REST client needs to indicate the range and size of the routes in the HTTP GET request.

History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOS XE 3.10</td>
<td>Introduced for the CSR1000V platform</td>
</tr>
<tr>
<td>IOS XE 3.14</td>
<td>Introduced for ASR1001-X and ASR1002-X platforms</td>
</tr>
</tbody>
</table>

Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>kind</td>
<td>string</td>
<td>Object type. Always “collection#route-entry”</td>
</tr>
<tr>
<td>end-of-table</td>
<td>boolean</td>
<td>“true” if this is the last of the route entry and/or there is no more. “false” if there are more route entries in the global routing table.</td>
</tr>
<tr>
<td>items</td>
<td>array</td>
<td>List of object#route-entry</td>
</tr>
</tbody>
</table>
### Property | Type | Description
--- | --- | ---
| routing-protocol | string | Protocol that derived the route.  
| | | - Application route.  
| | | - Connected route.  
| | | - Static route.  
| | | - BGP route.  
| | | - Mobile route.  
| | | - RIP route.  
| | | - OSPF route.  
| | | - ISIS route.  
| | | - EIGRP route.  
| | | - OSPFv3 route.  
| | | - ODR route.  
| | | - HSRP route.  
| | | - NHRP route.  
| | | - LISP route.  
| | | - IPv6 NEMO route.  
| | | - IPv6 ND route.  
| | | - IPv6 RPL route.  
| route-type | string | - OSPF route type, route within an area.  
| | | - OSPF route type, route across different areas.  
| | | - OSPF external route of type 1.  
| | | - OSPF external route of type 1.  
| | | - OSPF NSSA external route of type 1.  
| | | - OSPF NSSA external route of type 2.  
| | | - BGP internal routes(iBGP)  
| | | - BGP external routes (iBGP)  
| | | - BGP local routes.  
| | | - BGP internal routes(iBGP) or BGP external routes or  
| | | BGP local routes.  
| | | - IS-IS level-1 route.  
| | | - IS-IS level-1 route.  
| | | - IS-IS level-2 route.  
| | | - IS-IS level-1 inter area route.  
| | | - IGRP2 derived routes.  
| | | - IGRP2 redistributed routes.  
| network | cidr | Network in CIDR format x.x.x.x/nn  
| admin-distance | string | The administrative distance of the information source.  

Routing Table Display

Chapter 12      Routing Protocol (OSPF, BGP, EIGRP) Requirements

Routing Table Display

URI Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>start-prefix</td>
<td>string</td>
<td>Start prefix in CIDR format x.x.x.x/nn.</td>
</tr>
<tr>
<td>range-type</td>
<td>string</td>
<td>&quot;eq-or-gt&quot; (equal or greater) or &quot;gt&quot; (greater) relative to the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>start-prefix.</td>
</tr>
<tr>
<td>count</td>
<td>number</td>
<td>The number of routes to be returned</td>
</tr>
</tbody>
</table>

Retrieve the Global Routing Table

Resource URI

Verbs  | URI
---|---
GET  | /api/v1/routing-svc/
     | routing-table?start-prefix={cidr}&range-type={string}&count={number}

Example 1

JSON Request

GET  /api/v1/routing-svc/routing-table?start-prefix=0.0.0.0/0& range-type=eq-or-gt&count=2

JSON Response

200 ok

Content-type: application/json

```json
{
"kind": "collection#route-entry",
"items": [
{
"kind": "object#route-entry",
"routing-protocol": "OSPF",
"route-type": "E1",
"network": "172.50.0.0/16",
"distance": 160,
"metric": 5,
"next-hop-router": "10.19.254.6",
"outgoing-interface": "GigabitEthernet2"
}
]
}
```
Static Route Resource

**Example 2**

**JSON Request**

GET  /api/v1/routing-svc/routing-table?start-prefix=173.50.24.0/24&range-type=gt&count=1

Accept: application/json

**JSON Response**

200 ok

Content-type: application/json

```
{
    "kind": "collection#route-entry",
    "items": [
        {
            "kind": "object#route-entry",
            "routing-protocol": "OSPF",
            "route-type": "E1",
            "network": "173.50.0.0/16",
            "admin-distance": 160,
            "metric": 5,
            "next-hop-router": "10.19.254.6",
            "outgoing-interface": "GigabitEthernet2"
        }
    ],
    "end-of-table": true
}
```

## Static Route Resource

### History

<table>
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<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
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<tr>
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<tr>
<td>IOS XE 3.14</td>
<td>Introduced for ASR1001-X and ASR1002-X platforms</td>
</tr>
</tbody>
</table>
Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>kind</td>
<td>string</td>
<td>Must be &quot;object#static-route&quot;</td>
</tr>
<tr>
<td>destination-network</td>
<td>string</td>
<td>Destination network in CIDR format x.x.x.x/nn</td>
</tr>
<tr>
<td>next-hop-router</td>
<td>ipaddress</td>
<td>IP address in x.x.x.x format or outgoing interface name (gigEthernet 0).</td>
</tr>
<tr>
<td>outgoing-interface</td>
<td>string</td>
<td>Outgoing interface name (gigabitEthernet1). Optional if next-hop is specified.</td>
</tr>
<tr>
<td>admin-distance</td>
<td>number</td>
<td>1-255. When there are multiple routes to the same destination, the route with the smaller admin-distance value is chosen. The smaller the admin-distance, the higher the preference. Default is 1. Optional.</td>
</tr>
</tbody>
</table>

JSON Representation for Static Route

```
{
  "kind": "object#static-route",
  "destination-network": "{string}",
  "next-hop-router": "{ipaddress}",
  "outgoing-interface": "{string}",
  "admin-distance": {number}
}
```

Configure a Static Route

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>POST</td>
<td>/api/v1/routing-svc/static-routes</td>
</tr>
</tbody>
</table>

The static route is identified by both the prefix (CIDR) and next hop. Next hop could be an interface, an IP address or both.

Example

**JSON Request**

POST /api/v1/routing-svc/static-routes

Content-type: application/json
Accept: application/json

```
{
  "destination-network": "20.20.20.20/32",
  "next-hop-router": "30.30.30.1",
  "outgoing-interface": "gigabitEthernet1",
  "admin-distance": 3
}
```
Chapter 12    Routing Protocol (OSPF, BGP, EIGRP) Requirements

Static Route Resource

### JSON Response

201 Created
Location: http://host/api/v1/routing-svc/static-routes/20.20.20.20_32_30.30.30.1_gig1

### Retrieve a Static Route

#### Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>/api/v1/routing-svc/static-routes/{destination-network_next-hop}</td>
</tr>
<tr>
<td>GET</td>
<td>/api/v1/routing-svc/static-routes/{destination-network_intf-name }</td>
</tr>
<tr>
<td>GET</td>
<td>/api/v1/routing-svc/static-routes/{destination-network_next-hop_intf-name}</td>
</tr>
</tbody>
</table>

#### Example

**JSON Request**

GET  /api/v1/routing-svc/static-routes/20.20.20.20_32_30.30.30.1
Accept: application/json

**JSON Response**

200 ok

Content-type: application/json

```
{
  "kind": "object#static-route",
  "destination-network": "20.20.20.20/32",
  "next-hop-router": "30.30.30.1"
}
```

### Retrieve All the Static Routes

This API retrieves only static routes that are in the routing information base (RIB).

#### Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>/api/v1/routing-svc/static-routes</td>
</tr>
</tbody>
</table>

#### Properties for Retrieve All

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>kind</td>
<td>string</td>
<td>Must be “collection#static-route”</td>
</tr>
<tr>
<td>items</td>
<td>array</td>
<td>Array of static route json objects</td>
</tr>
</tbody>
</table>
JSON Representation for Retrieve All

```json
{
    "kind": "collection#static-route",
    "items": [ { json object of kind object#static-route } ]
}
```

**Example**

**JSON Request**

GET /api/v1/routing-svc/static-routes
Accept: application/json

**JSON Response**

200 ok
Content-type: application/json

```json
{
    "kind": "collection#static-route",
    "items": [ ]
}
```

Delete a Static Route

**History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
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<tbody>
<tr>
<td>IOS XE 3.10</td>
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</tr>
</tbody>
</table>

**Resource URI**

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELETE</td>
<td>/api/v1/routing-svc/static-routes/{destination-network_next-hop}</td>
</tr>
<tr>
<td>DELETE</td>
<td>/api/v1/routing-svc/static-routes/{destination-network_intf-name}</td>
</tr>
<tr>
<td>DELETE</td>
<td>/api/v1/routing-svc/static-routes/{destination-network_next-hop_intf-name}</td>
</tr>
</tbody>
</table>
Example

**JSON Request**
DELETE /api/v1/routing-svc/static-routes/20.20.20.20_32_30.30.30.1
Accept: application/json

**JSON Response**
204 No Content