CHAPTER 14

Network Address Translation (NAT)

- Resource Summary for NAT
- NAT Pool Resource
- Static NAT Rule Resource
- Dynamic NAT Rule Resource
- NAT Translations Resource

Resource Summary for NAT

The attribute “pat” (port address translation) in the REST API is equivalent to the Cisco IOS NAT term “overload”.

<table>
<thead>
<tr>
<th>Resource</th>
<th>URL (BaseUrl)</th>
<th>HTTP Method</th>
<th>GET</th>
<th>POST/Create</th>
<th>PUT</th>
<th>DELETE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAT pool</td>
<td>/api/v1/nat-svc/pool</td>
<td>GET</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>/api/v1/nat-svc/pool/{nat-pool-id}</td>
<td>POST/Create</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Static NAT</td>
<td>/api/v1/nat-svc/static</td>
<td>GET</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>/api/v1/nat-svc/static/{nat-rule-id}</td>
<td>POST/Create</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Dynamic NAT</td>
<td>/api/v1/nat-svc/dynamic</td>
<td>GET</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Dynamic NAT</td>
<td>/api/v1/nat-svc/dynamic/{nat-rule-id}</td>
<td>POST/Create</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>NAT translations</td>
<td>/api/v1/nat-svc/translations</td>
<td>GET</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

NAT Pool Resource

A NAT Pool models a pool of global IP addresses used during dynamic NAT translation.
## NAT Pool 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>nat-pool-id</td>
<td>string</td>
<td>Mandatory</td>
<td>Unique NAT pool name.</td>
</tr>
<tr>
<td>start-ip-address</td>
<td>string</td>
<td>Mandatory</td>
<td>First IP address of public IP address range in the format x.x.x.x</td>
</tr>
<tr>
<td>end-ip-address</td>
<td>string</td>
<td>Mandatory</td>
<td>Last IP address of public IP address range in the format x.x.x.x</td>
</tr>
<tr>
<td>prefix-length</td>
<td>number</td>
<td>Mandatory</td>
<td>IP Address prefix length</td>
</tr>
</tbody>
</table>

### Retrieve a NAT Pool

#### Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>/api/v1/nat-svc/pool/{nat-pool-id}</td>
</tr>
</tbody>
</table>

#### Properties for Retrieve

<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 “object#nat-pool”</td>
</tr>
<tr>
<td>nat-pool-id</td>
<td>string</td>
<td>Unique NAT pool name.</td>
</tr>
<tr>
<td>start-ip-address</td>
<td>string</td>
<td>First IP address of public IP address range in the format x.x.x.x</td>
</tr>
<tr>
<td>end-ip-address</td>
<td>string</td>
<td>Last IP address of public IP address range in the format x.x.x.x</td>
</tr>
<tr>
<td>prefix-length</td>
<td>number</td>
<td>IP Address prefix length</td>
</tr>
</tbody>
</table>

### Example

#### JSON Request

GET /api/v1/nat-svc/pool/marketing-nat-pool
Accept: application/json
Chapter 14      Network Address Translation (NAT)

NAT Pool Resource

JSON Response

200 ok

Content-type: application/json

{
    "kind": "object#nat-pool",
    "nat-pool-id": "marketing-nat-pool",
    "start-ip-address": "172.16.10.1",
    "end-ip-address": "172.16.10.63",
    "prefix-length": 24
}

Retrieve All NAT Pools

Resource URI

Verb | URI
--- | ---
GET | /api/v1/nat-svc/pool

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 type. Always “collection#nat-pool”</td>
</tr>
<tr>
<td>items</td>
<td>array</td>
<td>Collection of NAT pools.</td>
</tr>
<tr>
<td>nat-pool-id</td>
<td>string</td>
<td>Unique NAT pool name.</td>
</tr>
<tr>
<td>start-ip-address</td>
<td>string</td>
<td>First IP address of public IP address range in the format x.x.x.x</td>
</tr>
<tr>
<td>end-ip-address</td>
<td>string</td>
<td>Last IP address of public IP address range in the format x.x.x.x</td>
</tr>
<tr>
<td>prefix-length</td>
<td>number</td>
<td>IP Address prefix length</td>
</tr>
</tbody>
</table>

Example

JSON Request

GET /api/v1/nat-svc/pool
Accept: application/json

JSON Response

200 ok

Content-type: application/json

{
    "kind": "collection#nat-pool",
    "items": [
        {
            "kind": "object#nat-pool",
            "nat-pool-id": "marketing-nat-pool",
            "start-ip-address": "172.16.10.1",
            "end-ip-address": "172.16.10.63",
            "prefix-length": 24
        }
    ]
}
Modify a NAT Pool

When updating the NAT pool, the old pool is deleted and a new NAT pool is created with the same pool-id, using new parameters.

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUT</td>
<td><code>/api/v1/nat-svc/pool/{nat-pool-id}</code></td>
</tr>
</tbody>
</table>

Example

**JSON Request**

```
PUT /api/v1/nat-svc/pool/marketing-nat-pool

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

{
  "nat-pool-id": "marketing-nat-pool",
  "start-ip-address": "172.16.10.1",
  "end-ip-address": "172.16.10.57",
  "prefix-length": 24
}
```

**JSON Response**

```
204 No Content
```

Delete a NAT Pool

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELETE</td>
<td><code>/api/v1/nat-svc/pool/{nat-pool-id}</code></td>
</tr>
</tbody>
</table>
Example

**JSON Request**

DELETE  /api/v1/nat-svc/pool/marketing-nat-pool
Accept: application/json

**JSON Response**

204 No Content

Create a NAT Pool

**Resource URI**

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>POST</td>
<td>/api/v1/nat-svc/pool</td>
</tr>
</tbody>
</table>

Example

**JSON Request**

POST /api/v1/nat-svc/pool
Content-type: application/json
Accept: application/json

```json
{
    "nat-pool-id": "marketing-nat-pool",
    "start-ip-address": "172.16.10.1",
    "end-ip-address": "172.16.10.63",
    "prefix-length": 24
}
```

**JSON Response**

201 Created
Location: http://host/api/v1/nat-svc/pool/marketing-nat-pool

Static NAT Rule Resource

A static NAT resource models static address translation where there is a one-to-one mapping between local and global IP addresses.

There are three types of one-to-one mapping NAT: static NAT, port static NAT, and network static NAT.

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>
## 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 “nat-static-rule”</td>
</tr>
<tr>
<td>nat-rule-id</td>
<td>string</td>
<td>Unique NAT rule id</td>
</tr>
<tr>
<td>mode</td>
<td>string</td>
<td>Indicates the source/destination IP field and the direction of traffic to apply NAT to. Allowed values are: “inside-source” and “outside-source”.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• “inside-source” refers to translating the source IP address for packets that enter the router from the inside interface, or to translating the destination address for packets that enter the router from the outside interface.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• “outside-source” refers to translating the source IP address for packets that enter the router through the outside interface, or to translating the destination IP address of packets that enter the router from the inside interface.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“mode” is optional for ip-network-mapping as the mode can only be “inside-source”.</td>
</tr>
<tr>
<td>ip-mapping</td>
<td>object</td>
<td>Specifies IP address based static NAT mapping. Mutually exclusive with ip-port-mapping and network-nat-mapping.</td>
</tr>
<tr>
<td>ip-mapping-local-ip</td>
<td>ipaddress</td>
<td>Local IP address assigned to host on the inside network. Specified in the format x.x.x.x</td>
</tr>
<tr>
<td>ip-mapping-global-ip</td>
<td>ipaddress</td>
<td>Establishes the globally unique IP address of an inside host as it appears to outside world. Specified in the x.x.x.x format</td>
</tr>
<tr>
<td>ip-port-mapping</td>
<td>object</td>
<td>Specifies IP address based static NAT mapping. Mutually exclusive with ip-port-mapping and network-nat-mapping.</td>
</tr>
<tr>
<td>ip-port-mapping-local-ip</td>
<td>ipaddress</td>
<td>Local IP address assigned to host on the inside network. Specified in the format x.x.x.x</td>
</tr>
<tr>
<td>ip-port-mapping-global-ip</td>
<td>ipaddress</td>
<td>Establishes the globally unique IP address of an inside host as it appears to outside world. Specified in the x.x.x.x format</td>
</tr>
<tr>
<td>ip-port-mapping-protocol</td>
<td>ipaddress</td>
<td>Protocol used. One of “TCP” or “UDP”. If protocol is not used, this property can be absent.</td>
</tr>
<tr>
<td>ip-port-mapping-local-port</td>
<td>number</td>
<td>Local IP address assigned to host on the inside network. Specified in the format x.x.x.x</td>
</tr>
<tr>
<td>ip-port-mapping-global-port</td>
<td>number</td>
<td>Global TCP/UDP port in the range 1-65535. Mandatory when local-port is used</td>
</tr>
<tr>
<td>ip-network-mapping</td>
<td>object</td>
<td>Specifies the subnet/network based static NAT translation</td>
</tr>
<tr>
<td>ip-network-mapping-local-network</td>
<td>string</td>
<td>Specifies the local subnet translation.</td>
</tr>
</tbody>
</table>
## Retrieve a Static NAT Rule

### Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td><code>/api/v1/nat-svc/static/{nat-pool-id}</code></td>
</tr>
</tbody>
</table>

### Example

**JSON Request**

```
GET /api/v1/nat-svc/static/eng-nat
Accept: application/json
```

**JSON Response of a Static NAT**

```
200 OK

Content-Type: application/json
{
    "kind": "object#nat-static-rule",
    "nat-rule-id": "eng-nat",
    "mode": "inside-source",
    "ip-mapping": {
        "local-ip": "172.16.50.8",
        "global-ip": "172.16.10.8"
    }
}
```

**JSON Response of a Port Static NAT Rule**

```
200 OK

Content-Type: application/json
{
    "kind": "object#nat-static-rule",
    "nat-rule-id": "eng-nat",
    "mode": "inside-source",
    "ip-port-mapping": {
        "protocol": "tcp",
        "local-ip": "172.16.10.8",
        "local-port": 8080,
        "global-ip": "172.16.10.8",
        "global-port": 80
    }
}
```
JSON Response of a Network Static NAT

200 OK

Content-Type: application/json

```json
{
    "kind": "object#nat-static-rule",
    "nat-rule-id": "eng-nat",
    "mode": "outside-source",
    "ip-network-mapping": {
        "local-network": "10.10.10.0",
        "global-network": "172.19.32.0",
        "mask": "255.255.255.0"
    }
}
```

Retrieve All Static NAT Rules

**Resource URI**

**Verb** | **URI**
--- | ---
GET | /api/v1/nat-svc/static

**Properties for Retrieve All**

<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. Always “collection#nat-static-rule”</td>
</tr>
<tr>
<td>items</td>
<td>array</td>
<td>Mandatory</td>
<td>Collection of static NAT rules with objects of type “object#nat-static-rule”</td>
</tr>
<tr>
<td>nat-rule-id</td>
<td>string</td>
<td>Mandatory</td>
<td>Unique NAT rule id</td>
</tr>
<tr>
<td>mode</td>
<td>string</td>
<td>Mandatory</td>
<td>Indicates the source/destination IP field and the direction of traffic to apply NAT to. Allowed values are: “inside-source” and “outside-source”. “inside-source” refers to translating source address for packets that enter router through inside. “outside-source” refers to translating source address for packets that enter router through outside.</td>
</tr>
<tr>
<td>ip-mapping</td>
<td>object</td>
<td>Mandatory</td>
<td>Specifies IP address based static NAT mapping. Mutually exclusive with ip-port-mapping and network-nat-mapping.</td>
</tr>
<tr>
<td>ip-mapping-local-ip</td>
<td>ipaddress</td>
<td>Mandatory</td>
<td>Local IP address assigned to host on the inside network. Specified in the format x.x.x.x.</td>
</tr>
</tbody>
</table>
### Static NAT Rule Resource

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Required for POST and PUT</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip-mapping-global-ip</td>
<td>ipaddress</td>
<td>Mandatory</td>
<td>Establishes the globally unique IP address of an inside host as it appears to outside world. Specified in the x.x.x.x format.</td>
</tr>
<tr>
<td>ip-port-mapping</td>
<td>object</td>
<td>Mandatory</td>
<td>Specifies IP address based static NAT mapping. Mutually exclusive with ip-port-mapping and network-nat-mapping.</td>
</tr>
<tr>
<td>ip-port-mapping-local-ip</td>
<td>ipaddress</td>
<td>Mandatory</td>
<td>Local IP address assigned to host on the inside network. Specified in the format x.x.x.x</td>
</tr>
<tr>
<td>ip-port-mapping-global-ip</td>
<td>ipaddress</td>
<td>Mandatory</td>
<td>Establishes the globally unique IP address of an inside host as it appears to outside world. Specified in the x.x.x.x format.</td>
</tr>
<tr>
<td>ip-port-mapping-protocol</td>
<td>ipaddress</td>
<td>Mandatory</td>
<td>Protocol used. One of “TCP” or “UDP”. If protocol is not used, this property can be absent.</td>
</tr>
<tr>
<td>ip-port-mapping-local-port</td>
<td>number</td>
<td>Mandatory</td>
<td>Local IP address assigned to host on the inside network. Specified in the format x.x.x.x</td>
</tr>
<tr>
<td>ip-port-mapping-global-port</td>
<td>number</td>
<td>Mandatory when local-port is used</td>
<td>Global TCP/UDP port in the range 1-65535.</td>
</tr>
<tr>
<td>ip-network-mapping</td>
<td>object</td>
<td>Mandatory</td>
<td>Specifies the subnet/network based static NAT translation</td>
</tr>
<tr>
<td>ip-network-mapping-local-network</td>
<td>string</td>
<td>Mandatory</td>
<td>Specifies the local subnet translation.</td>
</tr>
<tr>
<td>ip-network-mapping-global-network</td>
<td>N/A</td>
<td>Mandatory</td>
<td>Specifies the global subnet translations.</td>
</tr>
<tr>
<td>ip-network-mapping-mask</td>
<td>string</td>
<td>Mandatory</td>
<td>Specifies the IP network mask to be used with subnet translations.</td>
</tr>
</tbody>
</table>

**JSON Representation**

```json
{
    "kind": "object#nat-static-rule",
    "nat-rule-id": "{string}",
    "mode": "{string}",
    "ip-mapping": {
        "local-ip": "{ipaddress}",
        "global-ip": "{ipaddress}"
    },
```
Chapter 14      Network Address Translation (NAT)

Static NAT Rule Resource

```
"ip-port-mapping":{
  "protocol":       "(string)",
  "local-ip":       "(ipaddress)",
  "local-port":      (number),
  "global-ip":       "(ipaddress)",
  "global-port":      (number)
},
"ip-network-mapping":{
  "local-network": "(string)",
  "global-network": "(string)",
  "mask": "(string)"
}
```

Example

**JSON Request**

GET /api/v1/nat-svc/static
Accept: application/json

**JSON Response**

200 ok

Content-type: application/json

```
{
  "kind": "collection#nat-static-rule,
  "items": [
    {
      "kind": "object#nat-static-rule",
      "nat-rule-id" : "eng-nat",
      "mode": "inside-source",
      "ip-mapping": {
        "local-ip" : "172.16.50.8",
        "global-ip": "172.15.15.1"
      }
    },
    {
      "kind": "object#nat-static-rule",
      "nat-rule-id" : "doc-nat",
      "mode": "inside-source",
      "ip-port-mapping":{
        "protocol": "tcp",
        "local-ip" : "172.16.10.7",
        "local-port": 8080,
        "global-ip": "172.16.10.8",
        "global-port":80
      }
    },
    {
      "kind": "object#nat-static-rule",
      "nat-rule-id" : "finance-nat",
      "mode": "outside-source",
```

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"ip-network-mapping":{
    "local-network": "10.10.20.0",
    "global-network": "172.19.32.0",
    "mask": "255.255.255.0"
}


Modify a Static NAT Rule

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUT</td>
<td>/api/v1/nat-svc/static/{nat-pool-id}</td>
</tr>
</tbody>
</table>

Example Request of a Static NAT Rule

JSON Request

PUT /api/v1/nat-svc/static/eng-nat

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

{
    "nat-rule-id" : "eng-nat",
    "mode":           "inside-source",
    "ip-mapping": {
        "local-ip" : "172.16.50.8",
        "global-ip" : "172.15.15.1"
    }
}

Example Request of a Port Static NAT Rule

JSON Request

{
    "kind":           "object#nat-static-rule",
    "nat-rule-id" :   "doc-nat",
    "mode":           "inside-source",
    "ip-port-mapping":{
        "protocol":        "tcp",
        "local-ip" :       "172.16.10.7",
        "local-port":      8080,
        "global-ip" :      "172.16.10.8",
        "global-port":     80
    }
}

Example Request of a Network Static NAT

JSON Request

{
    "kind":           "object#nat-static-rule",
    "nat-rule-id" :   "doc-nat",
    "mode":           "inside-source",
    "ip-port-mapping":{
        "protocol":        "tcp",
        "local-ip" :       "172.16.10.7",
        "local-port":      8080,
        "global-ip" :      "172.16.10.8",
        "global-port":     80
    }
}
Static NAT Rule Resource

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"nat-rule-id": "finance-nat",
"mode": "outside-source",
"ip-network-mapping": {
    "local-network": "10.10.20.0",
    "global-network": "172.19.32.0",
    "mask": "255.255.255.0"
}
}

JSON Response
204 No Content

Delete a Static NAT Rule

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELETE</td>
<td>/api/v1/nat-svc/static/{nat-pool-id}</td>
</tr>
</tbody>
</table>

Example

JSON Request
DELETE /api/v1/nat-svc/static/marketing-nat-pool
Accept: application/json

JSON Response
204 No Content

Create a Static NAT Rule

Resource URI

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

Example Request of a Static NAT Rule

JSON Request
POST /api/v1/nat-svc/static

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

{  
    "nat-rule-id": "eng-nat",
    "mode": "inside-source",
    "ip-mapping": {  
}  
}
"local-ip" : "172.16.50.8",
"global-ip" : "172.15.15.1"
)

Example Request of a Port Static NAT Rule

**JSON Request**

POST /api/v1/nat-svc/static

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

{
  "nat-rule-id" : "doc-nat",
  "mode": "inside-source",
  "ip-port-mapping": {
    "protocol": "tcp",
    "local-ip" : "172.16.10.7",
    "local-port": 8080,
    "global-ip" : "172.16.10.8",
    "global-port": 80
  }
}

Example Request of a Network Static NAT

**JSON Request**

POST /api/v1/nat-svc/static

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

{
  "nat-rule-id" : "finance-nat",
  "mode": "outside-source",
  "ip-network-mapping": {
    "local-network": "10.10.20.0",
    "global-network": "172.19.32.0",
    "mask": "255.255.255.0"
  }
}

**JSON Response**

201 Created

Location: http://host/api/v1/nat-svc/static/finance-nat

Dynamic NAT Rule Resource

Packets with source and/or destination addresses that pass the access list are dynamically translated using global addresses from the named pool.
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>kind</td>
<td>string</td>
<td>Mandatory</td>
<td>Object type. Always &quot;object#nat-dynamic-rule&quot;</td>
</tr>
<tr>
<td>nat-rule-id</td>
<td>string</td>
<td>Mandatory</td>
<td>Unique NAT rule id</td>
</tr>
<tr>
<td>mode</td>
<td>string</td>
<td>Mandatory</td>
<td>Indicates the source/destination IP field and the direction of traffic to apply NAT to. Allowed values are: “inside-source” and “outside-source” &amp; “inside-destination” “inside-source” refers to translating source address for packets that enter router through inside . “outside-source” refers to translating source address for packets that enter router through outside . “inside-destination” refers to translating destination address for packets that enter router through inside</td>
</tr>
<tr>
<td>acl-id</td>
<td>name</td>
<td>Mandatory</td>
<td>ACL resource id that defines the ACL for this dynamic NAT</td>
</tr>
<tr>
<td>nat-pool-id</td>
<td>string</td>
<td>Mandatory</td>
<td>NAT pool to use. Refers to the NAT pool resource id.</td>
</tr>
<tr>
<td>pat-enabled</td>
<td>boolean</td>
<td>Optional</td>
<td>Specifies if Port Address translation to be enabled.</td>
</tr>
</tbody>
</table>

JSON Representation

```
{
    "kind": "object#nat-dynamic-rule",
    "nat-rule-id": "{string}" ,
    "mode": "{string}" ,
    "acl-id": {number} ,
    "nat-pool-id": 
    "pat-enabled": {boolean}
}
```
Retrieve a Dynamic NAT Rule

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>/api/v1/nat-svc/dynamic/{nat-rule-id}</td>
</tr>
</tbody>
</table>

Example

**JSON Request**

GET /api/v1/nat-svc/dynamic/dyn-nat
Accept: application/json

**JSON Response**

200 ok

Content-type: application/json

```
{
  "kind": "object#nat-dynamic-rule",
  "nat-rule-id": "dyn-nat",
  "mode": "outside-source",
  "acl-id": "natacl",
  "nat-pool-id": "nat-pool",
  "pat-enabled": false
}
```

Retrieve All Dynamic NAT Rules

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>/api/v1/nat-svc/dynamic</td>
</tr>
</tbody>
</table>

Properties for Retrieve All

<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>Mandatory</td>
<td>Object type. Always “collection#nat-dynamic-rule”</td>
</tr>
<tr>
<td>items</td>
<td>array</td>
<td>Mandatory</td>
<td>Collection of nat-dynamic-rule objects</td>
</tr>
<tr>
<td>nat-rule-id</td>
<td>string</td>
<td>Mandatory</td>
<td>Unique NAT rule id</td>
</tr>
</tbody>
</table>
Dynamic NAT Rule Resource

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Required for POST and PUT</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>mode</td>
<td>string</td>
<td>Mandatory</td>
<td>Indicates the source/destination IP field and the direction of traffic to apply NAT to. Allowed values are: “inside-source” and “outside-source” &amp; “inside-destination”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“inside-source” refers to translating source address for packets that enter router through inside.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“outside-source” refers to translating source address for packets that enter router through outside.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“inside-destination” refers to translating destination address for packets that enter router through inside.</td>
</tr>
<tr>
<td>acl-id</td>
<td>name</td>
<td>Mandatory</td>
<td>ACL resource id that defines the ACL for this dynamic NAT.</td>
</tr>
<tr>
<td>nat-pool-id</td>
<td>string</td>
<td>Mandatory</td>
<td>NAT pool to use. Refers to the NAT pool resource id.</td>
</tr>
<tr>
<td>pat-enabled</td>
<td>boolean</td>
<td>Optional</td>
<td>Specifies if Port Address translation to be enabled.</td>
</tr>
</tbody>
</table>

**JSON Representation**

```
{
  "kind" : "collection#nat-dynamic-rule",
  "items" : [
    (dynamic nat rule json object)+
  ]
}
```

**Example**

**JSON Request**

GET /api/v1/nat-svc/dynamic
Accept: application/json

**JSON Response**

200 OK
Content-type: application/json

```
{
  "kind": "collection#nat-dynamic-rule",
  "items": [
    {
      "kind": "object#nat-dynamic-rule",
      "nat-rule-id" : "dyn-nat1",
      "mode": "outside-source",
      "acl-id" : "eng-acl",
    }
  ]
}
```
Dynamic NAT Rule Resource

```
"nat-pool-id"  :  "nat-pool",
"pat-enabled" :  true
},
{
  "kind"  :  "object#nat-dynamic-rule",
  "nat-rule-id"  :  "dyn-nat2",
  "mode"  :  "outside-source",
  "acl-id"  :  "mktg-acl",
  "nat-pool-id"  :  "natPool",
  "pat-enabled" :  false
}
```

**JSON Response**

204 No Content

**Modify a Dynamic NAT Rule**

**Resource URI**

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUT</td>
<td>/api/v1/nat-svc/dynamic/{nat-rule-id}</td>
</tr>
</tbody>
</table>

**Example**

**JSON Request**

PUT /api/v1/nat-svc/dynamic/dyn-nat

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

```json
{
  "nat-rule-id" :  "dyn-nat",
  "mode" :  "outside-source",
  "acl-id" :  "natacl",
  "nat-pool-id" :  "nat-pool",
  "pat-enabled" :  true
}
```

**JSON Response**

204 No Content
Delete a Dynamic NAT Rule

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELETE</td>
<td>/api/v1/nat-svc/dynamic/{nat-rule-id}</td>
</tr>
</tbody>
</table>

Example

**JSON Request**
DELETE /api/v1/nat-svc/dynamic/dyn-nat
Accept: application/json

**JSON Response**
204 No Content

Create a Dynamic NAT Rule

Resource URI

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>POST</td>
<td>/api/v1/nat-svc/dynamic</td>
</tr>
</tbody>
</table>

Example

**JSON Request**
POST /api/v1/nat-svc/dynamic
Accept: application/json
Content-type: application/json

```json
{
    "nat-rule-id": "dyn-nat1",
    "mode": "outside-source",
    "acl-id": "qa-acl",
    "nat-pool-id": "nat-pool",
    "pat-enabled": true
}
```

**JSON Response**
201 Created
Location: http://host/api/v1/nat-svc/dynamic/dyn-nat-1
NAT Translations Resource

NAT Translation resource represents the active NAT translations.

This resource supports only:

- Retrieve all NAT translations: All relevant properties are shown in the tables below.
- Clear all NAT translations: Uses the POST operation and an **action** property described in Clear All NAT Translations, page 14-21.

**History**

<table>
<thead>
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<th>Modification</th>
</tr>
</thead>
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<tr>
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</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#nat-translation”</td>
</tr>
<tr>
<td>items [ ]</td>
<td>array</td>
<td>Collection of NAT translation objects</td>
</tr>
<tr>
<td>kind</td>
<td>string</td>
<td>Object type. Always “object#nat-translation”</td>
</tr>
<tr>
<td>protocol</td>
<td>string</td>
<td>Protocol of the port identifying the address.</td>
</tr>
<tr>
<td>inside-global-address</td>
<td>ipaddress</td>
<td>The legitimate IP address that represents one or more inside local IP addresses to the outside world.</td>
</tr>
<tr>
<td>inside-local-address</td>
<td>ipaddress</td>
<td>The IP address assigned to a host on the inside network</td>
</tr>
<tr>
<td>inside-global-port</td>
<td>number</td>
<td>The port identifying the inside global address.</td>
</tr>
<tr>
<td>inside-local-port</td>
<td>number</td>
<td>The port identifying the inside local address.</td>
</tr>
<tr>
<td>outside-local-address</td>
<td>ipaddress</td>
<td>IP address of an outside host as it appears to the inside network</td>
</tr>
<tr>
<td>outside-global-address</td>
<td>ipaddress</td>
<td>The port identifying the outside local address.</td>
</tr>
<tr>
<td>outside-local-port</td>
<td>number</td>
<td>The port identifying the outside local address.</td>
</tr>
<tr>
<td>outside-global-port</td>
<td>number</td>
<td>The port identifying the outside global address.</td>
</tr>
</tbody>
</table>
NAT Translations Resource

**JSON Representation**

```
{
  "kind": "collection#nat-translation",
  "items": [
    {
      "kind": "object#nat-translation",
      "protocol": "{string}",
      "inside-global-address": "{ipaddress}",
      "inside-global-port": {number},
      "inside-local-address": "{ipaddress}",
      "inside-local-port": {number},
      "outside-global-address": "{ipaddress}",
      "outside-global-port": {number},
      "outside-local-address": "{ipaddress}",
      "outside-local-port": {number}
    }
  ]
}
```

**Retrieve All NAT Translations**

**Resource URI**

<table>
<thead>
<tr>
<th>Verb</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>/api/v1/nat-svc/translations</td>
</tr>
</tbody>
</table>

**Example**

**JSON Request**

GET /api/v1/nat-svc/translations
Accept: application/json

**JSON Response**

200 ok
Content-type: application/json

```
{
  "kind": "collection#nat-translation",
  "items": [
    {
      "kind": "object#nat-translation",
      "protocol": "TCP",
      "inside-global-address": "172.16.223.288",
      "inside-global-port": 0,
      "inside-local-address": "192.168.1.95",
      "inside-local-port": 0,
      "outside-global-address": "",
      "outside-global-port": 0,
      "outside-local-address": "",
      "outside-local-port": 0
    }
  ]
}
```
Clear All NAT Translations

The NAT translations resource supports the clearing of active translations and all automatic bindings on the router. Use POST as shown below.

**Note**
The action property is applicable only for this operation.

### Properties for the POST Operation

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Required for POST and PUT</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>action</td>
<td>string</td>
<td>Mandatory</td>
<td>“clear”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Clears active translations and automatic bindings on the router.</td>
</tr>
</tbody>
</table>

### Example

**JSON Request**

POST /api/v1/nat-svc/translations

Accept: application/json

{
  "action": "clear"
}

**JSON Response**

204 No Content