

How do I perform multiple operations on my NetScaler appliance by using single NITRO API call

One of the most basic sets of API operations used frequently by administrators is one that creates a set of lbvservers, services, and service groups, and adds the necessary bindings. This and similar tasks used to require multiple NITRO API commands, because the NITRO API did not support bulk configuration. Customers needed an API that could reduce network traffic by optimizing the execution of multiple tasks.

NetScaler release 11.1 introduced an API resource called *macroapi*, with which you can configure heterogeneous resources with a single API command.

Points to remember:

- Only homogenous operations are supported in a single macroapi request. For example, multiple load balancing virtual servers can be created (POST method) but cannot be updated (PUT method) or deleted (DELETE method) in the same macroapi request.

- NITRO handles each request in an atomic manner.

- Failures can be handled by using the X-NITRO-ONERROR http header, which specifies what to do when any of the calls in the bulk request fails. Possible options are continue, exit (the default), and rollback (for ADD or BIND operations only).

- To delete multiple resources when using MACRO API, you must use the POST HTTP method with an action=remove query parameter in the request URL

Example1:

Request for creation: Add 2 lbvservers, 5 services, and 1 service group, add members to the service group, bind service(s) to the lbvserver(s) and bind the service group to lbvserver(s).

- URL: `http://<NSIP>/nitro/v1/config/macroapi`
- HTTP Method: POST
- Request Headers
 - Content-Type: application/json
 - X-NITRO-ONERROR: exit
- Payload:

```
{
  "lbvserver":
  [
    {"name":"lbvserver1","servicetype":"http"},
    {"name":"lbvserver2","servicetype":"http"}
  ],

  "service":
  [
    {"name":"service1", "servername":"10.102.216.115", "port":"80", "servicetype":"http"},
    {"name":"service2", "servername":"10.102.216.108", "port":"80", "servicetype":"http"},
```

```

{"name":"service3","servername":"10.102.216.109", "port":"80","servicetype":"http"},
{"name":"service4","servername":"10.102.216.54", "port":"80","servicetype":"http"},
{"name":"service5","servername":"10.102.216.175", "port":"80","servicetype":"http"}
],

"lbvserver_service_binding":
[
{"name":"lbvserver1", "servicename":"service1"},
{"name":"lbvserver1", "servicename":"service2"},
{"name":"lbvserver1", "servicename":"service3"},
{"name":"lbvserver2", "servicename":"service4"},
{"name":"lbvserver2", "servicename":"service5"}
],

"serviceGroup":
[
  { "servicegroupname": "servicegroup1", "servicetype": "HTTP" }
],

"servicegroup_servicegroupmember_binding":
[
  { "servername":"10.105.157.72", "servicegroupname":"servicegroup1", "port":"80"},
  { "servername":"10.105.157.246", "servicegroupname":"servicegroup1", "port":"80"}
],

"lbvserver_servicegroup_binding":
[
  { "name":"lbvserver1", "servicegroupname":"servicegroup1" }
]
}

```

Example2:

Request for update operations: Update lbmethod for 2 lbvservers and timeout for servicegroup

- URL: <http://<NSIP>/nitro/v1/config/macroapi>
- HTTP Method: PUT
- Request Headers
 - Content-Type: application/json
 - X-NITRO-ONERROR: exit
- Payload:


```

{
"lbvserver":
[

```

```

        {"name":"lbserver1","lbmethod":"roundrobin"},
        {"name":"lbserver2","lbmethod":"roundrobin"}
    ],
    "serviceGroup":
    [
        {"servicegroupname": "servicegroup1", "svrtimeout": "10" }
    ]
}

```

Example3:

Request for deletion: Delete 2 lbvserver, 5 services and 1 servicegroup

- URL: <http://<NSIP>/nitro/v1/config/macroapi?action=remove>
- HTTP Method: POST
- Request Headers
 - Content-Type: application/json
 - X-NITRO-ONERROR: exit
- Payload:


```

{
  "lbvserver":
  [
    {"name":"lbserver1"},
    {"name":"lbserver2"}
  ],
  "service":
  [
    {"name":"service1"},
    {"name":"service2"},
    {"name":"service3"},
    {"name":"service4"},
    {"name":"service5"}
  ],
  "serviceGroup":
  [
    {"servicegroupname": "servicegroup1"}
  ]
}

```