

Junosphere API Developer Guide

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Junosphere API Overview

The Junosphere API allows users to programmatically perform any operation with the Junosphere product that can be done through the user interface. The Junosphere API follows industry-standard RESTful practices and procedures. Developers can develop RESTful clients using a wide range of programming languages or tools and develop their own interfaces with the Junosphere product.

Security and Authentication

Access to the Junosphere RESTful API is over SSL (that is, HTTPS), to ensure that all communication between your client and Junosphere is secure.

Any call that you make to the Junosphere API must be accompanied by the appropriate authentication information. Junosphere supports HTTP Basic as the only authentication mechanism. Therefore, every HTTP request to the API must include the Basic authorization header.

Headers

Two headers that most HTTP requests to the Junosphere API require are:

- **Accept**—This optional header indicates the format in which the client wants Junosphere to respond. The format can be JSON or XML. JSON is the default format of the server response.
- **Content-Type**—This header indicates the format of the data being sent by the client to Junosphere. This header is mandatory for all POST or PUT requests, which also send data to the server in the request.

Table 1: Header Formats

Header	JSON	XML
Accept	<code>application/json;version=1</code>	<code>application/xml;version=1</code>
Content-Type	<code>application/json;charset=UTF-8;version=1</code>	<code>application/xml;charset=UTF-8;version=1</code>

Using the Junosphere API

Users can automate and perform tasks outside of the Junosphere GUI. These topics provide some sample tasks:

- [Changing User Passwords on page 3](#)
- [Assigning Capacity to a Sandbox on page 4](#)
- [Deallocating Capacity from a Sandbox on page 6](#)
- [Viewing Sandbox Reservations on page 7](#)
- [Creating a New Reservation on page 8](#)

- [Canceling a Reservation on page 8](#)
- [Obtaining VM IP Addresses on page 9](#)

Changing User Passwords

To change the user password:

1. Obtain the ID of the user whose password is to be changed by listing all users.

Authentication	Username and password as an HTTP Basic authentication header.
HTTP Method	GET
URL	https://junosphere.net/api/userService/users

Here is a sample response:

```
{
  "users": {
    "user": [{
      "id": 64,
      "customer": {
        "id": 67,
        "masterAccountId": "NMCo",
        "name": "NMCorp",
        "address": ""
      },
      "username": "nm1",
      "emailAddress": "",
      "name": "",
    }, {
      "id": 144,
      "customer": {
        "id": 67,
        "masterAccountId": "NMCo",
        "name": "NMCorp",
        "address": ""
      },
      "username": "nm2",
      "emailAddress": "",
      "name": ""
    }
  ]
}
```

Iterate through the list of users (the `users.user` array) in the response until you find the ID of the user whose password is being changed.

A status code of 200 indicates that the API call was successful. A status code of 401 indicates that the username or password provided is incorrect.

2. Change the user password with the following information:

Authentication	Username and password of any bank administrator. This operation can be performed only by a bank administrator.
HTTP Method	PUT

URL <https://junosphere.net/api/userService/users/{id}> where *{id}* is the ID of the user whose password is to be modified

```
Sample Request  {
                  "user": {
                    "password": "123_New_Password"
                  }
                }
```

Here is a sample response:

```
{
  "user": [{
    "id": 64,
    "customer": {
      "id": "67",
      "masterAccountId": "NMCo"
    },
    "name": "NMCorp",
    "address": ""
  },
  "username": "nm1",
}]
}
```

A successful response status code of 200 indicates that the password of the specified user was changed to the given value.

Assigning Capacity to a Sandbox

To assign capacity to a sandbox:

1. Retrieve the bank ID from the serial number for the bank. You can obtain the serial number using the Junosphere GUI.

Authentication	Username and password of any user with access to the bank.
----------------	--

HTTP Method	GET
-------------	-----

URL <https://junosphere.net/api/bankService/banks?serialNumber={serial-number}> where *{serial-number}* is the serial number of the bank

Here is a sample response:

```
{
  "banks": {
    "bank": {
      "id": 181,
      "serialNumber": 898,
      "customer": {
        "id": 67,
        "masterAccountId": "NMCo",
        "name": "NMCorp",
        "address": ""
      },
      "name": "NM4",
      "description": "",
      "emailAlias": "b181@banks.junosphere.net",
    }
  }
}
```

```

    "aliasEnabled": true,
    "expirationDateTime": "2014-06-24T00:00:00.000Z",
    "imageCategories": [
      "JUNIPER_SUPPORTED",
      "PARTNER",
      "APP_SERVER",
      "EXPERIMENTAL"
    ]
  }
}
}

```

2. Obtain the ID of the sandbox and the capacity information for the bank. Determine the ID of the bank from the **banks.bank.id** object in the sample response for step 1.

Authentication	Username and password of any user with access to the bank.
HTTP Method	GET
URL	https://junosphere.net/api/bankService/banks/{id} where <i>{id}</i> is the ID of the bank

Here is a sample response:

```

{
  "bank": {
    "id": 181,
    "serialNumber": 898,
    "customer": {
      "id": 67,
      "masterAccountId": "NMCo",
      "name": "NMCorp",
      "address": ""
    },
    "name": "NM4",
    "description": "",
    "sandboxes": [
      {
        "id": 443,
        "name": "py1"
      },
      {
        "id": 442,
        "name": "Default Sandbox - LAB"
      },
      {
        "id": 444,
        "name": "py2"
      },
      {
        "id": 445,
        "name": "py3"
      }
    ]
  },
  "capacities": {
    "capacity": {
      "id": 187,
      "product": "Junosphere Lab",
      "annual": false,
      "available": 12,
      "quantity": 20,
    },
    "expirationDateTime": "2014-06-24T00:00:00.000Z",
  }
}

```

```

    "emailAlias": "b181@banks.junosphere.net",
    "aliasEnabled": true,
    "expirationDateTime": "2014-06-24T00:00:00.000Z",
    "imageCategories": [
      "JUNIPER_SUPPORTED",
      "PARTNER",
      "APP_SERVER",
      "EXPERIMENTAL"
    ]
  }
}
}

```

From the sample response, you need to obtain:

- a. The ID of the capacity (assigned to the bank) that you want to assign to the sandbox. Determine this capacity ID by iterating over the **bank.capacities.capacity** array and noting the ID of the entry that matches the product in which you are interested.
 - b. The ID of the sandbox to which you want to assign capacity. Determine this sandbox ID by iterating over the **bank.sandboxes.sandbox** array until you find the ID of the entry that matches the name of the sandbox in which you are interested.
3. Assign the capacity to the sandbox.

Authentication	Username and password of a bank administrator.
HTTP Method	POST
URL	https://junosphere.net/api/capacityService/capacities/regular/{capacity-id}/assign?quantity={assigned-quantity}&sandboxId={sandbox-id} where <i>{capacity-id}</i> is the ID of the capacity assigned to the bank, <i>{assigned-quantity}</i> is the quantity to be assigned, and <i>{sandbox-id}</i> is the ID of the sandbox to which the capacity is assigned

A successful response status code of 200 indicates that the capacity was assigned.

Deallocating Capacity from a Sandbox

To deallocate capacity from a sandbox:

1. Obtain the ID of the capacity assigned to the sandbox by obtaining the bank details. See steps 1 and 2 of [“Assigning Capacity to a Sandbox” on page 4](#).

From the list of capacities, determine the capacity ID assigned to the sandbox by iterating over the **bank.capacities.capacity** array and noting the ID of the entry that matches the product in which you are interested. Within that entry, you iterate over the **sandboxCapacities** array until you find the sandbox in which you are interested.

2. Deallocate the capacity from the sandbox.

Authentication	Username and password of a bank administrator.
HTTP Method	POST

URL <https://junosphere.net/api/capacityService/capacities/regular/{capacity-id}/unassign?quantity={quantity-to-deallocate}> where {capacity-id} is the ID of the capacity assigned to the sandbox and {quantity-to-deallocate} is the capacity to be deallocated from the sandbox

A successful response status code of 200 indicates that the capacity was deallocated.

Viewing Sandbox Reservations

To view the reservations in a sandbox:

1. Obtain the ID of the sandbox in which you are interested by calling the API described in steps 1 and 2 of “Assigning Capacity to a Sandbox” on page 4.

Iterate over the **bank.sandboxes.sandbox** array until you find the matching sandbox name.

2. Load the sandbox to view its reservations.

Authentication Username and password of any user with access to this sandbox.

HTTP Method GET

URL <https://junosphere.net/api/sandboxService/sandboxes/{sandbox-id}> where {sandbox-id} is the ID of sandbox

Here is a sample response:

```
{
  "sandbox": {
    "id": 443,
    "name": "py1",
    "topologyType": 1,
    "reservations": {
      "reservation": {
        "id": 613,
        "numberOfVMUnits": 2,
        "numberOfConnectors": 0,
        "startDateTime": "2013-06-25T03:43:00.000Z",
        "numberOfTimeUnits": 1,
        "endDateTime": "2013-06-26T03:43:00.000Z",
        "state": "ACTIVE",
        "notifySandbox": false,
        "autoSave": false
      }
    }
  },
  "emailAlias": "s443@sandboxes.junosphere.net",
  "aliasEnabled": true,
  "capacity": {
    "regularVMUnits": {
      "available": 0,
      "reserved": 0
    }
  },
  "annualConnectors": {
    "minimum": 0,
    "maximum": 0,
  }
}
```

```

    "available": 0
  }
}
}
}

```

If you receive a successful 200 response, then you can view all the reservations of the sandbox in the `sandbox.reservations.reservation` array.

Creating a New Reservation

To create a new reservation:

1. Obtain the ID of the sandbox in which you are creating the reservation by invoking the API described in steps 1 and 2 of “Assigning Capacity to a Sandbox” on page 4.
2. Create the reservation.

Authentication	Username and password of any user with RESERVATION MANAGEMENT permissions on the sandbox.
HTTP Method	POST
URL	https://junosphere.net/api/sandboxService/sandboxes/{sandbox-id}/reservations where <i>{sandbox-id}</i> is the ID of sandbox
Sample Request	<pre> { reservation: { numberOfVMUnits: 2, numberOfTimeUnits: 5, startDateTime: "2013-05-30T09:30:10-06:00" } } </pre>

A response status code of 200 indicates that the reservation was created successfully.

Canceling a Reservation

To cancel a reservation:

1. Obtain the ID of the sandbox and the reservation that you are canceling by invoking the API described in steps 1 and 2 of “Assigning Capacity to a Sandbox” on page 4.
2. Cancel the reservation.

Authentication	Username and password of any user with RESERVATION MANAGEMENT permissions on the sandbox.
HTTP Method	DELETE
URL	https://junosphere.net/api/sandboxService/sandboxes/{sandbox-id}/reservations?reservationId={reservation-id} where <i>{sandbox-id}</i> is the ID of sandbox and <i>{reservation-id}</i> is the ID of the reservation to be canceled

A status code of 200 indicates that the reservation has been canceled.

Obtaining VM IP Addresses

You can obtain information about the management IP addresses of the active VMs in a sandbox in different formats.

- [Obtaining VM Information in JSON or XML Format on page 9](#)
- [Obtaining VM Information in CSV Format on page 10](#)

Obtaining VM Information in JSON or XML Format

To obtain the management IP addresses of the active VMs in a sandbox:

1. Obtain the ID of the sandbox in which you have an active topology by calling the API described in steps 1 and 2 of [“Assigning Capacity to a Sandbox” on page 4](#).

Iterate over the `bank.sandboxes.sandbox` array until you find the matching sandbox name.

2. Retrieve information about the VMs.

Authentication	Username and password of any user with access to this sandbox.
HTTP Method	GET
URL	https://junosphere.net/api/sandboxService/sandboxes/{sandbox-id}/active/vmachines where <code>{sandbox-id}</code> is the ID of sandbox

Here is a sample response:

```
{
  "vmachines": {
    "vmachine": [{
      "name": "VMX0",
      "state": "UP",
      "ip": "10.233.255.168",
      "port": "telnet 10.233.255.254 1001",
      "ssh": "ssh root@10.233.255.168"
    }, {
      "name": "VMX1",
      "state": "UP",
      "ip": "10.233.255.203",
      "port": "telnet 10.233.255.254 1002",
      "ssh": "ssh root@10.233.255.203"
    }, {
      "name": "VMX2",
      "state": "UP",
      "ip": "10.233.255.163",
      "port": "telnet 10.233.255.254 1003",
      "ssh": "ssh root@10.233.255.163"
    }
  ]
}
```

Iterate over the `vmachines.vmachine` array. The `ip` attribute is the management IP address of the corresponding VM.

Obtaining VM Information in CSV Format

To obtain the management IP addresses of the active VMs in a sandbox:

1. Obtain the ID of the sandbox in which you have an active topology by calling the API described in steps 1 and 2 of “[Assigning Capacity to a Sandbox](#)” on page 4.

Iterate over the `bank.sandboxes.sandbox` array until you find the matching sandbox name.

2. Retrieve information about the VMs in CSV format.

Authentication	Username and password of any user with access to this sandbox.
HTTP Method	GET
URL	https://junosphere.net/api/sandboxService/sandboxes/{sandbox-id}/active/vmachines/export where <code>{sandbox-id}</code> is the ID of sandbox

Here is a sample response:

```
Name,State,IP Address,Console
"VMX0","UP","10.233.255.168","telnet 10.233.255.254 1001"
"VMX1","UP","10.233.255.203","telnet 10.233.255.254 1002"
"VMX2","UP","10.233.255.163","telnet 10.233.255.254 1003"
```

The third column of the CSV list contains the management IP address of the corresponding VM.

Documentation and Release Notes

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

If the information in the latest release notes differs from the information in the documentation, follow the product Release Notes.

Juniper Networks Books publishes books by Juniper Networks engineers and subject matter experts. These books go beyond the technical documentation to explore the nuances of network architecture, deployment, and administration. The current list can be viewed at <http://www.juniper.net/books>.

Requesting Technical Support

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

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

Self-Help Online Tools and Resources

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

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

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

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

Opening a Case with JTAC

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

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

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

In order to open a case with JTAC for Junosphere, you must provide the bank serial number. To find the serial number, double-click on the bank icon in Junosphere.

Revision History

May 2014—Revision 1, Junosphere 3.0

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