**Restful API and Python**

Definitions:

Restful - Representational State Transfer (REST) architecture

JSON - JavaScript Object Notation (JSON)

**Lynda video doc on how to implement it quickly using**

**Requests** module

<https://www.lynda.com/Python-tutorials/REST-API-calls-from-Python/693093/746007-4.html>

* Python –m pip install requests

Yum install instead

<http://docs.python-requests.org/en/v1.0.0/community/out-there/>

$ yum install python-requests

**POST** creates an object

**PUT** modifies an existing object

**DELETE** removes an existing object

**GET** access information from and existing object

**JSON Placeholder** – A website to test calls against that will return api information

<https://jsonplaceholder.typicode.com/>

**NBU API** stuff from Jim

<https://urldefense.proofpoint.com/v2/url?u=https-3A__www.veritas.com_support_en-5FUS_doc_103228346-2D130198590-2D0_v130536212-2D130198590&d=DwMFAg&c=RoP1YumCXCgaWHvlZYR8PZh8Bv7qIrMUB65eapI_JnE&r=ixTcs77Ng9pElc3rIk5wpNXyZRvPZ5EC3DhY2lvJEFY&m=grneSA3Fo9v0mXTpvpHnyeIx8JcTnwa97xCooGdrqbs&s=t04s6IWUkWB9_lBxfBgO1Uv4K2pCtdpu7ivT7rPq7T8&e>=

>>> import requests

>>> url = 'https://jsonplaceholder.typicode.com/photos'

>>> response = requests.get(url)

**Questions about Python 3.x vs 2.7.x**

Curtis Hoffman [11:26 AM] OL7, python 2.7.5

Terry Carter [11:26 AM] Is it possible to go to 3.x?

Curtis Hoffman [11:26 AM] No OS dependent, but python 3.x can be installed as **alternate**

cURL

<https://stackoverflow.com/questions/25491090/how-to-use-python-to-execute-a-curl-command>

What is the web site of the web user interface on a given server?  
<https://www.veritas.com/support/en_US/article.100042950>

<https://adc094nbadmin01.us.oracle.com/webgui>

https://www.veritas.com/support/en\_US/doc/130706365-133278116-0/v133191867-133278116

When NetBackup is properly configured, you can access the master server at the following URL:

https://masterserver/webui/login

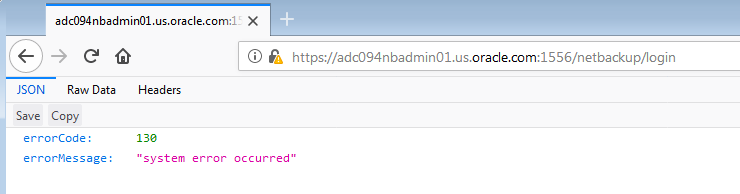
[root@adc094nbadmin01 tscarter]# netstat -tuplen | grep 1556

tcp 0 0 0.0.0.0:1556 0.0.0.0:\* LISTEN 0 393391298 15943/pbx\_exchange

tcp 0 0 :::1556 :::\* LISTEN 0 393391295 15943/pbx\_exchange

<https://sort.veritas.com/public/documents/nbu/8.1.1/windowsandunix/productguides/html/index/>

<https://sort.veritas.com/public/documents/nbu/8.1.2/windowsandunix/productguides/html/index/>



**First successful attempt**

# Attempt #5

import requests

url = 'https://adc094nbadmin01.us.oracle.com:1556/netbackup/login'

headers = {'content-type': 'application/vnd.netbackup+json;version=1.0',}

data = '{"domainName":"adc094nbadmin01", "userName":"tscarter", "password":"redacted" }'

response = requests.post(url, verify=False, headers=headers, data=data)

print (response.json)

[root@adc094nbadmin01 tscarter]# ./restapi.py

/usr/lib/python2.6/site-packages/urllib3/connectionpool.py:769: InsecureRequestWarning: Unverified HTTPS request is being made. Adding certificate verification is strongly advised. See: https://urllib3.readthedocs.org/en/latest/security.html

InsecureRequestWarning)

<bound method Response.json of <**Response [201]>>**

**To see the attributes**

print dir(response)

['\_\_attrs\_\_', '\_\_bool\_\_', '\_\_class\_\_', '\_\_delattr\_\_', '\_\_dict\_\_', '\_\_doc\_\_', '\_\_format\_\_', '\_\_getattribute\_\_', '\_\_getstate\_\_', '\_\_hash\_\_', '\_\_init\_\_', '\_\_iter\_\_', '\_\_module\_\_', '\_\_new\_\_', '\_\_nonzero\_\_', '\_\_reduce\_\_', '\_\_reduce\_ex\_\_', '\_\_repr\_\_', '\_\_setattr\_\_', '\_\_setstate\_\_', '\_\_sizeof\_\_', '\_\_str\_\_', '\_\_subclasshook\_\_', '\_\_weakref\_\_', '\_content', '\_content\_consumed', 'apparent\_encoding', 'close', 'connection', 'content', 'cookies', 'elapsed', 'encoding', 'headers', 'history', 'is\_permanent\_redirect', 'is\_redirect', 'iter\_content', 'iter\_lines', 'json', 'links', 'ok', 'raise\_for\_status', 'raw', 'reason', 'request', 'status\_code', 'text', 'url']

print response.content

{"token":"eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiJ9.eyJpYXQiOjE1NTIwNjUyNTE2NDAsImlzcyI6Im5idV9tYXN0ZXIiLCJqdGkiOiJaQlROSUFEWkVHVlhGWlBUIiwiZXhwIjoxNTUyMTUxNjUxNjM2LCJzdWIiOiJhZGMwOTRuYmFkbWluMDE6dHNjYXJ0ZXI6cGFtIiwiYXV0aF90b2tlbiI6IlpCVE5JQURaRUdWWEZaUFQiLCJpc19hZG1pbiI6ImZhbHNlIiwiaXNfbWFjaGluZSI6ImZhbHNlIiwiYXV0aHpfY29udGV4dCI6eyJEZWZhdWx0VXNlckFjY2VzcyI6WyIqIl19fQ.QwmovEpUEOF4b2USX1P55hIpoZiBmsxTO0TqnYKn7Yo93VXqu73\_79rzFwNoU2ae4qGhT3pA07TSHXrSE7lqc9hDIviBDti\_nLcGmj7ulE9BLgduAQj-axz9Fiu46QD1fzgdxZp8zlbPuXbRCTgo410v7p4nuWC3mXkCyn0evZY","tokenType":"BEARER","validity":86400}

protocol = "https"

nbmaster = ""

port = 1556

base\_url = protocol + "://" + nbmaster + ":" + str(port) + "/netbackup"

# base\_url = “https://adc094nbadmin01.us.oracle.com:1556/netbackup”

jwt = api\_requests.perform\_login(username, password, base\_url, domainname, domaintype)

#jwt=“eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiJ9.eyJpYXQiOjE1NTIwNjUyNTE2NDAsImlzcyI6Im5idV9tYXN0ZXIiLCJqdGkiOiJaQlROSUFEWkVHVlhGWlBUIiwiZXhwIjoxNTUyMTUxNjUxNjM2LCJzdWIiOiJhZGMwOTRuYmFkbWluMDE6dHNjYXJ0ZXI6cGFtIiwiYXV0aF90b2tlbiI6IlpCVE5JQURaRUdWWEZaUFQiLCJpc19hZG1pbiI6ImZhbHNlIiwiaXNfbWFjaGluZSI6ImZhbHNlIiwiYXV0aHpfY29udGV4dCI6eyJEZWZhdWx0VXNlckFjY2VzcyI6WyIqIl19fQ.QwmovEpUEOF4b2USX1P55hIpoZiBmsxTO0TqnYKn7Yo93VXqu73\_79rzFwNoU2ae4qGhT3pA07TSHXrSE7lqc9hDIviBDti\_nLcGmj7ulE9BLgduAQj-axz9Fiu46QD1fzgdxZp8zlbPuXbRCTgo410v7p4nuWC3mXkCyn0evZY”

jobs = api\_requests.get\_netbackup\_jobs(jwt, base\_url)

import requests

def get\_netbackup\_jobs(jwt, base\_url):

url = base\_url + "/admin/jobs"

# url = “https://adc094nbadmin01.us.oracle.com:1556/netbackup/admin/jobs”

headers = {'Content-Type': content\_type, 'Authorization': jwt}

query\_params = {

# "page[limit]": 100, #This changes the default page size to 100

# "filter": "jobType eq 'RESTORE'" #This adds a filter to only show RESTORE Jobs

}

print("performing GET on {}\n".format(url))

resp = requests.get(url, headers=headers, params=query\_params, verify=False)

if resp.status\_code != 200:

raise Exception('Jobs API failed with status code {} and {}'.format(resp.status\_code, resp.json()))

return resp.json()

NetBackup™ Web UI Security Administrator's Guide

<https://www.veritas.com/support/en_US/doc/130706365-133278116-0/v131900919-133278116>

Role Based Access Control

rbacSecurity

rbacCertSecurity

rbacUserSecurity

Privs for API calls

[https://www.veritas.com/support/en\_US/article.100042908](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.veritas.com_support_en-5FUS_article.100042908&d=DwMFAg&c=RoP1YumCXCgaWHvlZYR8PZh8Bv7qIrMUB65eapI_JnE&r=pZPTBTz2Si2ed3k5aMh1Cl5XWfCBCTny1pznYLuKRCI&m=Zlo4NCbX1d67ISpTBLsrtkhQhN0E0QY2KXORQzqWEjM&s=FUlnroEE0arxW9SQYzSHsBWyOdxoA3LKyZsCb0VAtEI&e=)

bpnbat -AddUser <user> <password> <domain>

/usr/openv/netbackup/bin/bpnbat -adduser bkuporap bk\_1234 adc094nbadm01

bpnbaz -SetupExAudit

/usr/openv/netbackup/bin/admincmd/bpnbaz -setupexaudit

bpnbaz -AddUser <domain type>:<domain name>:<user>

/usr/openv/netbackup/bin/admincmd/bpnbaz -adduser vx:adc094nbadmin01:bkuporap

/usr/openv/netbackup/bin/admincmd/bpnbaz -AddUser Unixpwd:adc094nbadmin01:tscarter

./bpnbaz –ListUsers

[root@adc094nbadmin01 admincmd]# ./bpnbaz -ListUsers

Number of users with NetBackup Administrator Privileges: 1

Domain Type : vx

Domain : adc094nbadmin01

Username : bkuporap

Operation completed successfully.

id token and access token

Token lengths are different

Example token length 1014 characters

eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiIsInppcCI6IkRFRiJ9.eNp0VF1v2jAU\_S9-nHiArXQrb15yaT2cOLIdEJ2mKGWZmnXARMKEVvW\_13EciO3weu65H-d-vaIyr9FsMp18Gt\_dTsefb6bjESqrCs3Q7umYbfOqLg5ohH7XpYIWqwVfzNM1k6tHvCKJMhSnv63\_5MvHO-V\_cztC1fFJkQ\_b3bGaHar6UGxeitm\_k2Lnx\_o5q\_cvxW44Wlll-c9t2Vjrw7FokW2-eS53hcJ-5X-qwoT5n232u7o4qfJfEQchMZfZN\_YVzb6jD-jHSGOMQ0YifA9ndElg5dJAZg9MyDMUcMASsmUkgC-B96jGYrFDoKCwgFEKgSQsPlsoETILgEsyJ4HyE2dLxEIyX9txDJYwSoK1Xa\_F01EFZcLnZJgS3MOBNxEhDhNGYi9Tr7KLdJZ4JXBYsgUM0nUtnFFfmirQ7ZBUUZzm6EwEHClDmbTBKczEtacZK55kkXJuwrjcflm6gq45Tgne7I1\_o9XF8CNPqdMTnIZEUnYvXLIjQZPnEIoQS2yjAwPVuJLrIFioFfYy4VQ-6JY70hLgERGiv6gad2SYVR9Ya822h6mOKI3sSXRnwSGEWBJMnTLsszTZhpbfarnh9cfI9\_saN08DbzZF87m6RcSxyqAKoK63o9RsrJWnPd2zdq-5A8MRqUjUNllN6I4BgpQTuU44S7zzHOqQyeJdboDjAKiVor2YK8\_nMutL7DQJux-m\_KIIYukvnrthumPCbaS9BCbwkB5j8vW0cYZGfPVrXZHqrHrvU7tfsWmY9wf0Onakt7d3AAAA\_\_8.VVE25rQqbrC-isGOqbRTqMPoK4ts5-9\_6zSgz0fUg11m9GCClq10PS9u1DlaXye-S2MYYyHVEHSVs6uKcPVvN2WGBHkv7t-c4Hixc9O8zrJYhJaP979wF\_gn08YnRlX7\_o4Qj6muc1IWHjK0hPMIgq0X-sBU2Git9uppVW1jbLA'

my token 577 characters

eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiJ9.eyJpc3MiOiJuYnVfbWFzdGVyIiwianRpIjoiZjMzMTVkYmUtZDJiYi00ZGY1LWIxZGEtMTRkOGQ2ZDc1ZjJiIiwiaWF0IjoxNTU1MDE5MTE3NjM3LCJleHAiOjE1NTUxMDU1MTc2MzUsInN1YiI6ImFkYzA5NG5iYWRtaW4wMS51cy5vcmFjbGUuY29tOnRzY2FydGVyOnVuaXhwd2QiLCJhdXRoX3Rva2VuIjoiZjMzMTVkYmUtZDJiYi00ZGY1LWIxZGEtMTRkOGQ2ZDc1ZjJiIiwiaXNfYWRtaW4iOiJmYWxzZSIsImlzX21hY2hpbmUiOiJmYWxzZSIsInRva2VuX3R5cGUiOiJTRVNTSU9OIn0.LaSouPQ07qp0pRCy9WKqYfOFY871s-iN2bmrClglSBelCh8\_QIuibl-6CxapWlbRjArU8eVAFlD1un1Rkj5REwERL9NFIJETb6kNznQFDM3NEh01SFnTUhr-qhw1qAt0MYnpTYrSoqwvoYf2Sfm\_Mg\_ZpSNwN14dwb3ARxtjwEE

Not to be worried about. They were different lengths in 8.1.1 but in 8.1.2 and later, they’re the short length.

Trying curl to get the jwt

curl -X POST https://masterservername:1556/netbackup/login \

-H 'content-type: application/vnd.netbackup+json;version=1.0' \

-d '{ \

"domainType":"vx", \

"domainName":"mydomain", \

"userName":"myusername", \

"password":"mypassword" \

}'

curl -X POST https://adc094nbadmin01.us.oracle.com:1556/netbackup/login \

-k -H 'content-type: application/vnd.netbackup+json;version=1.0' \

-d '{ \

"domainType":"unixpwd ", \

"domainName":"adc094nbadmin01", \

"userName":"tscarter", \

"password":"Redacted" \

}'

[tscarter@adc094nbadmin01 ~]$ curl -X POST https://adc094nbadmin01.us.oracle.com:1556/netbackup/login -k -H 'content-type: application/vnd.netbackup+json;version=1.0' -d '{ "domainType":"unixpwd", "domainName":"adc094nbadmin01", "userName":"tscarter", "password":"Redacted" }'

{"token":"eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiJ9.eyJpc3MiOiJuYnVfbWFzdGVyIiwianRpIjoiZjVmNzU3YzMtYWQ3NC00MzQzLWFhODgtYTFmNGJhZThkN2M1IiwiaWF0IjoxNTU1MDg5ODc3MzI3LCJleHAiOjE1NTUxNzYyNzczMjUsInN1YiI6ImFkYzA5NG5iYWRtaW4wMS51cy5vcmFjbGUuY29tOnRzY2FydGVyOnVuaXhwd2QiLCJhdXRoX3Rva2VuIjoiZjVmNzU3YzMtYWQ3NC00MzQzLWFhODgtYTFmNGJhZThkN2M1IiwiaXNfYWRtaW4iOiJmYWxzZSIsImlzX21hY2hpbmUiOiJmYWxzZSIsInRva2VuX3R5cGUiOiJTRVNTSU9OIn0.ZiTOsGHIB5u42\_Zgw3mri2bAQ0lZ9tjUHZ-RluYIrrxjv-OU4ooeBUwgvfzMs6YOUVlI91bJL\_-vfoCaT5HH\_GD1g3jgi8FNSGvBODcdh-VmUc-3teg6KhyOaFxqyyOTB7hy5\_VqFUciy8PPbo0hdgDXS9IFhG7ucx0Zs2DCJ84","tokenType":"BEARER","validity":86400}[tscarter@adc094nbadmin01 ~]$

[tscarter@adc094nbadmin01 ~]$

[tscarter@adc094nbadmin01 ~]$ curl -X POST https://adc094nbadmin01.us.oracle.com:1556/netbackup/login -k -H 'content-type: application/vnd.netbackup+json;version=1.0' -d '{ "domainType":"vx", "domainName":"adc094nbadmin01", "userName":"bkuporap", "password":"bk\_1234" }'

curl -X GET https://adc094nbadmin01.us.oracle.com:1556/netbackup/admin/jobs/5 -k -H 'Accept: application/vnd.netbackup+json;version=1.0' -H ‘Authorization: eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiJ9.eyJpc3MiOiJuYnVfbWFzdGVyIiwianRpIjoiZjVmNzU3YzMtYWQ3NC00MzQzLWFhODgtYTFmNGJhZThkN2M1IiwiaWF0IjoxNTU1MDg5ODc3MzI3LCJleHAiOjE1NTUxNzYyNzczMjUsInN1YiI6ImFkYzA5NG5iYWRtaW4wMS51cy5vcmFjbGUuY29tOnRzY2FydGVyOnVuaXhwd2QiLCJhdXRoX3Rva2VuIjoiZjVmNzU3YzMtYWQ3NC00MzQzLWFhODgtYTFmNGJhZThkN2M1IiwiaXNfYWRtaW4iOiJmYWxzZSIsImlzX21hY2hpbmUiOiJmYWxzZSIsInRva2VuX3R5cGUiOiJTRVNTSU9OIn0.ZiTOsGHIB5u42\_Zgw3mri2bAQ0lZ9tjUHZ-RluYIrrxjv-OU4ooeBUwgvfzMs6YOUVlI91bJL\_-vfoCaT5HH\_GD1g3jgi8FNSGvBODcdh-VmUc-3teg6KhyOaFxqyyOTB7hy5\_VqFUciy8PPbo0hdgDXS9IFhG7ucx0Zs2DCJ84’

curl -X POST https://adc094nbadmin01.us.oracle.com:1556/netbackup/login \

-k -H 'content-type: application/vnd.netbackup+json;version=1.0' \

-d '{ \

"domainType":"vx ", \

"domainName":"adc094nbadmin01", \

"userName":"bkuporap", \

"password":"bk\_1234" \

}'

I normally run this command to turn up the logs:

# /usr/openv/netbackup/bin/vxlogcfg -a -p NB -o Default -s "DebugLevel=6" -s "LogRecycle=true"

You can turn the log level back down with this:

# /usr/openv/netbackup/bin/vxlogcfg -r -p NB -o Default -s "DebugLevel=6" -s "LogRecycle=true"

[root@adc094nbadmin01 ~]# curl -X GET https://adc094nbadmin01.us.oracle.com:1556/netbackup/admin/jobs -H "accept: application/vnd.netbackup+json;version=2.0" -H "Authorization: eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiJ9.eyJpc3MiOiJuYnVfbWFzdGVyIiwianRpIjoiNDE1MzIwOGUtMTRkYS00NzBkLTk1YWMtNzYxYzMxNWExNzRmIiwiaWF0IjoxNTU1NTk5OTg2ODczLCJleHAiOjE1NTU2ODYzODY4NzEsInN1YiI6ImFkYzA5NG5iYWRtaW4wMS51cy5vcmFjbGUuY29tOnRzY2FydGVyOnVuaXhwd2QiLCJhdXRoX3Rva2VuIjoiNDE1MzIwOGUtMTRkYS00NzBkLTk1YWMtNzYxYzMxNWExNzRmIiwiaXNfYWRtaW4iOiJmYWxzZSIsImlzX21hY2hpbmUiOiJmYWxzZSIsInRva2VuX3R5cGUiOiJTRVNTSU9OIn0.en76FakbTx0VaMJMNQCrbOz16\_ahc50vQDr-AJk9OnMrtYpk3E9LWdYJS5DTuTPVHGf9BpWBM5V2GRbZrnSx8cxPuMCLjGTCqeYGA0\_vPjPVxBaWqirfGyY7V6UHwZHwhzwR3BtbpAlraJ950yPnmHahytl7fB5HNYQ0stGMw3Y" –k

{"data":[],"meta":{"pagination":{"pages":0,"last":0,"offset":0,"limit":10,"count":0,"page":0,"first":0}},"links":{"self":{"href":"https://adc094nbadmin01.us.oracle.com:1556/netbackup/admin/jobs?page[offset]=0&page[limit]=10&sort=-startTime"},"last":{"href":"https://adc094nbadmin01.us.oracle.com:1556/netbackup/admin/jobs?page[offset]=-10&page[limit]=10&sort=-startTime"},"first":{"href":"https://adc094nbadmin01.us.oracle.com:1556/netbackup/admin/jobs?page[offset]=0&page[limit]=10&sort=-startTime"}}}

[root@adc094nbadmin01 ~]# /usr/openv/netbackup/sec/at/bin/vssat validateprpl -p tscarter -d unixpwd:adc094nbadmin01 -b adc094nbadmin01.us.oracle.com:1556:nbatd

Using data dir: /usr/openv/var/vxss/at

ValidatePrincipal :

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ID : 519558

Name : tscarter

Display Name : tscarter

Domain :

Description : TERRY.CARTER@ORACLE.COM

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Group(s) Details :

Count : 1

Name(s) and ID(s) : g999

999

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[root@adc094nbadmin01 ~]#

Logging in directly

[root@adc094nbadmin01 ~]# /usr/openv/netbackup/bin/bpnbat -login

Authentication Broker: adc094nbadmin01

Authentication port [0 is default]: 0

Authentication type (NIS, NISPLUS, WINDOWS, vx, unixpwd, ldap): unixpwd

Domain: adc094nbadmin01

Login Name: tscarter

Password:

Operation completed successfully.

Breakthrough

Set the password for bkuporap

[root@adc094nbadmin01 ~]# /usr/openv/netbackup/sec/at/bin/vssat createpd -t ab -d adc094nbadmin01 && /usr/openv/netbackup/sec/at/bin/vssat addprpl -t ab -d adc094nbadmin01 -p bkuporap -s bk\_1234 -q user

Using data dir: /usr/openv/var/global/vxss/eab/data

createpd

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Created Domain: adc094nbadmin01

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Using data dir: /usr/openv/var/global/vxss/eab/data

createprpl

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Created Principal: bkuporap

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Attempted to get a token

[root@adc094nbadmin01 ~]# date ; curl -X POST https://adc094nbadmin01.us.oracle.com:1556/netbackup/login -k -H 'content-type: application/vnd.netbackup+json;version=1.0' -d '{ "domainType":"vx", "domainName":"adc094nbadmin01", "userName":"bkuporap", "password":"bk\_1234" }'

Thu Apr 18 13:15:11 CDT 2019

{"token":"eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiJ9.eyJpc3MiOiJuYnVfbWFzdGVyIiwianRpIjoiYmZlZjE5NGYtNTRmZi00YTM2LWI3ODMtYzBkYjUxYzU3NThkIiwiaWF0IjoxNTU1NjExMzExODEyLCJleHAiOjE1NTU2OTc3MTE4MDksInN1YiI6ImFkYzA5NG5iYWRtaW4wMTpia3Vwb3JhcDp2eCIsImF1dGhfdG9rZW4iOiJiZmVmMTk0Zi01NGZmLTRhMzYtYjc4My1jMGRiNTFjNTc1OGQiLCJpc19hZG1pbiI6InRydWUiLCJpc19tYWNoaW5lIjoiZmFsc2UiLCJ0b2tlbl90eXBlIjoiU0VTU0lPTiJ9.ASDkYR\_QBSW70tUEV7Mvl-ymCinwBx5ofboBsgkfmAGQwNMOK0ImFJFdi21FEtDYc0ZW\_j7q2muZRUvrpN09trA-R8Zo2UvDKx0U26lq3O\_lZ2aZM9PSbAXjnyHHdUIeY\_TOQSXUgbODKaStObZKnsKYhTmZeh\_R7dW79odbYC8","tokenType":"BEARER","validity":86400}[root@adc094nbadmin01 ~]#

Attempted to get job information

[root@adc094nbadmin01 ~]# date; curl -X GET https://adc094nbadmin01.us.oracle.com:1556/netbackup/admin/jobs/81431 -H "accept: application/vnd.netbackup+json;version=2.0" -H "Authorization: eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiJ9.eyJpc3MiOiJuYnVfbWFzdGVyIiwianRpIjoiYmZlZjE5NGYtNTRmZi00YTM2LWI3ODMtYzBkYjUxYzU3NThkIiwiaWF0IjoxNTU1NjExMzExODEyLCJleHAiOjE1NTU2OTc3MTE4MDksInN1YiI6ImFkYzA5NG5iYWRtaW4wMTpia3Vwb3JhcDp2eCIsImF1dGhfdG9rZW4iOiJiZmVmMTk0Zi01NGZmLTRhMzYtYjc4My1jMGRiNTFjNTc1OGQiLCJpc19hZG1pbiI6InRydWUiLCJpc19tYWNoaW5lIjoiZmFsc2UiLCJ0b2tlbl90eXBlIjoiU0VTU0lPTiJ9.ASDkYR\_QBSW70tUEV7Mvl-ymCinwBx5ofboBsgkfmAGQwNMOK0ImFJFdi21FEtDYc0ZW\_j7q2muZRUvrpN09trA-R8Zo2UvDKx0U26lq3O\_lZ2aZM9PSbAXjnyHHdUIeY\_TOQSXUgbODKaStObZKnsKYhTmZeh\_R7dW79odbYC8" -k

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{"data":{"links":{"self":{"href":"/admin/jobs/81431"},"file-lists":{"href":"https://adc094nbadmin01.us.oracle.com:1556/netbackup/admin/jobs/81431/file-lists"},"try-logs":{"href":"https://adc094nbadmin01.us.oracle.com:1556/netbackup/admin/jobs/81431/try-logs"}},"type":"job","id":"81431","attributes":{"jobId":81431,"parentJobId":81430,"activeProcessId":25771,"mainProcessId":0,"jobType":"BACKUP","jobSubType":"SCHEDULED","policyType":"MS-WINDOWS","policyName":"test1","scheduleType":"DIFFERENTIAL\_INCREMENTAL","scheduleName":"Differential-Inc","clientName":"adc094nbadmin01","controlHost":"","jobOwner":"root","jobGroup":"root","backupId":"adc094nbadmin01\_1555563617","sourceMediaId":"","sourceStorageUnitName":"","sourceMediaServerName":"","destinationMediaId":"","destinationStorageUnitName":"Special","destinationMediaServerName":"adc094nbadmin01.us.oracle.com","dataMovement":"STANDARD","streamNumber":1,"copyNumber":0,"priority":0,"compression":0,"status":0,"state":"DONE","done":1,"numberOfFiles":369,"estimatedFiles":496,"kilobytesTransferred":576,"kilobytesToTransfer":4418,"transferRate":45,"percentComplete":100,"restartable":1,"suspendable":0,"resumable":0,"killable":0,"frozenImage":0,"transportType":"LAN","currentOperation":-2,"robotName":"","vaultName":"","profileName":"","sessionId":0,"numberOfTapeToEject":0,"submissionType":0,"dumpHost":"","instanceDatabaseName":"","auditUserName":"","auditDomainName":"","auditDomainType":0,"restoreBackupIDs":"","startTime":"2019-04-18T05:00:17.000Z","endTime":"2019-04-18T05:00:43.000Z","activeTryStartTime":"2019-04-18T05:00:17.000Z","lastUpdateTime":"2019-04-18T05:00:47.227Z","initiatorId":"","retentionLevel":1,"try":1,"jobQueueReason":-1,"jobQueueResource":"","kilobytesDataTransferred":0}}}[root@adc094nbadmin01 ~]#

[root@adc094nbadmin01 ~]# /usr/openv/netbackup/bin/admincmd/bpnbaz -ListUsers

Number of users with NetBackup Administrator Privileges: 3

Domain Type : vx

Domain : adc094nbadmin01

Username : bkuporap

Domain Type : unixpwd

Domain : adc094nbadmin01

Username : tscarter

Domain Type : vx

Domain : nsstest

Username : nbuselfservice (welcome1)

Operation completed successfully.

[root@adc094nbadmin01 ~]# date ; curl -X POST https://adc094nbadmin01.us.oracle.com:1556/netbackup/login -k -H 'content-type: application/vnd.netbackup+json;version=1.0' -d '{ "domainType":"vx", "domainName":"nsstest", "userName":"nbuselfservice", "password":"welcome1" }'

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{"token":"eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiJ9.eyJpc3MiOiJuYnVfbWFzdGVyIiwianRpIjoiODViOTlhMmUtNjk1NC00N2RhLTk5MzUtNjYyMWFlNTU2YWRiIiwiaWF0IjoxNTU1NjEyNzkzNTE2LCJleHAiOjE1NTU2OTkxOTM1MTQsInN1YiI6Im5zc3Rlc3Q6bmJ1c2VsZnNlcnZpY2U6dngiLCJhdXRoX3Rva2VuIjoiODViOTlhMmUtNjk1NC00N2RhLTk5MzUtNjYyMWFlNTU2YWRiIiwiaXNfYWRtaW4iOiJ0cnVlIiwiaXNfbWFjaGluZSI6ImZhbHNlIiwidG9rZW5fdHlwZSI6IlNFU1NJT04ifQ.G5RigqYweXw3uso8F69Lbe0mkI5zkwMhQCd035RFrgFVBWQd5OfnmnvdC70-b\_dRc9\_V2ZupwJeARMG8\_c5WGs5Qzhup2bTMKpYsVUC4TpXaQZVmgZ4wykVe5hSc1rZi\_PRH2tee8MFdQ-aqX6meIUzaXKKhhWFk8JT1pH4nGyk","tokenType":"BEARER","validity":86400}[root@adc094nbadmin01 ~]#

When we got permissions in API, it caused CLI to be disabled

[root@adc094nbadmin01 ~]# /usr/openv/netbackup/bin/admincmd/bppllist '-l' '-allpolicies'

Access to perform the operation was denied (117)

[root@adc094nbadmin01 ~]# su - bkuporap

$ /usr/openv/netbackup/bin/admincmd/bppllist '-l' '-allpolicies'

bppllist: user must have valid certificate or must be superuser to execute

$

[root@adc094nbadmin01 ~]# /usr/openv/netbackup/bin/bpnbat -whoami

-----------------

AT login details:

-----------------

Name: bkuporap

Domain: adc094nbadmin01@adc094nbadmin01.us.oracle.com

Issued by: /CN=broker/OU=root@adc094nbadmin01.us.oracle.com/O=vx

Expiry Date: Apr 17 18:14:08 2020 GMT

Authentication method: Veritas Private Domain

Operation completed successfully.

[root@adc094nbadmin01 ~]#

[root@adc094nbadmin01 ~]# /usr/openv/netbackup/bin/bpnbat -whoami

-----------------

AT login details:

-----------------

Name: bkuporap

Domain: adc094nbadmin01@adc094nbadmin01.us.oracle.com

Issued by: /CN=broker/OU=root@adc094nbadmin01.us.oracle.com/O=vx

Expiry Date: Apr 22 16:17:08 2020 GMT

Authentication method: Veritas Private Domain

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Web login details:

------------------

Name: bkuporap

Domain: adc094nbadmin01

Issued by: adc094nbadmin01

Expiry Date: Apr 24 16:17:09 2019 GMT

Authentication method: Veritas Private Domain

Operation completed successfully.

Brian tells me to open a case for the security issues.

Issue maybe with RBAC/NBAC

case 190423-001365

Background

NBU 8.1.2 on Oracle Enterprise Linux (Red Hat)

Users

Local (vx) “bkuporap” and “nbuslefservice”

LDAP “tscarter” and “root”

Background to problem:

I could not get any of these users to get a proper response to API calls.

I created the bkuporap user through the following lines:

/usr/openv/netbackup/bin/bpnbat -adduser bkuporap bk\_1234 adc094nbadm01

/usr/openv/netbackup/bin/admincmd/bpnbaz –setupexaudit

/usr/oenv/netbackup/bin/admincmd/bpnbaz -adduser vx:adc094nbadmin01:bkuporap

I had been working with Brian Johnson (Veritas) in correcting this problem. He had checked with his “Authentication Expert” and they told him to have me run the following line:

/usr/openv/netbackup/sec/at/bin/vssat createpd -t ab -d adc094nbadmin01 && /usr/openv/netbackup/sec/at/bin/vssat addprpl -t ab -d adc094nbadmin01 -p bkuporap -s bk\_1234 -q user

After that, bkuporap was able to connect through API and is authorized to get any information I want through the API.

Side notes

nbuselfservice works the same way too.

verbose logging is turned on in the authorization logs

/usr/openv/netbackup/bin/vxlogcfg -a -p NB -o Default -s "DebugLevel=6" -s "LogRecycle=true"

Problem statement #1

Root, bkuporap and nbuselfservice can no longer issue CLI commands.

[root@adc094nbadmin01 ~]# /usr/openv/netbackup/bin/admincmd/bpplclients

Access to perform the operation was denied

[root@adc094nbadmin01 ~]# su - bkuporap

$ /usr/openv/netbackup/bin/admincmd/bpplclients

bpplclients: user must have valid certificate or must be superuser to execute

Problem statement #2

I would really like to get ldap users set up to allow API access as well.

Problem statement #3

We are attempting to set up NSS. We had the CLI part working. With this change, we have the API working but the CLI failed. End goal is to get both working.

<https://www.veritas.com/content/support/en_US/doc/21733320-132525226-0/v109046581-132525226>

 Role Based Access Control (RBAC)

Beginning with the NetBackup 8.1.2 release, the NetBackup web user interface provides role-based access control for a limited number of security settings and workloads. Refer to the guides for the [NetBackup Web UI Security Administrator's Guide](http://www.veritas.com/docs/DOC5332) for more information.

8.1.2 docs <https://www.veritas.com/support/en_US/article.100044086>

Security and encryption guide <https://www.veritas.com/content/support/en_US/doc/21733320-132525226-0/index>