Step-01 Install Required Software:

```
yum install -y https://dl.fedoraproject.org/pub/epel/epel-release-latest-8.noarch
.rpm
```

```
yum install -y net-snmp net-snmp-utils net-snmp-libs rrdtool
```

```
yum install -y mariadb-server mariadb
```

```
yum install -y php php-xml php-session php-sockets php-ldap php-gd php-json php-m
ysqlnd php-gmp php-mbstring php-posix php-snmp php-intl
```

Step-02 Start Required Services

```
systemctl start httpd

systemctl start snmpd

systemctl start mariadb
```

Step-03 Enable Required Services:

```
systemctl enable httpd

systemctl enable snmpd

systemctl enable mariadb
```

Step-04 Database Tuning:

Cacti recommend changing MySQL variables settings for better performances.

Edit configuration file depends on the operating system.

```
vi /etc/my.cnf.d/mariadb-server.cnf
```

Add variables in the [mysqld] section.

```
collation-server=utf8mb4_unicode_ci
character-set-server=utf8mb4
max_heap_table_size=32M
tmp_table_size=32M
join_buffer_size=64M
# 25% Of Total System Memory
innodb_buffer_pool_size=1GB
# pool_size/128 for less than 1GB of memory
innodb_buffer_pool_instances=10
innodb_flush_log_at_timeout=3
innodb_read_io_threads=32
innodb_write_io_threads=16
innodb_io_capacity=5000
innodb_io_capacity_max=10000
```

Restart the service.

```
systemctl restart mariadb
```

Step-05 Create CACTI Database:

```
# mysql -u root -p

Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 8
Server version: 10.3.11-MariaDB MariaDB Server

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]>
```

Create a database for Cacti installation.

```
create database cacti;
```

Grant permission to the newly created database.

```
GRANT ALL ON cacti.* TO cactiuser@localhost IDENTIFIED BY 'cactipassword';

flush privileges;

exit
```

The newly created database user (*cactiuser*) should have access to the mysql.time_zone_name table. To do that, import the mysql_test_data_timezone.sql to mysql database.

```
mysql -u root -p mysql < /usr/share/mariadb/mysql_test_data_timezone.sql
```

Then, log in to MySQL.

```
mysql -u root -p
```

Grant the permission to cactiuser.

```
GRANT SELECT ON mysql.time_zone_name TO cactiuser@localhost;

flush privileges;

exit
```

Step-06 Install and Configure CACTI:

```
yum install -y cacti
```

Import the default database to the cacti database.

```
mysql cacti < /usr/share/doc/cacti/cacti.sql -u cactiuser -p
```

Edit the config file to specify the database type, name, hostname, user, and password information.

```
vi /usr/share/cacti/include/config.php
```

Make the changes accordingly.

```
/*
* Make sure these values reflect your actual database/host/user/password
*/

$database_type = 'mysql';
$database_default = 'cacti';
$database_hostname = 'localhost';
$database_username = 'cactiuser';
$database_password = 'cactipassword';
$database_port = '3306';
```

Edit the Cacti's cron entry in the crontab file to poll every five minutes.

```
vi /etc/cron.d/cacti
```

Uncomment the below line.

```
*/5 * * * *      apache  /usr/bin/php /usr/share/cacti/poller.php > /dev/null 2>&1
```

Edit the Apache configuration file to perform the remote installation.

```
vi /etc/httpd/conf.d/cacti.conf
```

```
Alias /cacti     /usr/share/cacti


<Directory /usr/share/cacti/>
        <IfModule mod_authz_core.c>
                # httpd 2.4
                Require all granted
        </IfModule>
        <IfModule !mod_authz_core.c>
                # httpd 2.2
                Order deny,allow
                Deny from all
                Allow from localhost
        </IfModule>
</Directory>
```

Set the timezone by editing /etc/php.ini file.

```
vi /etc/php.ini
```

Update the PHP parameters.

```
date.timezone = Asia/Dhaka

memory_limit = 512M

max_execution_time = 300
```
Restart the services.

```
systemctl restart httpd

systemctl restart php-fpm
```

Step-07 Firewall Configuration:

Configure the firewall to allow HTTP service.

```
firewall-cmd --permanent --add-service=http

firewall-cmd --reload
```

Step-08 Setup CACTI Web Interface:

Visit the following URL to start the installation of cacti.

http://your-ip-address/cacti

The initial login details:

Username: *admin*

Password: *admin [new password will be Security@321]*
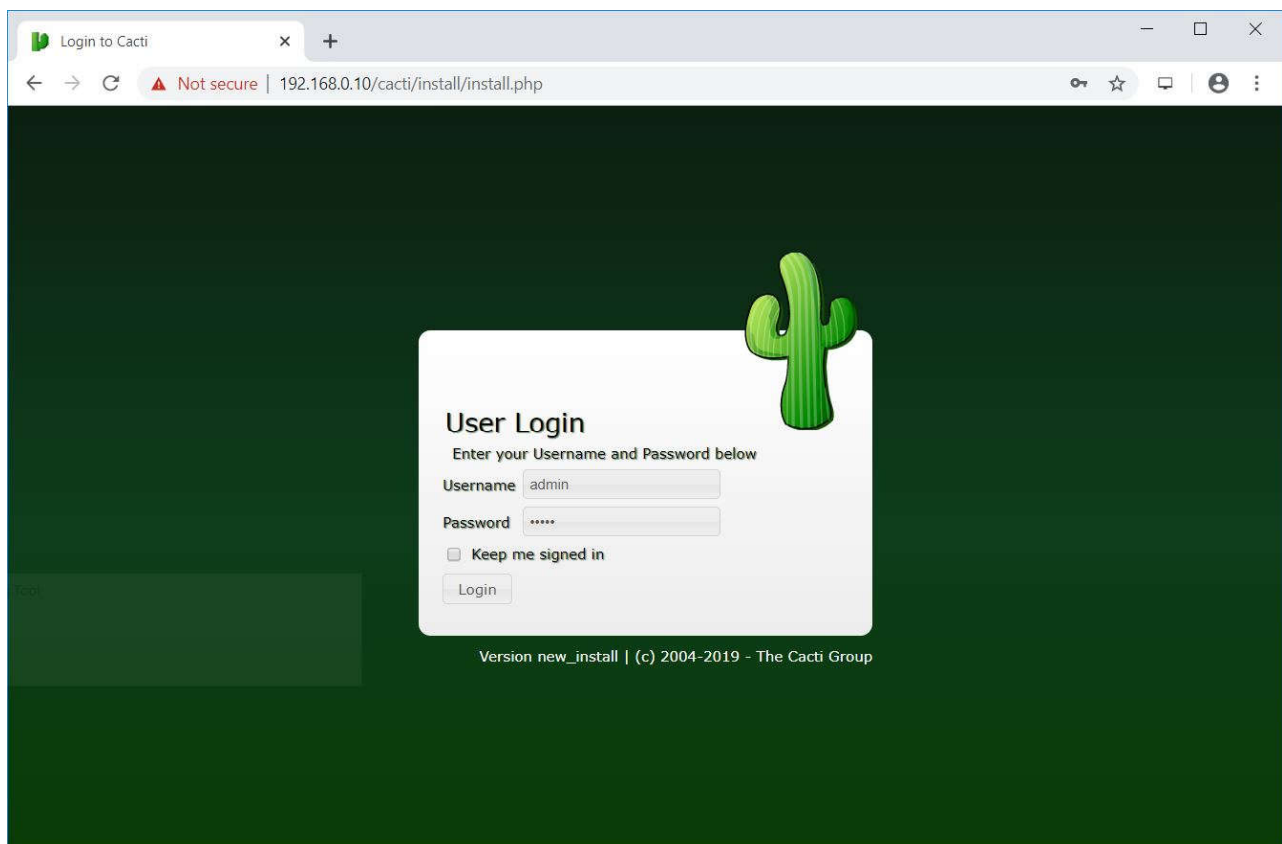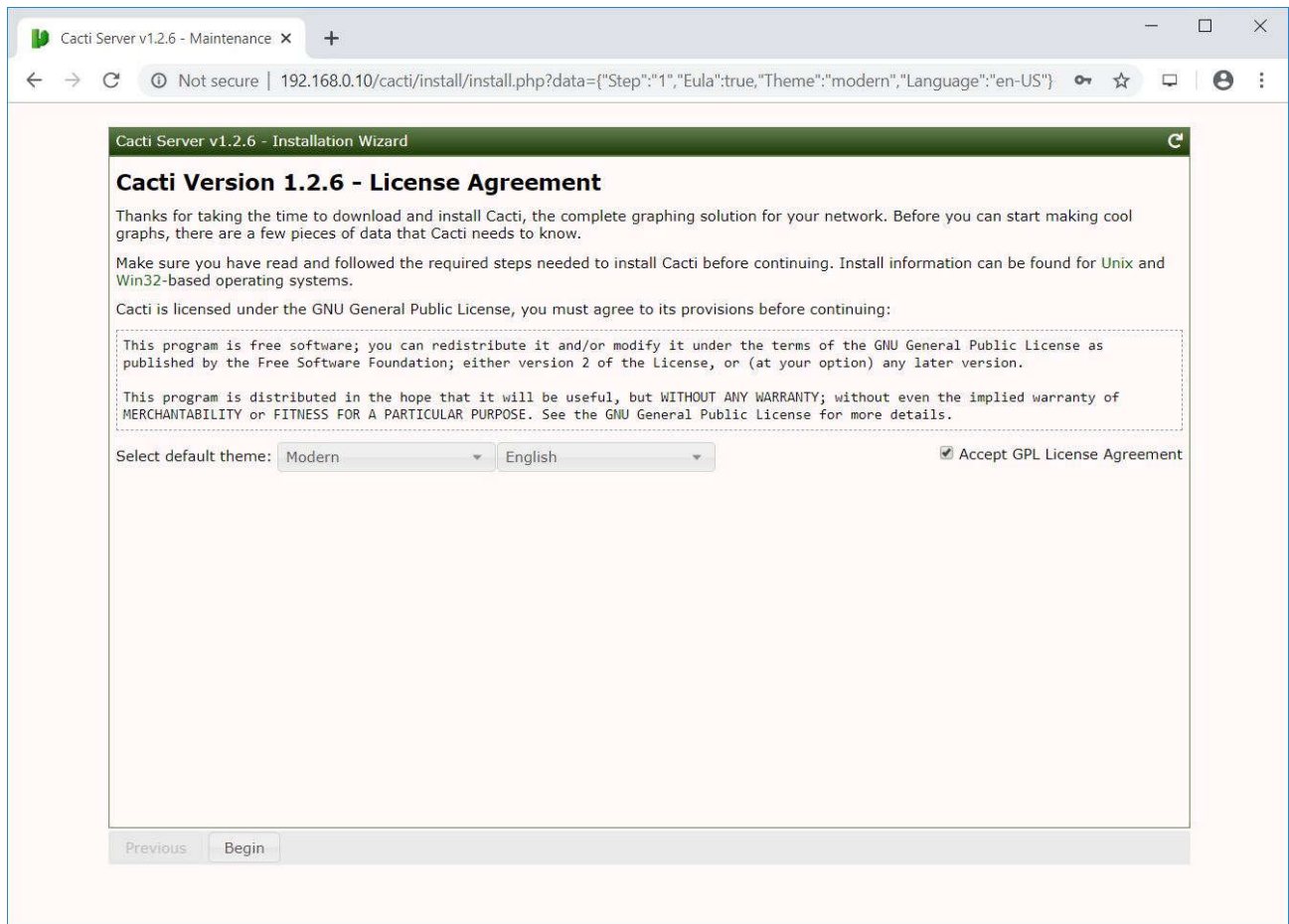
Login To Cacti Monitoring Tool
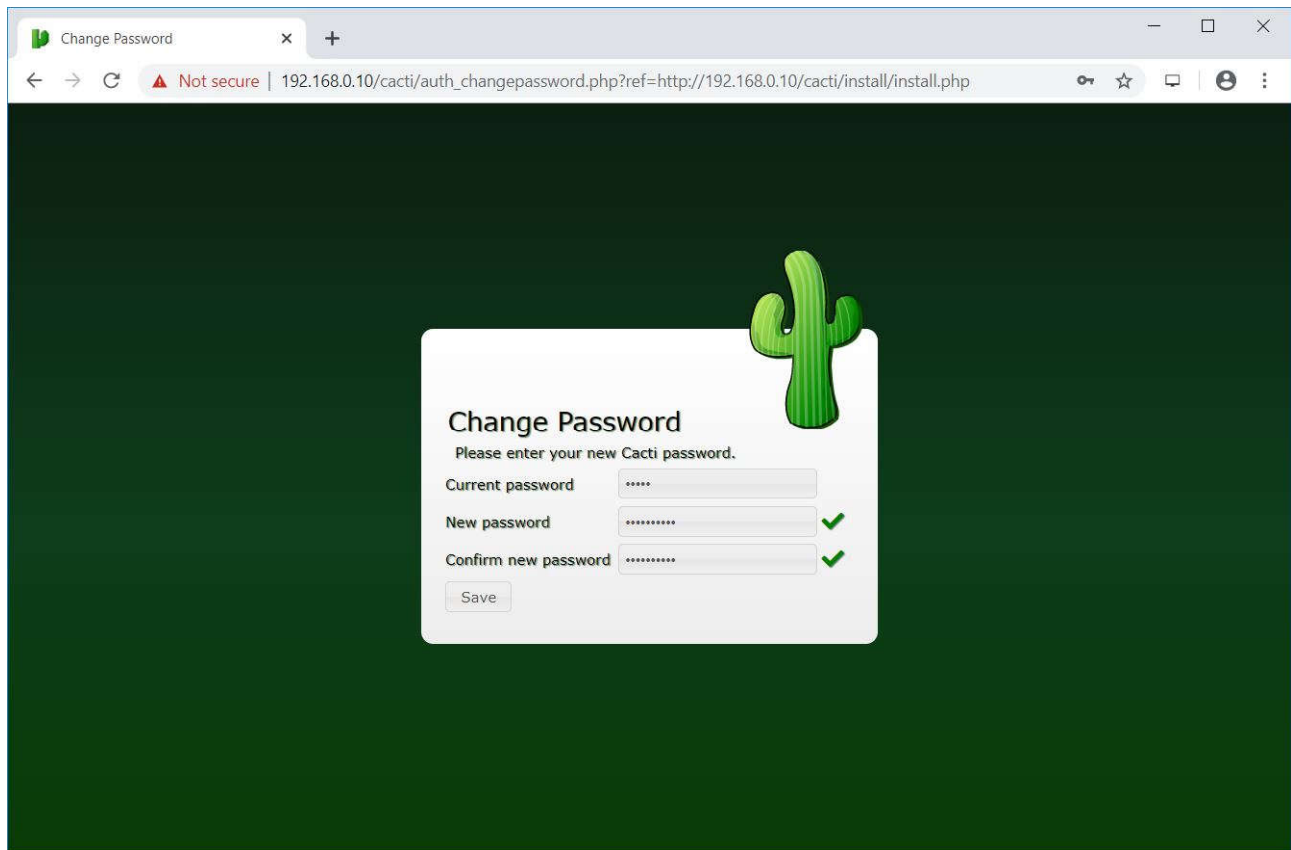
Change Admin Password

Accept the License Agreement on this page and then click on Next to continue.

Accept Cacti License Agreement

The Cacti installer now performs pre-installation checks to determine whether the system meets the requirements for the Cacti installation.

Ensure all checks are green. Consider fixing any warnings the installer reports on this page.

Move to the next step by clicking the Next button located at the left bottom of the page.
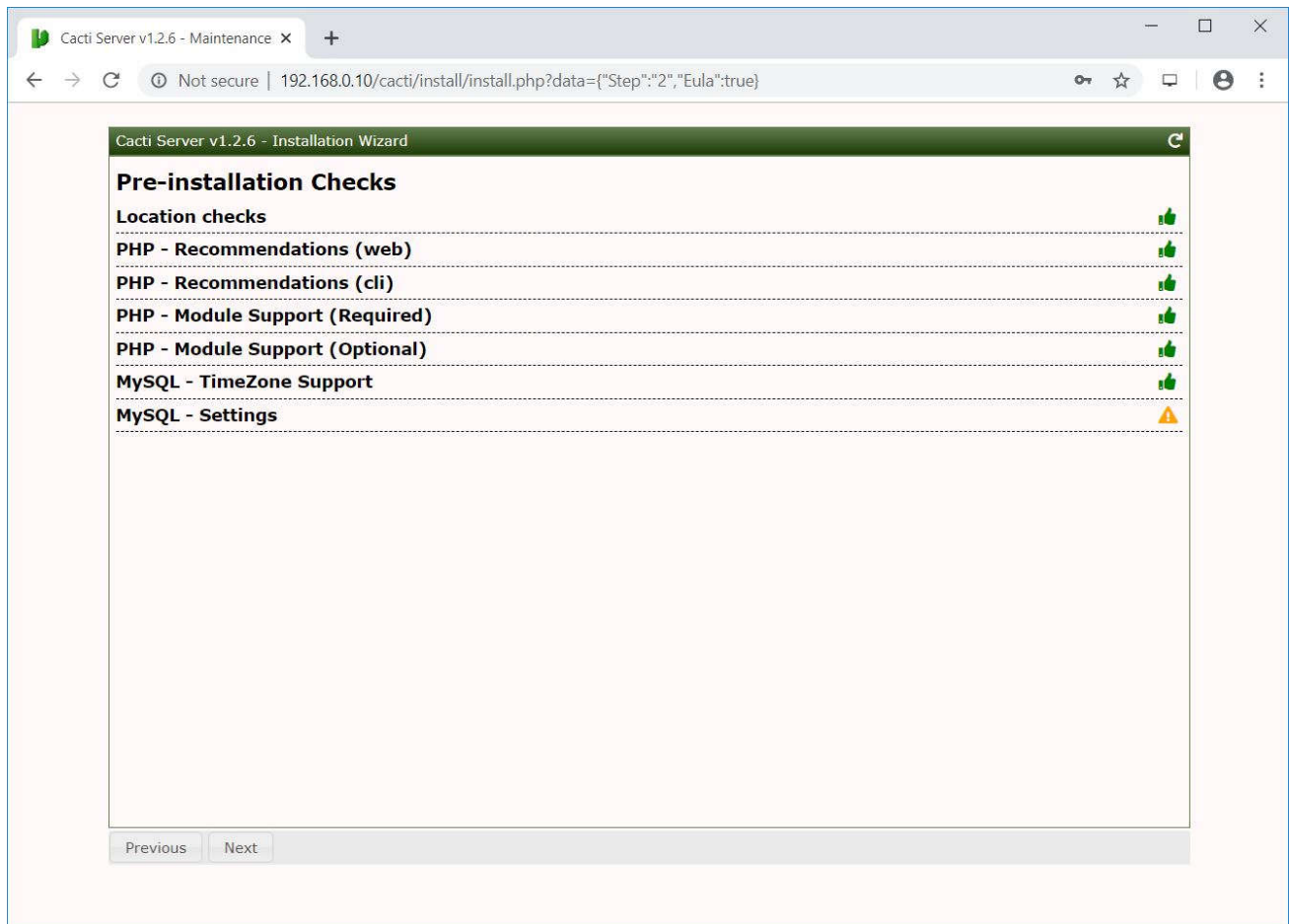
Cacti Pre-Installation Checks

Select New Primary Server or the new installation and then click Next.

Cacti Installation Type

This step checks and reports for permission problems you may have in the Cacti installation directory.
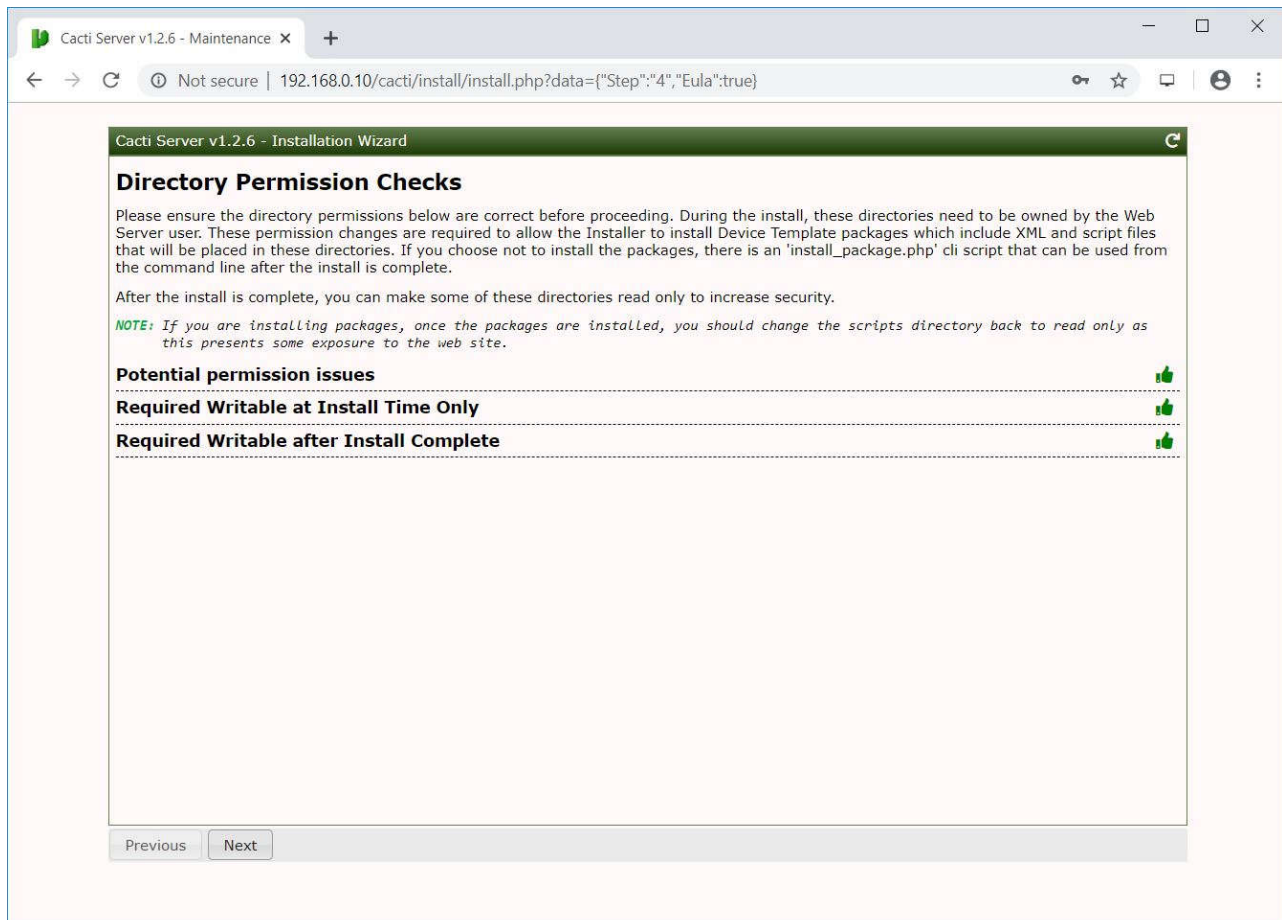
Cacti Directory Permission Checks

It will show you if there is any package is missing that is mandatory for the Cacti.

Cacti Critical Binary Locations and Versions

Click **Next.**

Default Profile

Select all templates and click Next.

Cacti Templates

This step reports if the database is not UTF8 compliant.
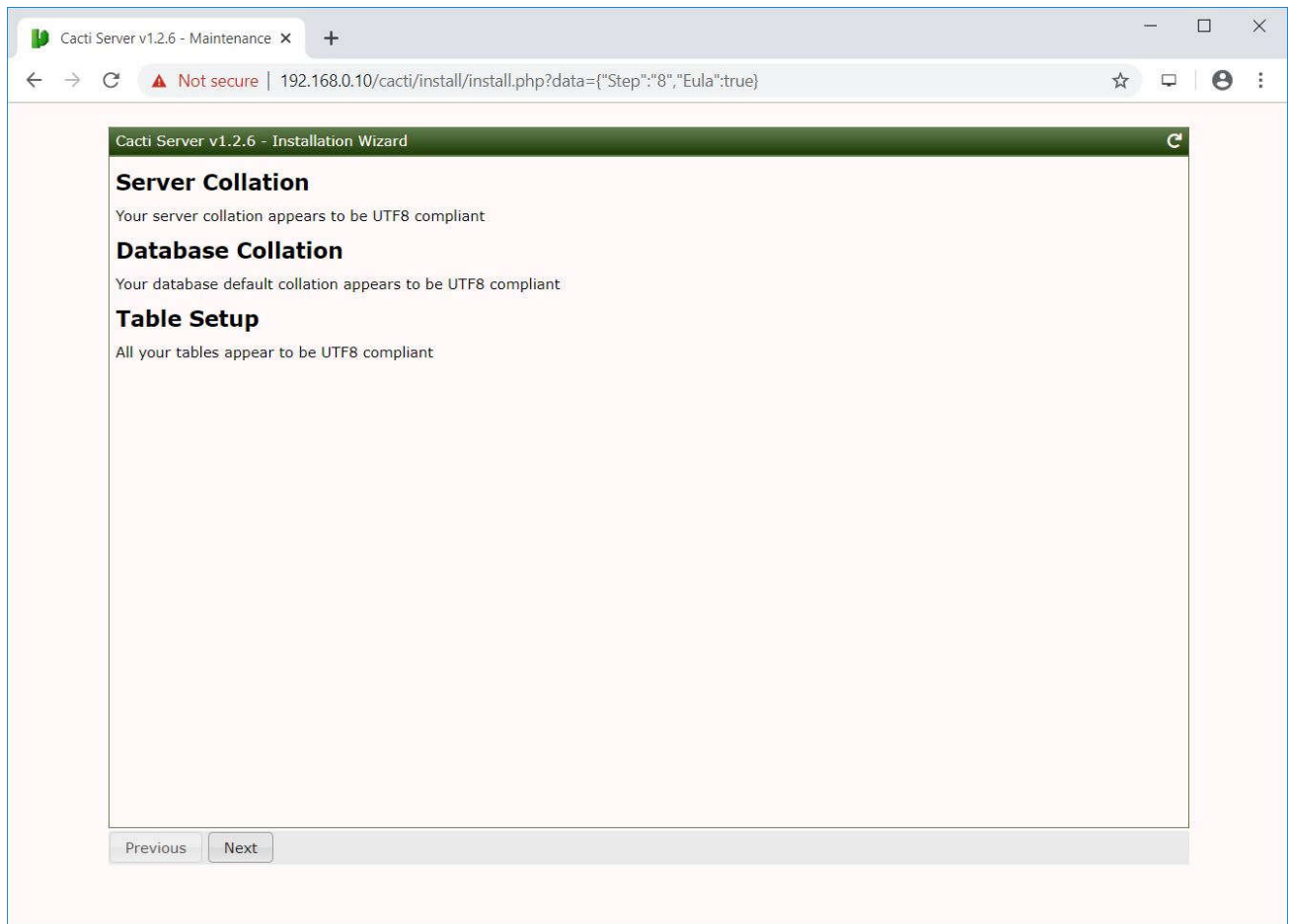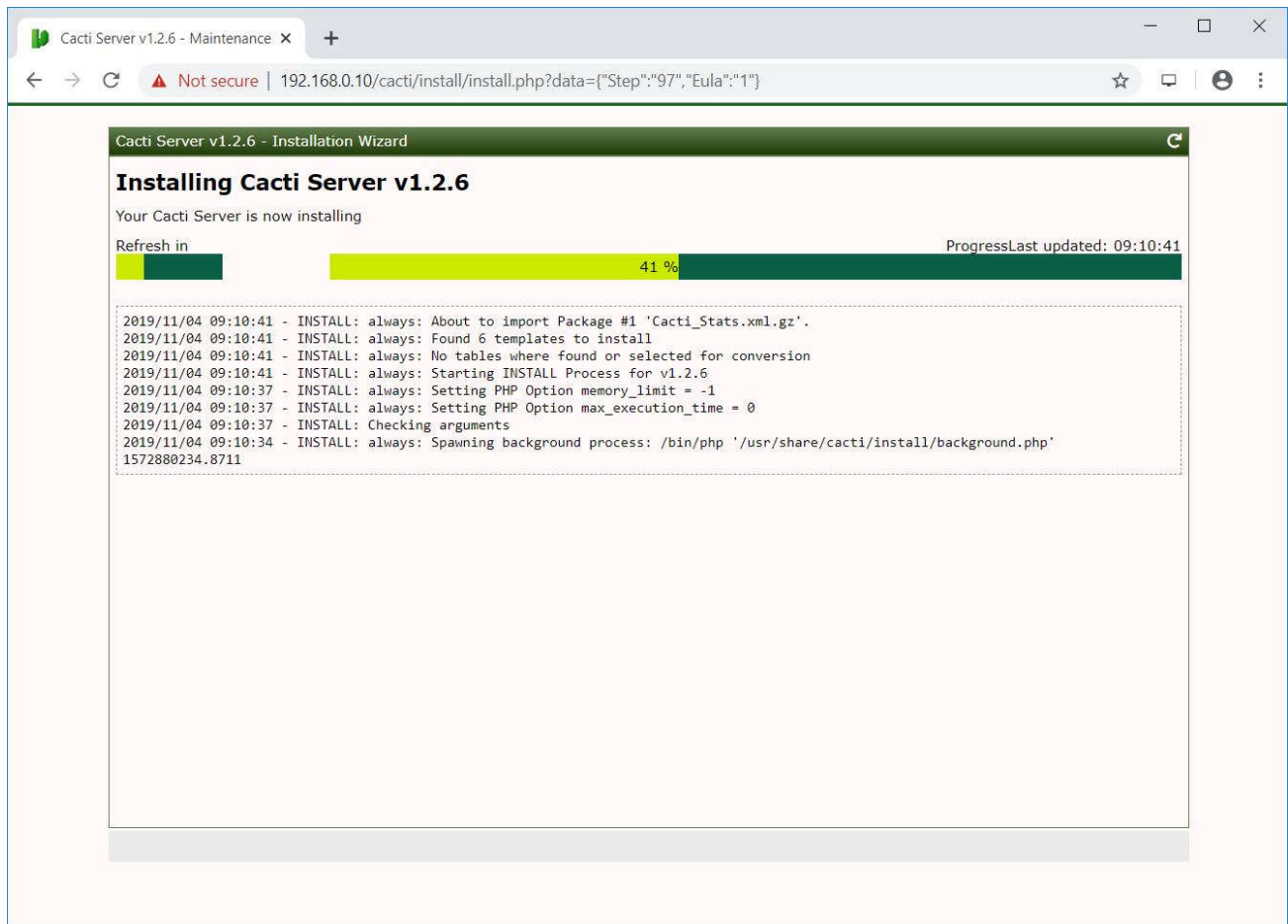
Database Check

Press **Confirm Installation** and then click **Install** begin the Cacti installation.
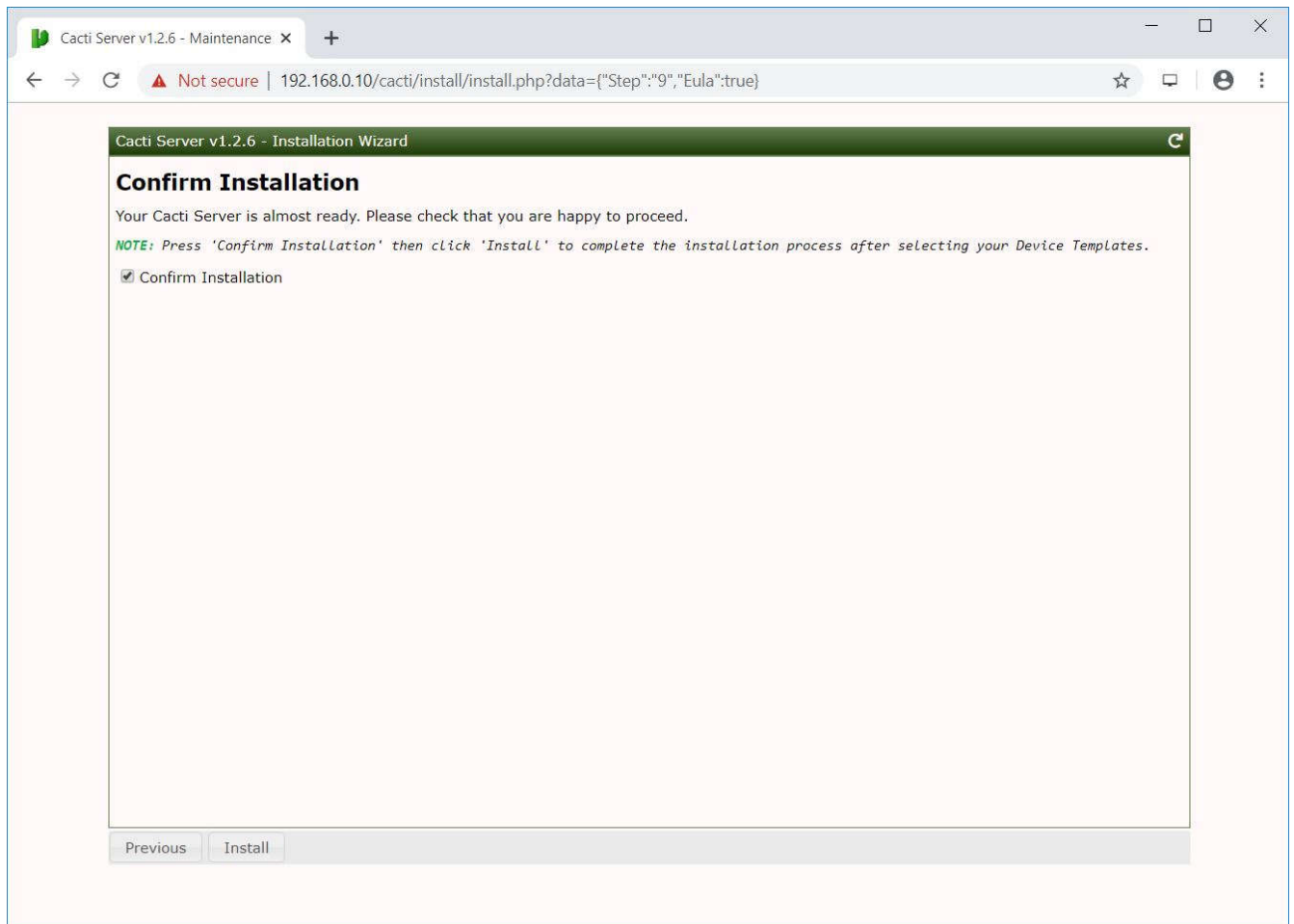
Confirm Cacti Installation

The installation is in progress.
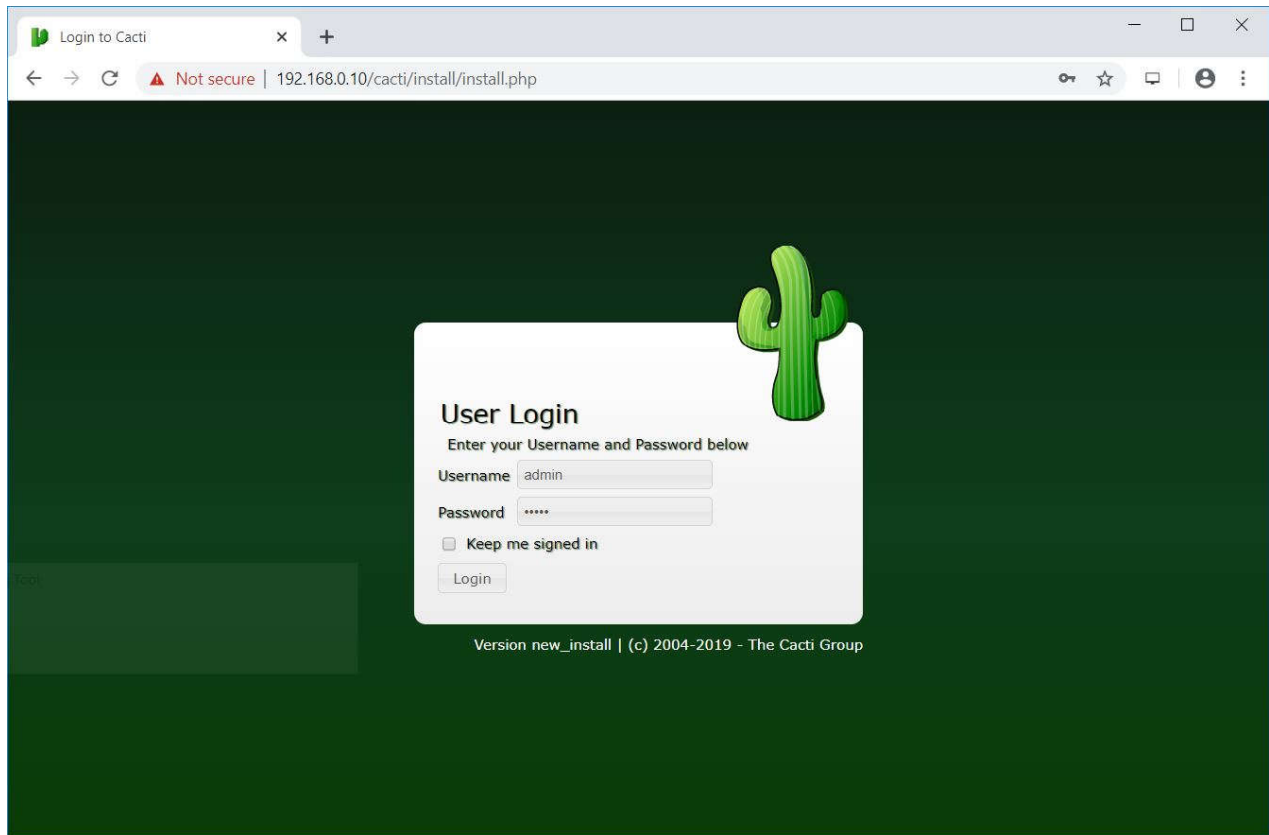

Installation In Progress

The Cacti installation is now complete. Click **Get Started** to access the Cacti dashboard.
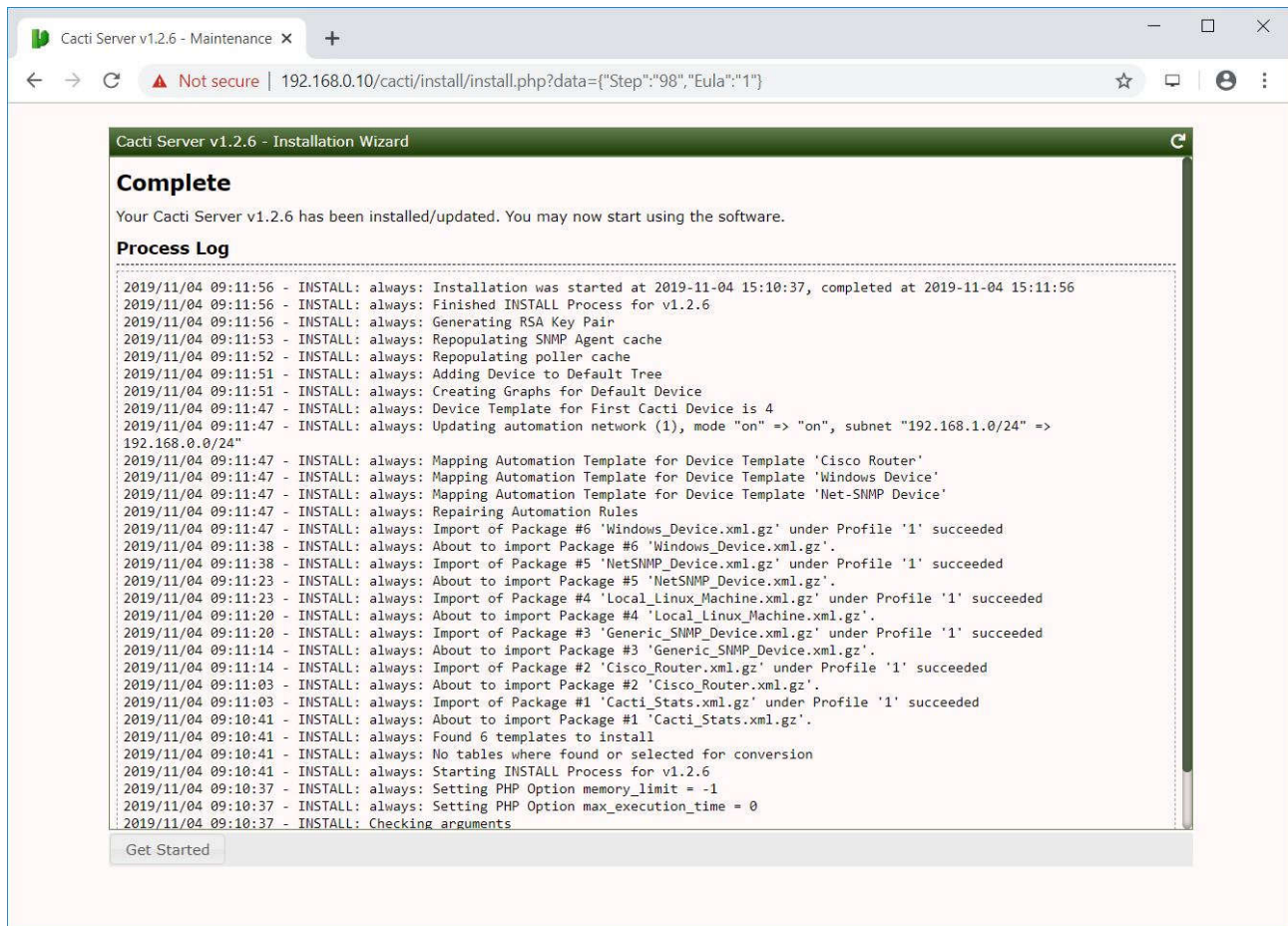
Installation Complete

Access Cacti Dashboard
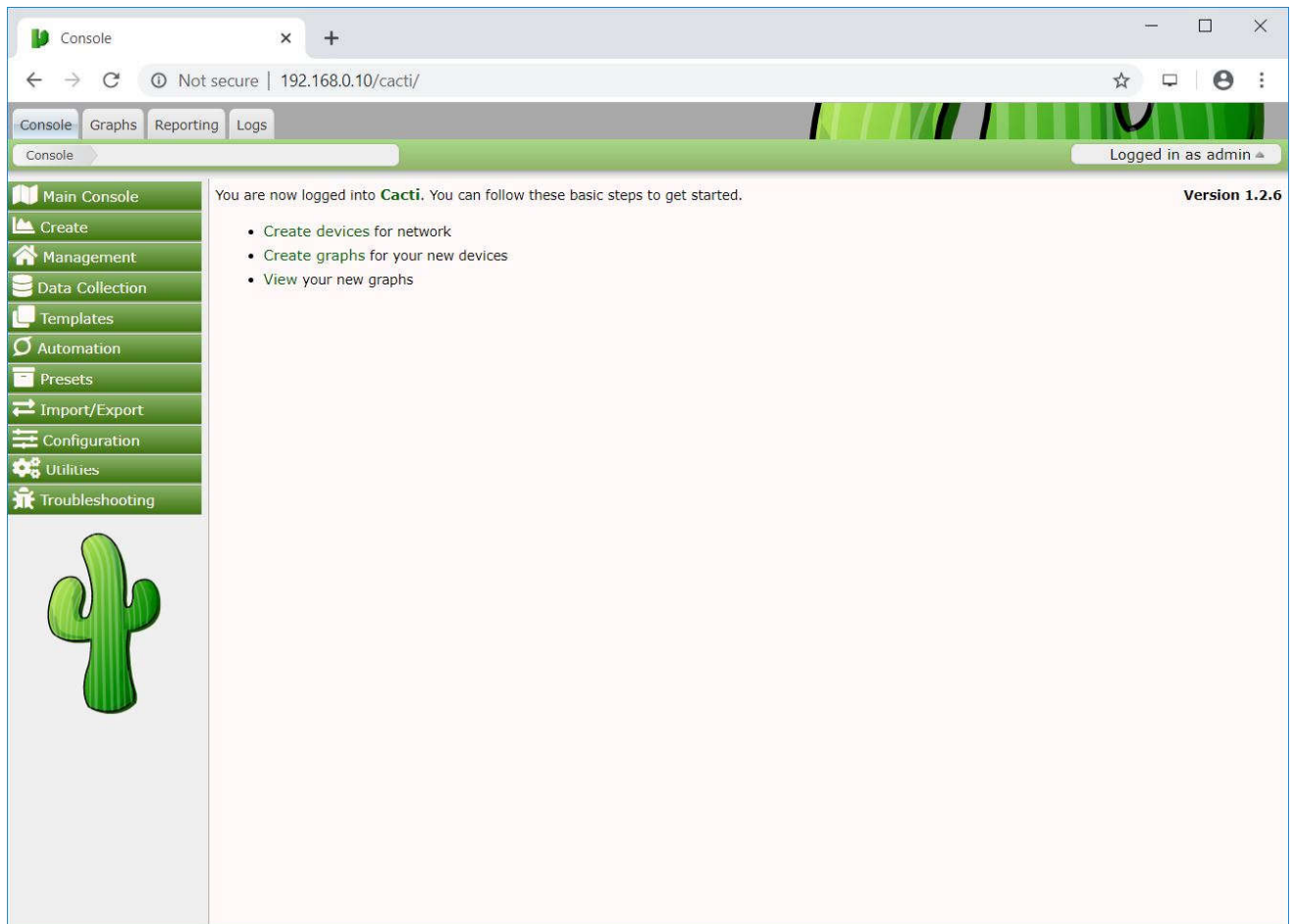
Enter the Username and password to login to Cacti.

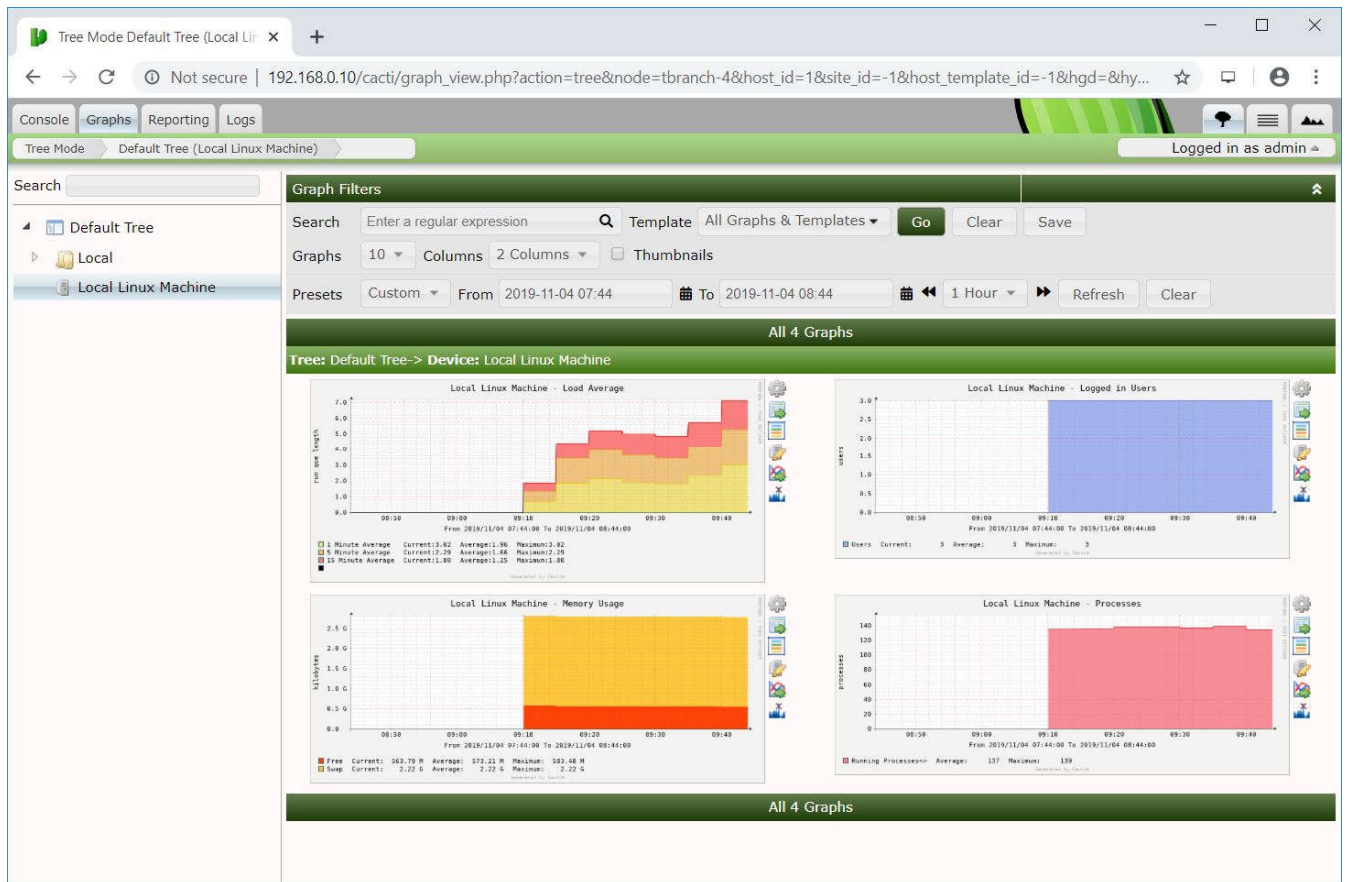Login To Cacti Monitoring Tool

Cacti Dashboard:

Cacti Dashboard

By default, Cacti creates resource usage graphs for the local machine where you have the Cacti installed.

To view the graphs, go to **Graph** >> **Default Tree** >> **Local** >> Choose **Your Device**.

Wait at least 15 – 30 minutes to let Cacti populate the usage graph of your device for you.

Device Graph