Comment installer-icinga-2-logiciel-de-contrôle-sur-debian-12

Icinga 2 is an open-source monitoring system that checks the availability of network resources, notifies users of outages, and generates performance data for reporting. You can monitor network services (SMTP, POP3, HTTP, NNTP, ping), host resources (CPU usage, Disk usage), and network components (switches, routers, temperature, and humidity sensors) using Icinga2. It can be integrated with Nagios plugins.

In the following tutorial, you will learn how to install Icinga2 on a Debian 12 server and connect it to a client node. Instead of the default Apache server, we will use Nginx to run Icinga2 Web.

Prerequisites

- Two machines running Debian 12. One of them will act as a Master server and another one will act as the client for monitoring.
- A non-root user with sudo privileges on both servers.
- A fully qualified domain name (FQDN) for the master server, `icinga.example.com` and the client node, `client.example.com`.
- Make sure everything is updated.

  ```
  $ sudo apt update && sudo apt upgrade
  ```

- Few packages that your system needs.

  ```
  $ sudo apt install wget curl nano software-properties-common dirmngr apt-transport-https gnupg2 ca-certificates lsb-release debian-archive-keyring ufw unzip -y
  ```

  Some of these packages may already be installed on your system.

Step 1 - Configure Firewall on the Master server

The first step is to configure the firewall. Debian comes with ufw (Uncomplicated Firewall) by default.

Check if the firewall is running.

```
$ sudo ufw status
```

You should get the following output.

```
Status: inactive
```

Allow SSH port so the firewall doesn't break the current connection on enabling it.

```
$ sudo ufw allow OpenSSH
```

Allow port 5665 which is required by the Icinga2 client to connect to the server.

```
$ sudo ufw allow 5665
```

Allow HTTP and HTTPS ports as well.

```
$ sudo ufw allow http
$ sudo ufw allow https
```

Enable the Firewall

```
$ sudo ufw enable
Command may disrupt existing ssh connections. Proceed with operation (y|n)? y
Firewall is active and enabled on system startup
```

Check the status of the firewall again.

```
$ sudo ufw status
```

You should see a similar output.

```
Status: active

To                         Action      From
--                         ------      ----
OpenSSH                    ALLOW       Anywhere
80/tcp                     ALLOW       Anywhere
443                        ALLOW       Anywhere
5665                       ALLOW       Anywhere
OpenSSH (v6)               ALLOW       Anywhere (v6)
80/tcp (v6)                ALLOW       Anywhere (v6)
443 (v6)                   ALLOW       Anywhere (v6)
5665 (v6)                  ALLOW       Anywhere (v6)
```

Step 2 - Install MariaDB Server

Debian 12 ships with the latest version of MariaDB. You can install it with a single command.

```
$ sudo apt install mariadb-server
```

Check the version of MySQL.

```
$ mysql --version
mysql  Ver 15.1 Distrib 10.11.4-MariaDB, for debian-linux-gnu (x86_64) using  EditLine wrapper
```

Run the MariaDB secure install script.

```
$ sudo mariadb-secure-installation
```

You will be asked for the root password. Press **Enter** because we haven't set any password for it.

```
NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB
      SERVERS IN PRODUCTION USE!  PLEASE READ EACH STEP CAREFULLY!

In order to log into MariaDB to secure it, we'll need the current
password for the root user. If you've just installed MariaDB, and
haven't set the root password yet, you should just press enter here.

Enter current password for root (enter for none):
```

Next, you will be asked if you want to switch to the Unix socket authentication method. The `unix_socket` plugin allows you to use your operating system credentials to connect to the MariaDB server. Since you already have a protected root account, enter `n` to proceed.

```
OK, successfully used password, moving on...

Setting the root password or using the unix_socket ensures that nobody
can log into the MariaDB root user without the proper authorisation.

You already have your root account protected, so you can safely answer 'n'.

Switch to unix_socket authentication [Y/n] n
```

Next, you will be asked if you want to change your root password. On Debian 12, the root password is tied closely to automated system maintenance, so it should be left alone. Type `n` to proceed further.

```
 ... skipping.

You already have your root account protected, so you can safely answer 'n'.

Change the root password? [Y/n] n
```

Next, you will be asked certain questions to improve MariaDB security. Type **Y** to remove anonymous users, disallow remote root logins, remove the test database, and reload the privilege tables.

```
 ... skipping.

By default, a MariaDB installation has an anonymous user, allowing anyone
to log into MariaDB without having to have a user account created for
them.  This is intended only for testing, and to make the installation
go a bit smoother.  You should remove them before moving into a
production environment.

Remove anonymous users? [Y/n] y
 ... Success!

Normally, root should only be allowed to connect from 'localhost'.  This
ensures that someone cannot guess at the root password from the network.

Disallow root login remotely? [Y/n] y
 ... Success!

By default, MariaDB comes with a database named 'test' that anyone can
access.  This is also intended only for testing, and should be removed
before moving into a production environment.

Remove test database and access to it? [Y/n] y
 - Dropping test database...
 ... Success!
 - Removing privileges on test database...
 ... Success!

Reloading the privilege tables will ensure that all changes made so far
will take effect immediately.

Reload privilege tables now? [Y/n] y
 ... Success!

Cleaning up...

All done!  If you've completed all of the above steps, your MariaDB
installation should now be secure.

Thanks for using MariaDB!
```

You can enter the MariaDB shell by typing `sudo mysql` or `sudo mariadb` on the command line.

Step 3 - Configure MariaDB

Log in to the MariaDB shell. Enter your root password when prompted.

```
$ sudo mysql
```

Create the Icinga database.

```
MariaDB [(none)]> CREATE DATABASE icinga2;
```

Create the SQL user account for Icinga2. Don't change the database and the username because they are already set by default. If you want to change them, you will need to perform some extra steps while installing the MySQL driver in Step 5. Enter the password and you will get an error and then be asked to reconfigure where you can specify your custom database name and users.

```
MariaDB [(none)]> CREATE USER 'icinga2'@'localhost' IDENTIFIED BY 'Your_password2';
```

Grant all privileges on the database to the user.

```
MariaDB [(none)]> GRANT ALL PRIVILEGES ON icinga2.* TO 'icinga2'@'localhost';
```

Since we are not modifying the root user, you should create another SQL user for performing administrative tasks that employ password authentication. Choose a strong password for this one.

```
MariaDB> GRANT ALL ON *.* TO 'navjot'@'localhost' IDENTIFIED BY 'Yourpassword32!' WITH GRANT OPTION;
```

Flush user privileges.

```
MariaDB [(none)]> FLUSH PRIVILEGES;
```

Exit the shell.

```
MariaDB [(none)]> exit
```

Step 4 - Install Icinga2 and Monitoring plugins on the Master Server

We will use the Icinga2 official repository for installation. Download and import the Icinga2 GPG key.

```
$ wget -O - https://packages.icinga.com/icinga.key | sudo gpg --dearmor -o /usr/share/keyrings/icinga-archive-keyring.gpg
```

Run the following commands to create and add the Icinga2 repository information to the APT sources list.

```
$ echo "deb [signed-by=/usr/share/keyrings/icinga-archive-keyring.gpg] https://packages.icinga.com/debian icinga-`lsb_release -cs` main" | sudo tee /etc/apt/sources.list.d/$(lsb_release -cs)-icinga.list
$ echo "deb-src [signed-by=/usr/share/keyrings/icinga-archive-keyring.gpg] http://packages.icinga.com/debian icinga-`lsb_release -cs` main" | sudo tee -a /etc/apt/sources.list.d/$(lsb_release -cs)-icinga.list
```

Update the system repositories list.

```
$ sudo apt update
```

Install Icinga2, Icingacli, and the monitoring plugins.

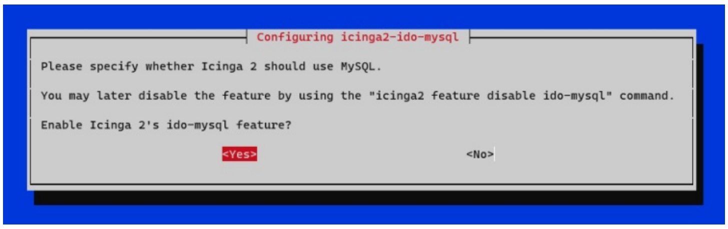
```
$ sudo apt install icinga2 monitoring-plugins -y
```

Step 5 - Install IDO MySQL driver on the Master Server

For Icinga2 to work, it needs a database. For that, we need to install the IDO MySQL driver and set up the database connection. Run the following command to install the MySQL driver.

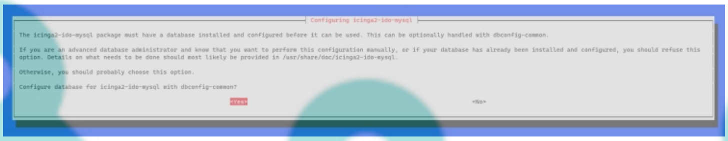
```
$ sudo apt install -y icinga2-ido-mysql
```

Next, you will be asked to enable the **ido-mysql** feature. Select **Yes** to continue.



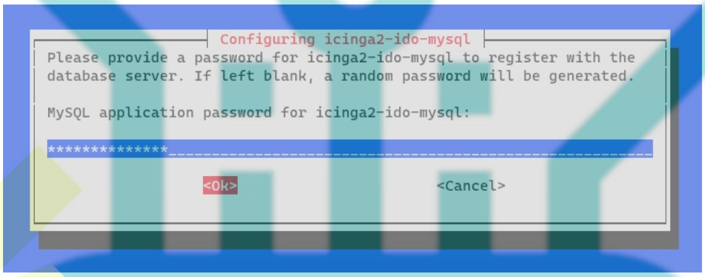
```
Configuring icinga2-ido-mysql

Please specify whether Icinga 2 should use MySQL.

You may later disable the feature by using the "icinga2 feature disable ido-mysql" command.

Enable Icinga 2's ido-mysql feature?
```

Next, You will be prompted to set up the driver and create a database using the *dbconfig-common* utility. Select **Yes** to continue.



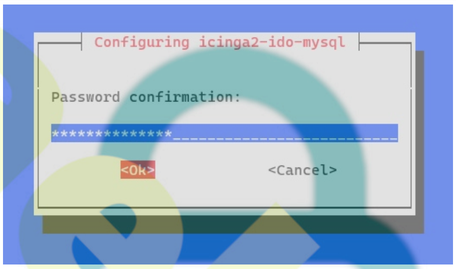
```
Configuring icinga2-ido-mysql

The icinga2-ido-mysql package must have a database installed and configured before it can be used. This can be optionally handled with dbconfig-common.

If you are an advanced database administrator and know that you want to perform this configuration manually, or if your database has already been installed and configured, you should refuse this
option. Details on what needs to be done should most likely be provided in /usr/share/doc/icinga2-ido-mysql.

Otherwise, you should probably choose this option.

Configure database for icinga2-ido-mysql with dbconfig-common?
```

Next, you will be asked for the MySQL password for the **icinga2** database. Enter the password configured in step 3 to continue.



```
Configuring icinga2-ido-mysql
Please provide a password for icinga2-ido-mysql to register with the
database server. If left blank, a random password will be generated.

MySQL application password for icinga2-ido-mysql:

**************
```

You will be asked to confirm the password again.



```
Configuring icinga2-ido-mysql

Password confirmation:

**************
```

You can check the database details in the */etc/icinga2/features-available/ido-mysql.conf* file.

```
$ sudo cat /etc/icinga2/features-available/ido-mysql.conf
/**
  * The db_ido_mysql library implements IDO functionality
  * for MySQL.
  */

library "db_ido_mysql"

object IdoMysqlConnection "ido-mysql" {
  user = "icinga2",
  password = "Your_password2",
  host = "localhost",
  database = "icinga2"
}
```

Enable the *ido-mysql* feature.

```
$ sudo icinga2 feature enable ido-mysql
Enabling feature ido-mysql. Make sure to restart Icinga 2 for these changes to take effect.
```

Restart the Icinga2 service.

```
$ sudo systemctl restart icinga2
```

Verify the service status.

```
$ sudo systemctl status icinga2
? icinga2.service - Icinga host/service/network monitoring system
     Loaded: loaded (/lib/systemd/system/icinga2.service; enabled; preset: enabled)
    Drop-In: /etc/systemd/system/icinga2.service.d
             ??limits.conf
     Active: active (running) since Mon 2024-01-08 07:35:29 UTC; 4s ago
    Process: 15404 ExecStartPre=/usr/lib/icinga2/prepare-dirs /etc/default/icinga2 (code=exited, status=0/SUCCESS)
   Main PID: 15411 (icinga2)
     Status: "Startup finished."
      Tasks: 14
     Memory: 13.6M
        CPU: 858ms
     CGroup: /system.slice/icinga2.service
             ??15411 /usr/lib/x86_64-linux-gnu/icinga2/sbin/icinga2 --no-stack-rlimit daemon --close-stdio -e /var/log/icinga2/error.log
             ??15433 /usr/lib/x86_64-linux-gnu/icinga2/sbin/icinga2 --no-stack-rlimit daemon --close-stdio -e /var/log/icinga2/error.log
             ??15438 /usr/lib/x86_64-linux-gnu/icinga2/sbin/icinga2 --no-stack-rlimit daemon --close-stdio -e /var/log/icinga2/error.log
```

Step 6 - Configure Icinga2 API

To manage and configure the Icinga2 monitoring through HTTP, you need to configure the Icinga2 API. Run the following command to enable the Icinga2 API, generate TLS certificates for Icinga2, and update Icinga2 configurations.

```
$ sudo icinga2 api setup
```

You will get a similar output.

```
information/cli: Generating new CA.
information/base: Writing private key to '/var/lib/icinga2/ca//ca.key'.
information/base: Writing X509 certificate to '/var/lib/icinga2/ca//ca.crt'.
information/cli: Generating new CSR in '/var/lib/icinga2/certs//icinga.example.com.csr'.
information/base: Writing private key to '/var/lib/icinga2/certs//icinga.example.com.key'.
information/base: Writing certificate signing request to '/var/lib/icinga2/certs//icinga.example.com.csr'.
information/cli: Signing CSR with CA and writing certificate to '/var/lib/icinga2/certs//icinga.example.com.crt'.
information/pki: Writing certificate to file '/var/lib/icinga2/certs//icinga.example.com.crt'.
information/cli: Copying CA certificate to '/var/lib/icinga2/certs//ca.crt'.
information/cli: Adding new ApiUser 'root' in '/etc/icinga2/conf.d/api-users.conf'.
information/cli: Reading '/etc/icinga2/icinga2.conf'.
information/cli: Enabling the 'api' feature.
Enabling feature api. Make sure to restart Icinga 2 for these changes to take effect.
information/cli: Updating 'NodeName' constant in '/etc/icinga2/constants.conf'.
information/cli: Created backup file '/etc/icinga2/constants.conf.orig'.
information/cli: Updating 'ZoneName' constant in '/etc/icinga2/constants.conf'.
information/cli: Backup file '/etc/icinga2/constants.conf.orig' already exists. Skipping backup.
Done.
```

```
Now restart your Icinga 2 daemon to finish the installation!
```

The above command creates a `/etc/icinga2/conf.d/api-users.conf` file with the default user `root` having all the permissions over the Icinga2 API. We need a new user with minimal permissions required by Icinga Web.

Open the `api-users.conf` file for editing.

```
$ sudo nano /etc/icinga2/conf.d/api-users.conf
```

Add the following code at the end of the file. Choose a strong password for the API.

```
/** api for icingaweb2 */
object ApiUser "icingaweb2" {
  password = "PassWordApiIcingaWeb2"
  permissions = [ "status/query", "actions/*", "objects/modify/*", "objects/query/*" ]
}
```

Make a note of the credentials which will be needed later on to access the website. The Icinga2 API server listens on port 5665 by default. Restart the service for the changes to take effect.

```
$ sudo systemctl restart icinga2
```

The next step is to install the Icinga Web interface. It comes pre-configured for Apache but we will be using the Nginx server. Therefore, first, we need to install Nginx and the SSL certificates.

Step 7 - Install Nginx

Debian 12 ships with an older version of Nginx. To install the latest version, you need to download the official Nginx repository.

Import Nginx's signing key.

```
$ curl https://nginx.org/keys/nginx_signing.key | gpg --dearmor \
| sudo tee /usr/share/keyrings/nginx-archive-keyring.gpg >/dev/null
```

Add the repository for Nginx's mainline version.

```
$ echo "deb [signed-by=/usr/share/keyrings/nginx-archive-keyring.gpg arch=amd64] \
http://nginx.org/packages/mainline/debian `lsb_release -cs` nginx" \
| sudo tee /etc/apt/sources.list.d/nginx.list
```

Update the system repositories.

```
$ sudo apt update
```

Install Nginx.

```
$ sudo apt install nginx
```

Verify the installation. On Debian systems, the following command will only work with `sudo`.

```
$ sudo nginx -v
nginx version: nginx/1.25.3
```

Start the Nginx server.

```
$ sudo systemctl start nginx
```

Check the service status.

```
$ sudo systemctl status nginx
? nginx.service - nginx - high performance web server
     Loaded: loaded (/lib/systemd/system/nginx.service; enabled; preset: enabled)
     Active: active (running) since Mon 2024-01-08 07:43:24 UTC; 4s ago
       Docs: https://nginx.org/en/docs/
    Process: 16330 ExecStart=/usr/sbin/nginx -c /etc/nginx/nginx.conf (code=exited, status=0/SUCCESS)
   Main PID: 16331 (nginx)
      Tasks: 3 (limit: 2299)
     Memory: 2.9M
        CPU: 16ms
     CGroup: /system.slice/nginx.service
             ??16331 "nginx: master process /usr/sbin/nginx -c /etc/nginx/nginx.conf"
             ??16332 "nginx: worker process"
             ??16333 "nginx: worker process"

Jan 08 07:43:24 icinga systemd[1]: Starting nginx.service - nginx - high performance web server...
Jan 08 07:43:24 icinga systemd[1]: Started nginx.service - nginx - high performance web server.
```

Step 8 - Install SSL

We need to install Certbot to generate the SSL certificate. You can install Certbot using Debian's repository or grab the latest version using the Snapd tool. We will be using the Snapd version.

Debian 12 comes doesn't come with Snapd installed. Install Snapd package.

```
$ sudo apt install snapd
```

Run the following commands to ensure that your version of Snapd is up to date.

```
$ sudo snap install core && sudo snap refresh core
```

Install Certbot.

```
$ sudo snap install --classic certbot
```

Use the following command to ensure that the Certbot command can be run by creating a symbolic link to the `/usr/bin` directory.

```
$ sudo ln -s /snap/bin/certbot /usr/bin/certbot
```

Verify if Certbot is functioning correctly.

```
$ certbot --version
certbot 2.8.0
```

Run the following command to generate an SSL Certificate.

```
$ sudo certbot certonly --nginx --agree-tos --no-eff-email --staple-ocsp --preferred-challenges http -m name@example.com -d icinga.example.com
```

The above command will download a certificate to the `/etc/letsencrypt/live/icinga.example.com` directory on your server.

Generate a **Diffie-Hellman group** certificate.

```
$ sudo openssl dhparam -dsaparam -out /etc/ssl/certs/dhparam.pem 4096
```

Check the Certbot renewal scheduler service.

```
$ sudo systemctl list-timers
```

You will find `snap.certbot.renew.service` as one of the services scheduled to run.

```
NEXT                        LEFT          LAST                        PASSED  UNIT                         ACTIVATES
-----------------------------------------------------------------------------------------------------------------------------
Mon 2024-01-08 09:47:46 UTC 1h 56min left Sun 2024-01-07 09:47:46 UTC 22h ago systemd-tmpfiles-clean.timer systemd-tmpfiles-clean.service
Mon 2024-01-08 13:35:00 UTC 5h 43min left -                           -       snap.certbot.renew.timer     snap.certbot.renew.service
Tue 2024-01-09 00:00:00 UTC 16h left      Mon 2024-01-08 00:00:01 UTC 7h ago  dpkg-db-backup.timer         dpkg-db-backup.service
```

Do a dry run of the process to check whether the SSL renewal is working fine.

```
$ sudo certbot renew --dry-run
```

If you see no errors, you are all set. Your certificate will renew automatically.

Step 9 - Configure Nginx and PHP

Since Icinga is configured for Apache, the PHP-FPM package is not installed by default. You will also need the PHP Imagick module if you want to export the graphs to PDF. Run the following command to install PHP-FPM and the PHP Imagick library.

```
$ sudo apt install php-fpm php-imagick
```

Configure PHP-FPM

Open the file `/etc/php/8.2/fpm/pool.d/www.conf`.

```
$ sudo nano /etc/php/8.2/fpm/pool.d/www.conf
```

We need to set the Unix user/group of PHP processes to **nginx**. Find the `user=www-data` and `group=www-data` lines in the file and change them to `nginx`.

```
...
; Unix user/group of processes
; Note: The user is mandatory. If the group is not set, the default user's group
;       will be used.
user = nginx
group = nginx
...
```

Find the `listen.owner = www-data` and `listen.group = www-data` lines in the file and change them to `nginx`.

```
; Set permissions for unix socket, if one is used. In Linux, read/write
; permissions must be set in order to allow connections from a web server. Many
; BSD-derived systems allow connections regardless of permissions. The owner
; and group can be specified either by name or by their numeric IDs.
; Default Values: user and group are set as the running user
;                 mode is set to 0660
listen.owner = nginx
listen.group = nginx
```

Save the file by pressing **Ctrl + X** and entering **Y** when prompted.

Restart the PHP-FPM service.

```
$ sudo systemctl restart php8.2-fpm
```

Configure Nginx

Create and open the file `/etc/nginx/conf.d/icinga.conf` for editing.

```
$ sudo nano /etc/nginx/conf.d/icinga.conf
```

Paste the following code in it.

```
server {
    listen       443 ssl http2;
    listen       [::]:443 ssl http2;
    server_name  icinga.example.com;

    access_log  /var/log/nginx/icinga.access.log;
    error_log   /var/log/nginx/icinga.error.log;

    # SSL
    ssl_certificate      /etc/letsencrypt/live/icinga.example.com/fullchain.pem;
    ssl_certificate_key  /etc/letsencrypt/live/icinga.example.com/privkey.pem;
    ssl_trusted_certificate /etc/letsencrypt/live/icinga.example.com/chain.pem;
    ssl_session_timeout  5m;
    ssl_session_cache shared:MozSSL:10m;
    ssl_session_tickets off;
    ssl_protocols TLSv1.2 TLSv1.3;
    ssl_prefer_server_ciphers on;
    ssl_ciphers ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-ECDSA-CHACHA20-POLY1305:ECDHE-RSA-CHACHA20-POLY1305:DHE-RSA-AES128-GCM-SHA256:DH
    ssl_ecdh_curve X25519:prime256v1:secp384r1:secp521r1;
    ssl_stapling on;
    ssl_stapling_verify on;
    ssl_dhparam /etc/ssl/certs/dhparam.pem;
    resolver 8.8.8.8;

    location ~ ^/index\.php(.*)$ {
        # fastcgi_pass 127.0.0.1:9000;
        fastcgi_pass unix:/run/php/php8.2-fpm.sock; # Depends On The PHP Version
        fastcgi_index index.php;
        # try_files $uri =404;
        # fastcgi_split_path_info ^(.+\.php)(/.+)$;
        include fastcgi_params;
        fastcgi_param SCRIPT_FILENAME /usr/share/icingaweb2/public/index.php;
        fastcgi_param ICINGAWEB_CONFIGDIR /etc/icingaweb2;
        fastcgi_param REMOTE_USER $remote_user;
    }

    location ~ ^/(.*)? {
        alias /usr/share/icingaweb2/public;
        index index.php;
        rewrite ^/$ /dashboard;
        try_files $1 $uri $uri/ /index.php$is_args$args;
    }

    location ~ \.php$ {
        return 404;
    }
}

# enforce HTTPS
server {
    listen       80;
    listen       [::]:80;
    server_name  icinga.example.com;
    return 301   https://$host$request_uri;
}
```

Notice the root directory to be used in the Nginx configuration is `/usr/share/icingaweb2/public`.

Save the file by pressing **Ctrl + X** and entering **Y** when prompted once finished.

Open the file `/etc/nginx/nginx.conf` for editing.

```
$ sudo nano /etc/nginx/nginx.conf
```

Add the following line before the line `include /etc/nginx/conf.d/*.conf;`.

```
server_names_hash_bucket_size 64;
```

Save the file by pressing **Ctrl + X** and entering **Y** when prompted.

Verify the Nginx configuration file syntax.

```
$ sudo nginx -t
nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
nginx: configuration file /etc/nginx/nginx.conf test is successful
```

Restart the Nginx service.

```
$ sudo systemctl restart nginx
```

Step 10 - Prepare Web Setup

Before accessing Icinga Web, we need to install it along with the command line tool.

```
$ sudo apt install icingaweb2 icingacli
```

Add the Nginx user to the `icingaweb2` group.

```
$ sudo usermod -aG icingaweb2 nginx
```

Set the permissions of the Icingaweb directory to the `icingaweb2` group.

```
$ sudo icingacli setup config directory --group icingaweb2
Successfully created configuration directory /etc/icingaweb2
```

When using Icinga Web, you are required to authenticate using a token. Generate the token using the following command.

```
$ sudo icingacli setup token create
The newly generated setup token is: 56951f01f9f77a68
```

Note down the token because you will need it later. You can always retrieve it later using the following command.

```
$ sudo icingacli setup token show
The current setup token is: 56951f01f9f77a68
```

The next step is to create a database and a database user. Log in to the MariaDB shell.

```
$ sudo mysql
```

Create the Icinga Web database.

```
MariaDB [(none)]> CREATE DATABASE icingaweb2;
```

Create the SQL user account for Icinga Web.

```
MariaDB [(none)]> CREATE USER 'icingaweb2'@'localhost' IDENTIFIED BY 'Your_password3';
```

Grant all privileges on the database to the user.

```
MariaDB [(none)]> GRANT ALL PRIVILEGES ON icingaweb2.* TO 'icingaweb2'@'localhost';
```

Flush user privileges.

```
MariaDB [(none)]> FLUSH PRIVILEGES;
```

Exit the shell.

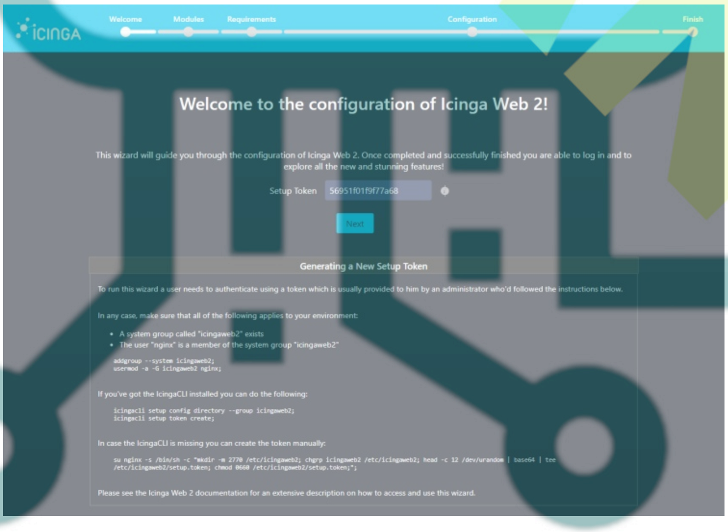
```
MariaDB [(none)]> exit
```

Restart Nginx and PHP-FPM to apply the permission changes.

```
$ sudo systemctl restart nginx php8.2-fpm
```

Step 11 - Set up IcingaWeb

Open the URL `https://icinga.example.com/setup` in your browser and you will get the following screen.



Welcome to the configuration of Icinga Web 2!

This wizard will guide you through the configuration of Icinga Web 2. Once completed and successfully finished you are able to log in and to explore all the new and stunning features!

Setup Token: 56951f01f9f77a68

Generating a New Setup Token

To run this wizard a user needs to authenticate using a token which is usually provided to him by an administrator who'd followed the instructions below.

In any case, make sure that all of the following applies to your environment:

- A system group called "icingaweb2" exists
- The user "nginx" is a member of the system group "icingaweb2"

```
addgroup --system icingaweb2;
usermod -a -G icingaweb2 nginx;
```

If you've got the IcingaCLI installed you can do the following:

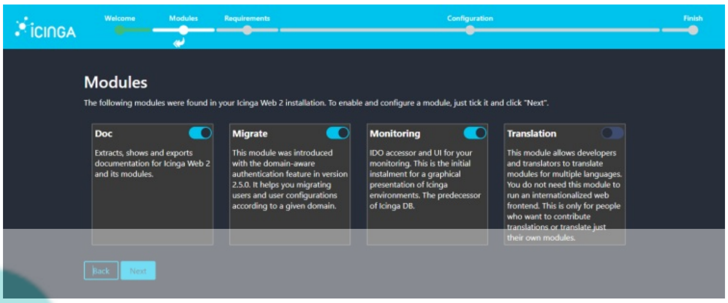
```
icingacli setup config directory --group icingaweb2;
icingacli setup token create;
```

In case the IcingaCLI is missing you can create the token manually:

```
su nginx -s /bin/sh -c "mkdir -m 2770 /etc/icingaweb2; chgrp icingaweb2 /etc/icingaweb2; head -c 12 /dev/urandom | base64 | tee
/etc/icingaweb2/setup.token; chmod 0660 /etc/icingaweb2/setup.token;";
```

Please see the Icinga Web 2 documentation for an extensive description on how to access and use this wizard.

Enter the token generated in the previous step and press the **Next** button to proceed.



Modules

The following modules were found in your Icinga Web 2 installation. To enable and configure a module, just tick it and click "Next".

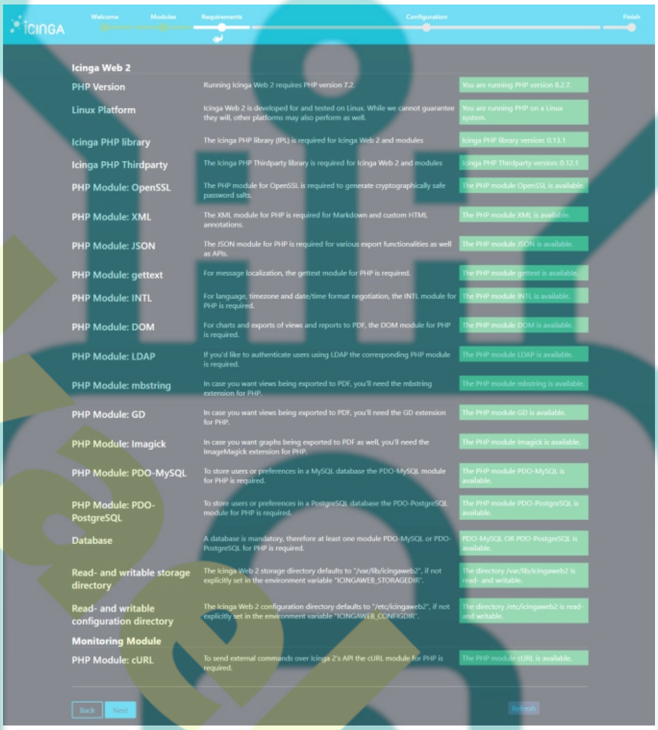
Doc ●
Extracts, shows and exports documentation for Icinga Web 2 and its modules.

Migrate ●
This module was introduced with the domain-aware authentication feature in version 2.5.0. It helps you migrating users and user configurations according to a given domain.

Monitoring ●
IDO accessor and UI for your monitoring. This is the initial instalment for a graphical presentation of Icinga environments. The predecessor of Icinga DB.

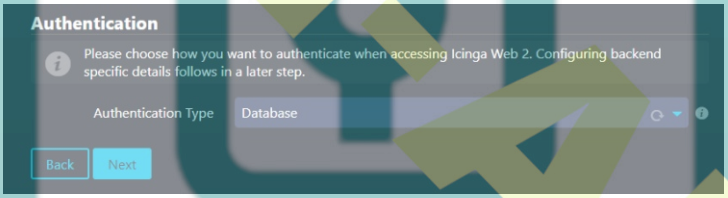
Translation ○
This module allows developers and translators to translate modules for multiple languages. You do not need this module to run an internationalized web frontend. This is only for people who want to contribute translations or translate just their own modules.

On the next screen, choose the modules you want to install and click **Next** to proceed. The **Monitoring** module is selected for you by default. On the next page, you will be shown the requirements and whether they have been fulfilled. Make sure all the requirements are marked green.



Icinga Web 2		
PHP Version	Running Icinga Web 2 requires PHP version 7.2.	You are running PHP version 8.2.7.
Linux Platform	Icinga Web 2 is developed for and tested on Linux. While we cannot guarantee they will, other platforms may also perform as well.	You are running PHP on a Linux system.
Icinga PHP library	The Icinga PHP library (IPL) is required for Icinga Web 2 and modules	Icinga PHP library version: 0.13.1
Icinga PHP Thirdparty	The Icinga PHP Thirdparty library is required for Icinga Web 2 and modules	Icinga PHP Thirdparty version: 0.12.1
PHP Module: OpenSSL	The PHP module for OpenSSL is required to generate cryptographically safe password salts.	The PHP module OpenSSL is available.
PHP Module: XML	The XML module for PHP is required for Markdown and custom HTML annotations.	The PHP module XML is available.
PHP Module: JSON	The JSON module for PHP is required for various export functionalities as well as APIs.	The PHP module JSON is available.
PHP Module: gettext	For message localization, the gettext module for PHP is required.	The PHP module gettext is available.
PHP Module: INTL	For language, timezone and date/time format negotiation, the INTL module for PHP is required.	The PHP module INTL is available.
PHP Module: DOM	For charts and exports of views and reports to PDF, the DOM module for PHP is required.	The PHP module DOM is available.
PHP Module: LDAP	If you'd like to authenticate users using LDAP the corresponding PHP module is required.	The PHP module LDAP is available.
PHP Module: mbstring	In case you want views being exported to PDF, you'll need the mbstring extension for PHP.	The PHP module mbstring is available.
PHP Module: GD	In case you want views being exported to PDF, you'll need the GD extension for PHP.	The PHP module GD is available.
PHP Module: Imagick	In case you want graphs being exported to PDF as well, you'll need the ImageMagick extension for PHP.	The PHP module Imagick is available.
PHP Module: PDO-MySQL	To store users or preferences in a MySQL database the PDO-MySQL module for PHP is required.	The PHP module PDO-MySQL is available.
PHP Module: PDO-PostgreSQL	To store users or preferences in a PostgreSQL database the PDO-PostgreSQL module for PHP is required.	The PHP module PDO-PostgreSQL is available.
Database	A database is mandatory, therefore at least one module PDO-MySQL or PDO-PostgreSQL for PHP is required.	PDO-MySQL OR PDO-PostgreSQL is available.
Read- and writable storage directory	The Icinga Web 2 storage directory defaults to "/var/lib/icingaweb2", if not explicitly set in the environment variable "ICINGAWEB_STORAGEDIR".	The directory /var/lib/icingaweb2 is read- and writable.
Read- and writable configuration directory	The Icinga Web 2 configuration directory defaults to "/etc/icingaweb2", if not explicitly set in the environment variable "ICINGAWEB_CONFIGDIR".	The directory /etc/icingaweb2 is read- and writable.
Monitoring Module		
PHP Module: cURL	To send external commands over Icinga 2's API the cURL module for PHP is required.	The PHP module cURL is available.

Click **Next** to proceed to the next page to select the authentication type.

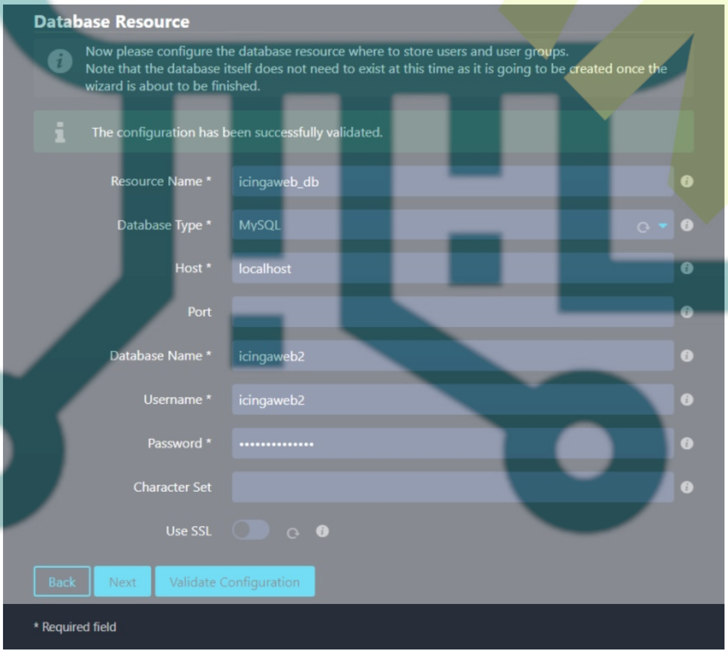


Authentication

Please choose how you want to authenticate when accessing Icinga Web 2. Configuring backend specific details follows in a later step.

Authentication Type: Database

The authentication type is set to Database by default. Click **Next** to proceed. You will be asked to fill in the database credentials on the next page.



Database Resource

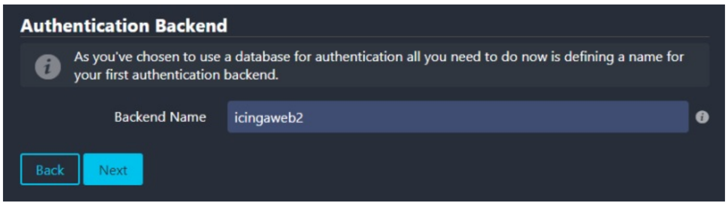
Now please configure the database resource where to store users and user groups.
Note that the database itself does not need to exist at this time as it is going to be created once the wizard is about to be finished.

The configuration has been successfully validated.

Resource Name *: icingaweb_db
Database Type *: MySQL
Host *: localhost
Port:
Database Name *: icingaweb2
Username *: icingaweb2
Password *: •••••••••••••
Character Set:
Use SSL: ○

* Required field

Fill in the database credentials created in step 10. Click the **Validate Configuration** button to verify the credentials. Once verified, click **Next** to proceed. Next, you will be asked to name the authentication backend.

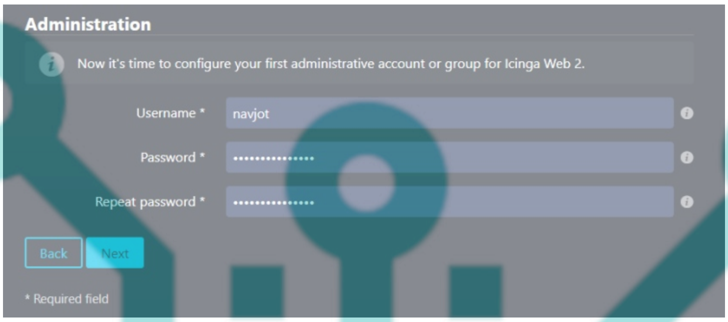


Authentication Backend

As you've chosen to use a database for authentication all you need to do now is defining a name for your first authentication backend.

Backend Name: icingaweb2

Leave the default value and click **Next** to proceed. On the next page, you will be asked to create an administrator account.



Administration

Now it's time to configure your first administrative account or group for Icinga Web 2.

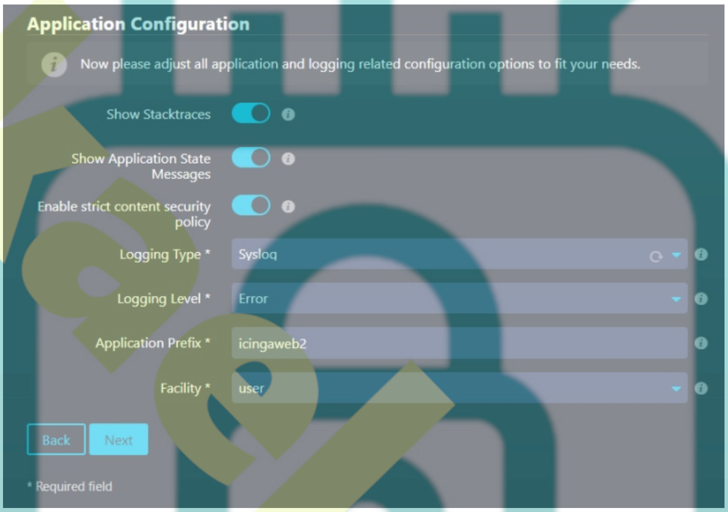
Username *: navjot

Password *: •••••••••••••••

Repeat password *: •••••••••••••••

* Required field

Enter the credentials for your new administrator account and click **Next** to proceed. Next, you will be shown the **Application Configuration** page.



Application Configuration

Now please adjust all application and logging related configuration options to fit your needs.

Show Stacktraces: ●

Show Application State Messages: ●

Enable strict content security policy: ●

Logging Type *: Syslog

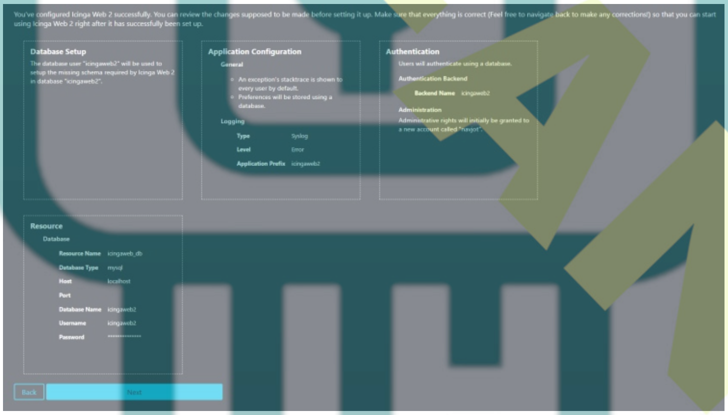
Logging Level *: Error

Application Prefix *: icingaweb2

Facility *: user

* Required field

The **Enable strict content security policy** is unchecked. Check it and leave all the other default values untouched. Click **Next** to proceed. You will be asked to review the configuration on the last page.



You've configured Icinga Web 2 successfully. You can review the changes supposed to be made before setting it up. Make sure that everything is correct (Feel free to navigate back to make any corrections!) so that you can start using Icinga Web 2 right after it has successfully been set up.

Database Setup

The database user "icingaweb2" will be used to setup the missing schema required by Icinga Web 2 in database "icingaweb2".

Application Configuration

General

- An exception's stacktrace is shown to every user by default.
- Preferences will be stored using a database.

Logging

Type: Syslog

Level: Error

Application Prefix: icingaweb2

Authentication

Users will authenticate using a database.

Authentication Backend

Backend Name: icingaweb2

Administration

Administrative rights will initially be granted to a new account called "navjot".

Resource

Database

Resource Name: icingaweb_db

Database Type: mysql

Host: localhost

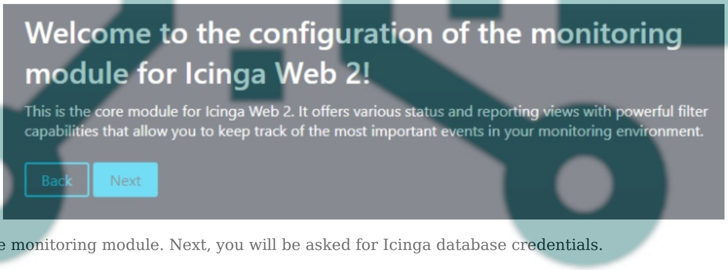
Port:

Database Name: icingaweb2

Username: icingaweb2

Password: **************

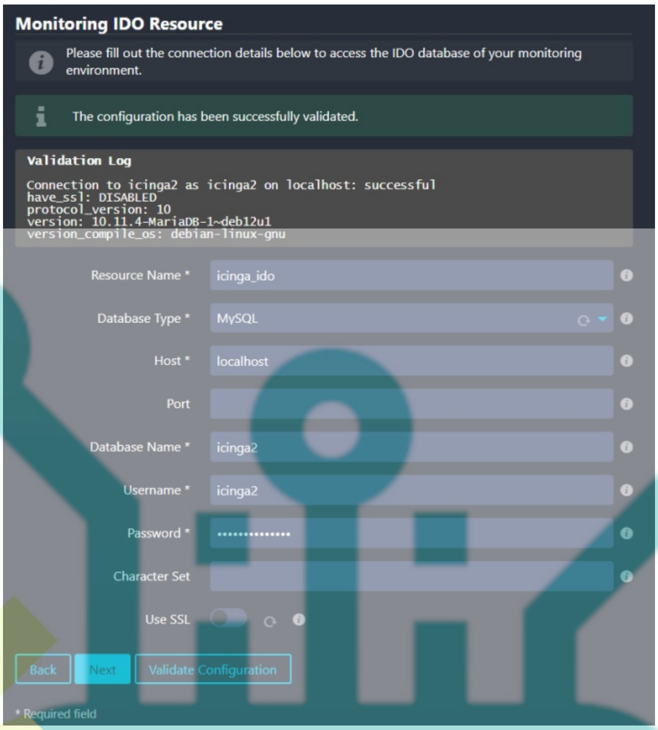
You can go back to change any of the settings. If you are satisfied, click **Next** to proceed.



Welcome to the configuration of the monitoring module for Icinga Web 2!

This is the core module for Icinga Web 2. It offers various status and reporting views with powerful filter capabilities that allow you to keep track of the most important events in your monitoring environment.

Click **Next** to proceed with the configuration of the monitoring module. Next, you will be asked for Icinga database credentials.



Monitoring IDO Resource

Please fill out the connection details below to access the IDO database of your monitoring environment.

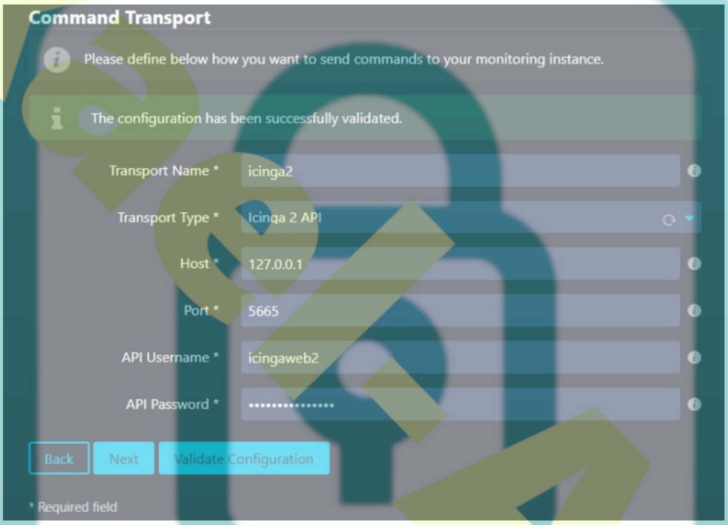
The configuration has been successfully validated.

```
Validation Log

Connection to icinga2 as icinga2 on localhost: successful
have_ssl: DISABLED
protocol_version: 10
version: 10.11.4-MariaDB-1~deb12u1
version_compile_os: debian-linux-gnu
```

Resource Name *: icinga_ido
Database Type *: MySQL
Host *: localhost
Port:
Database Name *: icinga2
Username *: icinga2
Password *: ••••••••••••••
Character Set:
Use SSL:

* Required field

Fill in the database credentials in step 3 and click **Validate Configuration** to verify the connection. Once verified, click **Next** to proceed. Next, you will be asked to fill in the API details.



Command Transport

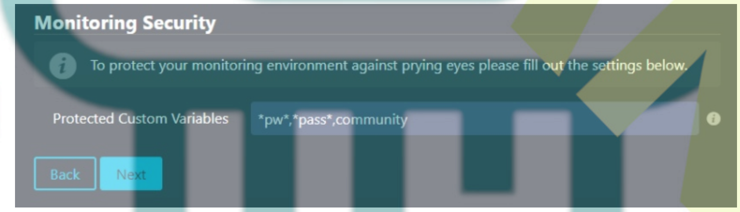
Please define below how you want to send commands to your monitoring instance.

The configuration has been successfully validated.

Transport Name *: icinga2
Transport Type *: Icinga 2 API
Host *: 127.0.0.1
Port *: 5665
API Username *: icingaweb2
API Password *: •••••••••••••••

* Required field

Fill in the API credentials created in step 6, `127.0.0.1` as the **Host**, and click **Validate Configuration** to verify the connection. Click **Next** to proceed. Next, you will be asked to choose protected custom variables for monitoring security.

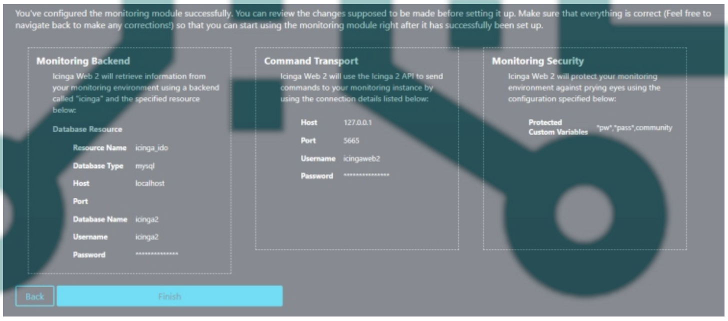


Monitoring Security

To protect your monitoring environment against prying eyes please fill out the settings below.

Protected Custom Variables: *pw*,*pass*,community

Leave the default values and click **Next** to proceed. Next, you will be asked to review the Monitoring configuration. You can go back and change it if you want.



You've configured the monitoring module successfully. You can review the changes supposed to be made before setting it up. Make sure that everything is correct (Feel free to navigate back to make any corrections!) so that you can start using the monitoring module right after it has successfully been set up.

Monitoring Backend

Icinga Web 2 will retrieve information from your monitoring environment using a backend called "icinga" and the specified resource below:

Database Resource

Resource Name	icinga_ido
Database Type	mysql
Host	localhost
Port	
Database Name	icinga2
Username	icinga2
Password	**************

Command Transport

Icinga Web 2 will use the Icinga 2 API to send commands to your monitoring instance by using the connection details listed below:

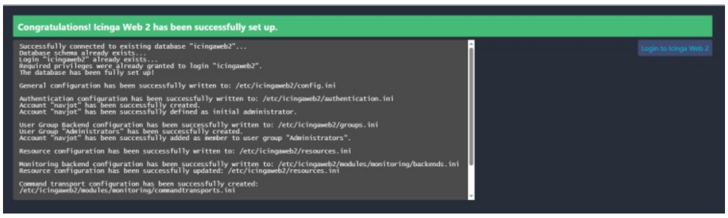
Host	127.0.0.1
Port	5665
Username	icingaweb2
Password	***************

Monitoring Security

Icinga Web 2 will protect your monitoring environment against prying eyes using the configuration specified below:

Protected Custom Variables	*pw*,*pass*,community

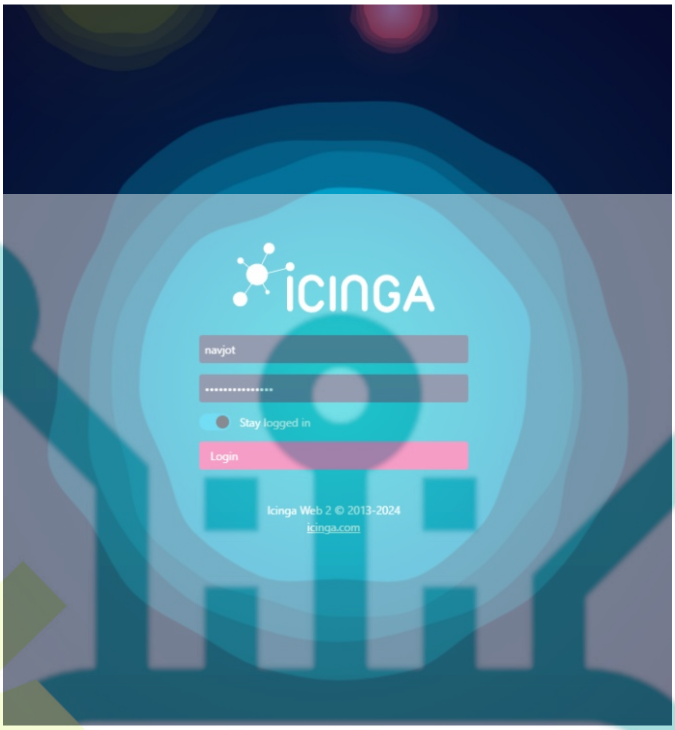
If you are satisfied, click **Finish** to complete the installation.



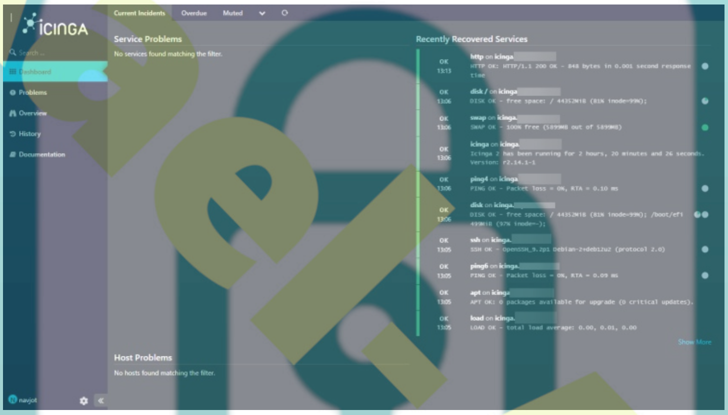
Congratulations! Icinga Web 2 has been successfully set up.

```
Successfully connected to existing database "icingaweb2"...
Database schema already exists...
Login "icingaweb2" already exists...
Required privileges were already granted to login "icingaweb2".
The database has been fully set up!

General configuration has been successfully written to: /etc/icingaweb2/config.ini

Authentication configuration has been successfully written to: /etc/icingaweb2/authentication.ini
Account "navjot" has been successfully created.
Account "navjot" has been successfully defined as initial administrator.

User Group Backend configuration has been successfully written to: /etc/icingaweb2/groups.ini
User Group "Administrators" has been successfully created.
Account "navjot" has been successfully added as member to user group "Administrators".

Resource configuration has been successfully written to: /etc/icingaweb2/resources.ini

Monitoring backend configuration has been successfully written to: /etc/icingaweb2/modules/monitoring/backends.ini
Resource configuration has been successfully updated: /etc/icingaweb2/resources.ini

Command transport configuration has been successfully created:
/etc/icingaweb2/modules/monitoring/commandtransports.ini
```

Once finished successfully, click the **Login to Icinga Web 2** button to open the login page (`https://icinga.example.com`).



Enter your administrator account details and click the **Login** button to open the Icinga Web dashboard.



Service Problems

No services found matching the filter.

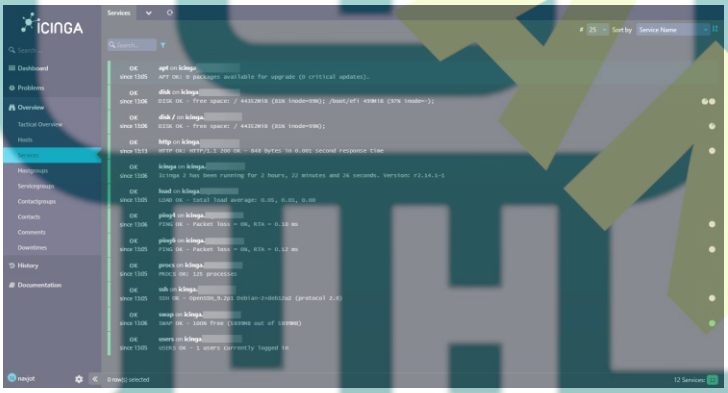
Host Problems

No hosts found matching the filter.

Recently Recovered Services

```
OK 13:13  http on icinga.[redacted]
          HTTP OK: HTTP/1.1 200 OK - 848 bytes in 0.001 second response time
OK 13:06  disk / on icinga[redacted]
          DISK OK - free space: / 44352MiB (81% inode=99%);
OK 13:06  swap on icinga.[redacted]
          SWAP OK - 100% free (5899MB out of 5899MB)
OK 13:06  icinga on icinga.[redacted]
          Icinga 2 has been running for 2 hours, 20 minutes and 26 seconds. Version: r2.14.1-1
OK 13:06  ping4 on icinga[redacted]
          PING OK - Packet loss = 0%, RTA = 0.10 ms
OK 13:06  disk on icinga.[redacted]
          DISK OK - free space: / 44352MiB (81% inode=99%); /boot/efi 499MiB (97% inode=-);
OK 13:05  ssh on icinga.[redacted]
          SSH OK - OpenSSH_9.2p1 Debian-2+deb12u2 (protocol 2.0)
OK 13:05  ping6 on icinga.[redacted]
          PING OK - Packet loss = 0%, RTA = 0.09 ms
OK 13:05  apt on icinga[redacted]
          APT OK: 0 packages available for upgrade (0 critical updates).
OK 13:05  load on icinga.[redacted]
          LOAD OK - total load average: 0.00, 0.01, 0.00
```

Visit the **Overview >> Services** page to check the status of the master server similar to the following.



```
OK since 13:05  apt on icinga[redacted]
                APT OK: 0 packages available for upgrade (0 critical updates).
OK since 13:06  disk on icinga[redacted]
                DISK OK - free space: / 44352MiB (81% inode=99%); /boot/efi 499MiB (97% inode=-);
OK since 13:06  disk / on icinga.[redacted]
                DISK OK - free space: / 44352MiB (81% inode=99%);
OK since 13:13  http on icinga.[redacted]
                HTTP OK: HTTP/1.1 200 OK - 848 bytes in 0.001 second response time
OK since 13:06  icinga on icinga.[redacted]
                Icinga 2 has been running for 2 hours, 22 minutes and 26 seconds. Version: r2.14.1-1
OK since 13:05  load on icinga[redacted]
                LOAD OK - total load average: 0.05, 0.01, 0.00
OK since 13:06  ping4 on icinga.[redacted]
                PING OK - Packet loss = 0%, RTA = 0.10 ms
OK since 13:05  ping6 on icinga.[redacted]
                PING OK - Packet loss = 0%, RTA = 0.12 ms
OK since 13:05  procs on icinga.[redacted]
                PROCS OK: 125 processes
OK since 13:05  ssh on icinga.[redacted]
                SSH OK - OpenSSH_9.2p1 Debian-2+deb12u2 (protocol 2.0)
OK since 13:06  swap on icinga.[redacted]
                SWAP OK - 100% free (5899MB out of 5899MB)
OK since 13:05  users on icinga[redacted]
                USERS OK - 1 users currently logged in
```

0 row(s) selected

12 Services: 12

Step 12 - Initialize Master Server

The next step is to initialize the master server as the master node. The master node acts as the main controller for the monitoring stack. Run the following command to start the initialization process.

```
$ sudo icinga2 node wizard
```

You will be prompted if it is an agent setup. Enter `n` to set up the master node.

```
Welcome to the Icinga 2 Setup Wizard!

We will guide you through all required configuration details.

Please specify if this is an agent/satellite setup ('n' installs a master setup) [Y/n]: n
```

Next, you will be asked for the common name or the domain name. Press **Enter** to select the default value that is displayed if it's the correct one. Otherwise, enter the domain and press **Enter**.

```
Please specify the common name (CN) [icinga.example.com]:
Reconfiguring Icinga...
Checking for existing certificates for common name 'icinga.example.com'...
Certificate '/var/lib/icinga2/certs//icinga.example.com.crt' for CN 'icinga.example.com' already existing. Skipping certificate generation.
Generating master configuration for Icinga 2.
'api' feature already enabled.
```

Next, enter the master zone name and press **Enter** to proceed. In our case, it is the same as the server domain name.

```
Master zone name [master]: icinga.example.com
```

Next, you will be asked if you want to add any additional global zones. Press `n` to skip adding and press **Enter** to proceed.

```
Default global zones: global-templates director-global
Do you want to specify additional global zones? [y/N]: n
```

In the next step, leave the API bind host and port as default and press **Enter** to proceed.

```
Please specify the API bind host/port (optional):
Bind Host []:
Bind Port []:
```

Next, press `Y` to disable the configuration inside the `/etc/icinga2/conf.d/` directory since we will use the Icinga2 Zones configuration later.

```
Do you want to disable the inclusion of the conf.d directory [Y/n]: Y
Disabling the inclusion of the conf.d directory...
Checking if the api-users.conf file exists...

Done.

Now restart your Icinga 2 daemon to finish the installation!
```

Restart the service to apply the changes.

```
$ sudo systemctl restart icinga2
```

And last but not least, run the following command to create a ticket for the client server. Use the client's domain name as the argument.

```
$ sudo icinga2 pki ticket --cn 'client.example.com'
c81f2a3b86534f34160ed8b776906e5452d8d09c
```

Note down the ticket for use later.

Step 13 - Initialize Icinga2 Agent on Client Server

Log in to the client server and install Icinga2 and the monitoring plugins. Run the following commands to do that.

```
$ wget -O - https://packages.icinga.com/icinga.key | sudo gpg --dearmor -o /usr/share/keyrings/icinga-archive-keyring.gpg
$ echo "deb [signed-by=/usr/share/keyrings/icinga-archive-keyring.gpg] https://packages.icinga.com/debian icinga-`lsb_release -cs` main" | sudo tee /etc/apt/sources.list.d/$(lsb_release -cs)-icinga.list
$ echo "deb-src [signed-by=/usr/share/keyrings/icinga-archive-keyring.gpg] http://packages.icinga.com/debian icinga-`lsb_release -cs` main" | sudo tee -a /etc/apt/sources.list.d/$(lsb_release -cs)-icinga.list
$ sudo apt update
$ sudo apt install icinga2 monitoring-plugins -y
```

Verify if the Icinga service is enabled and running.

```
$ sudo systemctl status icinga2
? icinga2.service - Icinga host/service/network monitoring system
     Loaded: loaded (/lib/systemd/system/icinga2.service; enabled; preset: enabled)
    Drop-In: /etc/systemd/system/icinga2.service.d
             ??limits.conf
     Active: active (running) since Mon 2024-01-08 12:52:53 UTC; 35s ago
   Main PID: 19530 (icinga2)
     Status: "Startup finished."
      Tasks: 12
     Memory: 13.4M
        CPU: 216ms
     CGroup: /system.slice/icinga2.service
             ??19530 /usr/lib/x86_64-linux-gnu/icinga2/sbin/icinga2 --no-stack-rlimit daemon --close-stdio -e /var/log/icinga2/error.log
             ??19573 /usr/lib/x86_64-linux-gnu/icinga2/sbin/icinga2 --no-stack-rlimit daemon --close-stdio -e /var/log/icinga2/error.log
             ??19578 /usr/lib/x86_64-linux-gnu/icinga2/sbin/icinga2 --no-stack-rlimit daemon --close-stdio -e /var/log/icinga2/error.log
```

Start the Icinga Node Wizard to initialize the agent on the client server.

```
$ sudo icinga2 node wizard
```

You will be prompted if it is an agent setup. Enter `Y` to set up the agent.

```
Welcome to the Icinga 2 Setup Wizard!

We will guide you through all required configuration details.

Please specify if this is an agent/satellite setup ('n' installs a master setup) [Y/n]: Y
```

Next, you will be asked to specify the common name. Leave the default value and press **Enter** to proceed.

```
Starting the Agent/Satellite setup routine...

Please specify the common name (CN) [client.example.com]:
```

Next, specify the parent endpoint as `icinga.example.com` and enter `Y` to establish a connection to the parent node from the client.

```
Please specify the parent endpoint(s) (master or satellite) where this node should connect to:
Master/Satellite Common Name (CN from your master/satellite node): icinga.example.com

Do you want to establish a connection to the parent node from this node? [Y/n]: Y
```

Next, enter the IP address of the master server and leave the port value unchanged as default.

```
Please specify the master/satellite connection information:
Master/Satellite endpoint host (IP address or FQDN): 199.247.31.184
Master/Satellite endpoint port [5665]:
```

Enter `N` to reject adding more master endpoints.

```
Add more master/satellite endpoints? [y/N]: N
```

Next, you will be shown the certificate information for the master server. Press `Y` to confirm the information and proceed.

```
Parent certificate information:

 Version:             3
 Subject:             CN = icinga.example.com
 Issuer:              CN = Icinga CA
 Valid From:          Jan  8 07:36:55 2024 GMT
 Valid Until:         Feb  8 07:36:55 2025 GMT
 Serial:              3a:e5:5e:e6:d5:5e:cc:1d:89:be:18:0b:10:cb:7d:54:8f:82:b1:5e

 Signature Algorithm: sha256WithRSAEncryption
 Subject Alt Names:   icinga.example.com
 Fingerprint:         DB 62 0D 2D AF 73 02 F2 86 92 5E A8 50 CD 0F 4F F2 D6 9E 86 AE F6 F9 E4 D7 F2 F2 60 78 1B 92 E5

Is this information correct? [y/N]: Y
```

Next, enter the request ticket generated in the previous step.

```
Please specify the request ticket generated on your Icinga 2 master (optional).
 (Hint: # icinga2 pki ticket --cn 'client.example.com'): c81f2a3b86534f34160ed8b776906e5452d8d09c
```

Leave the API bind host and port as default and press **Enter** to continue.

```
Please specify the API bind host/port (optional):
Bind Host []:
Bind Port []:
```

Next, enter `Y` twice to accept configuration and commands from the master node.

```
Accept config from parent node? [y/N]: Y
Accept commands from parent node? [y/N]: Y
```

Press **Enter** to accept the default local zone name which is the client domain name. Enter the master domain name as the parent zone name to proceed.

```
Reconfiguring Icinga...
Disabling feature notification. Make sure to restart Icinga 2 for these changes to take effect.
Enabling feature api. Make sure to restart Icinga 2 for these changes to take effect.

Local zone name [client.example.com]:
Parent zone name [master]: icinga.example.com
```

Press `N` to skip adding additional global zones.

```
Default global zones: global-templates director-global
Do you want to specify additional global zones? [y/N]: N
```

Press `Y` to skip disable the configurations from the `/etc/icinga2/conf.d/` directory.

```
Do you want to disable the inclusion of the conf.d directory [Y/n]: Y
Disabling the inclusion of the conf.d directory...

Done.

Now restart your Icinga 2 daemon to finish the installation!
```

Restart the Icinga service to apply the configuration changes.

```
$ sudo systemctl restart icinga2
```

Step 14 - Create Zones Configuration on the Master Server

Log back into the server and create a new directory as the default zone.

```
$ sudo mkdir -p /etc/icinga2/zones.d/icinga.example.com/
```

Next, create a configuration file in the newly created directory and open it for editing.

```
$ sudo nano /etc/icinga2/zones.d/icinga.example.com/client.example.com.conf
```

Paste the following code in it. The IP address in the code should match the public IP address of the client.

```
// Endpoints
object Endpoint "client.example.com" {
}
// Zones
object Zone "client.example.com" {
    endpoints = [ "client.example.com" ]
    parent = "icinga.example.com"
}
// Host Objects
object Host "client.example.com" {
    check_command = "hostalive"
    address = "95.179.138.148"
    vars.client_endpoint = name
}
```

Save the file by pressing **Ctrl + X** and entering **Y** when prompted once finished.

Create and open the services file for editing.

```
$ sudo nano /etc/icinga2/zones.d/icinga.example.com/services.conf
```

Paste the following code in it.

```
// Ping
 apply Service "Ping" {
 check_command = "ping4"
 assign where host.address // check executed on master
 }
 // System Load
 apply Service "System Load" {
 check_command = "load"
 command_endpoint = host.vars.client_endpoint // Check executed on client01
 assign where host.vars.client_endpoint
 }
 // SSH Service
 apply Service "SSH Service" {
 check_command = "ssh"
 command_endpoint = host.vars.client_endpoint
 assign where host.vars.client_endpoint
 }
 // Icinga 2 Service
 apply Service "Icinga2 Service" {
 check_command = "icinga"
 command_endpoint = host.vars.client_endpoint
 assign where host.vars.client_endpoint
 }
```

Run the following command to verify the configuration.

```
$ sudo icinga2 daemon -C
```

You will get a similar output.

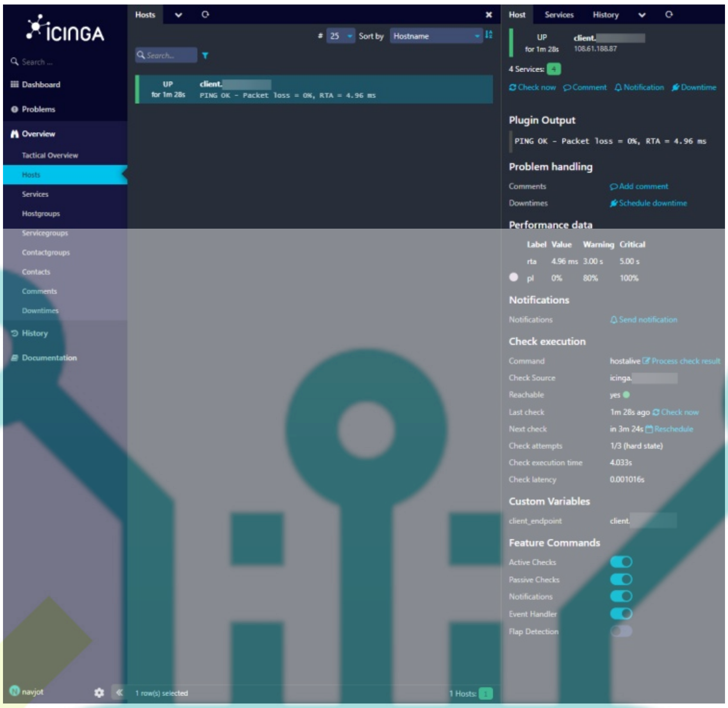
```
[2024-01-08 13:01:26 +0000] information/cli: Icinga application loader (version: r2.14.1-1)
[2024-01-08 13:01:26 +0000] information/cli: Loading configuration file(s).
[2024-01-08 13:01:26 +0000] information/ConfigItem: Committing config item(s).
[2024-01-08 13:01:26 +0000] information/ApiListener: My API identity: icinga.example.com
[2024-01-08 13:01:26 +0000] information/ConfigItem: Instantiated 1 IcingaApplication.
[2024-01-08 13:01:26 +0000] information/ConfigItem: Instantiated 1 Host.
[2024-01-08 13:01:26 +0000] information/ConfigItem: Instantiated 1 FileLogger.
[2024-01-08 13:01:26 +0000] information/ConfigItem: Instantiated 1 IdoMysqlConnection.
[2024-01-08 13:01:26 +0000] information/ConfigItem: Instantiated 4 Zones.
[2024-01-08 13:01:26 +0000] information/ConfigItem: Instantiated 1 CheckerComponent.
[2024-01-08 13:01:26 +0000] information/ConfigItem: Instantiated 2 Endpoints.
[2024-01-08 13:01:26 +0000] information/ConfigItem: Instantiated 2 ApiUsers.
[2024-01-08 13:01:26 +0000] information/ConfigItem: Instantiated 1 ApiListener.
[2024-01-08 13:01:26 +0000] information/ConfigItem: Instantiated 1 NotificationComponent.
[2024-01-08 13:01:26 +0000] information/ConfigItem: Instantiated 246 CheckCommands.
[2024-01-08 13:01:26 +0000] information/ConfigItem: Instantiated 4 Services.
[2024-01-08 13:01:26 +0000] information/ScriptGlobal: Dumping variables to file '/var/cache/icinga2/icinga2.vars'
[2024-01-08 13:01:27 +0000] information/cli: Finished validating the configuration file(s).
```

Restart the Icinga service to apply the configuration changes.

```
$ sudo systemctl restart icinga2
```

Step 15 - Verify on the Icinga Dashboard

Open the Icinga2 Web Dashboard to verify the client machine information. Select **Overview >> Hosts** from the left menu, and you will see the following screen.



# 25 Sort by Hostname

```
UP          client.[redacted]
for 1m 28s  PING OK - Packet loss = 0%, RTA = 4.96 ms
```

UP for 1m 28s client.[redacted] 108.61.188.87

4 Services: 4

Plugin Output

```
PING OK - Packet loss = 0%, RTA = 4.96 ms
```

Problem handling

Comments: Add comment

Downtimes: Schedule downtime

Performance data

Label	Value	Warning	Critical
rta	4.96 ms	3.00 s	5.00 s
pl	0%	80%	100%

Notifications

Notifications: Send notification

Check execution

Command	hostalive
Check Source	icinga.[redacted]
Reachable	yes
Last check	1m 28s ago
Next check	in 3m 24s
Check attempts	1/3 (hard state)
Check execution time	4.033s
Check latency	0.001016s

Custom Variables

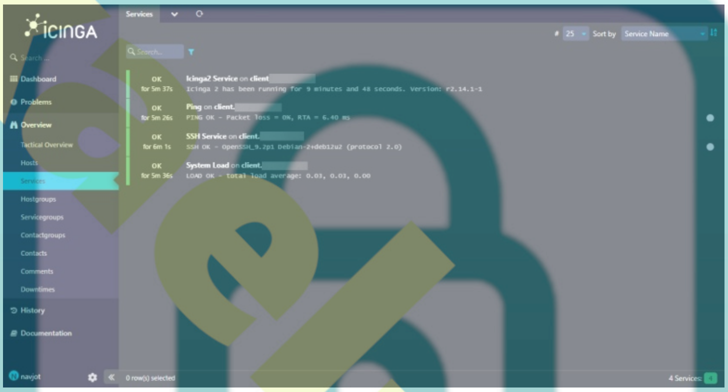
client_endpoint: client.[redacted]

Feature Commands

Active Checks: on
Passive Checks: on
Notifications: on
Event Handler: on
Flap Detection: off

1 row(s) selected 1 Hosts: 1

It might take some time for the client status to show as **UP**. Click the Client to see more details about it. Select **Overview >> Services** and you will see the following statuses about the client.



# 25 Sort by Service Name

```
OK          Icinga2 Service on client[redacted]
for 5m 37s  Icinga 2 has been running for 9 minutes and 48 seconds. Version: r2.14.1-1
OK          Ping on client.[redacted]
for 5m 26s  PING OK - Packet loss = 0%, RTA = 6.40 ms
OK          SSH Service on client.[redacted]
for 6m 1s   SSH OK - OpenSSH_9.2p1 Debian-2+deb12u2 (protocol 2.0)
OK          System Load on client.[redacted]
for 5m 36s  LOAD OK - total load average: 0.03, 0.03, 0.00
```

0 row(s) selected 4 Services: 4

This confirms that the client is sending stats correctly to the Icinga master server.

Conclusion

This concludes our tutorial on installing Icinga Monitoring Software on a Debian 12 server and configuring it to monitor a client machine running the same Operating system. If you have any questions, post them in the comments below.