

Configuring SSL/TLS With Nagios Fusion 2024

Purpose

This document describes how to configure SSL/TLS with Nagios Fusion.

Terminology

For your information:

- SSL = Secure Sockets Layer
- TLS = Transport Layer Security

TLS replaces SSL, however, the tools used to implement both generally use SSL in their name/directives. For simplicity reasons, the rest of this document will use the term SSL.

To implement SSL, you need to generate a certificate. When you generate a certificate, you create a request that needs to be signed by a Certificate Authority (CA). This CA can be:

- A trusted company like VeriSign
- An internal CA that is part of your IT infrastructure, like Microsoft Windows CA
- The Nagios Fusion server itself (self-signed)

The CA will then provide you with a signed certificate. This documentation can be used to generate a request that can be submitted to any of these CA types.

Editing Files

In many steps of this documentation, you will be required to edit files. This documentation will use the vi text editor. When using the vi editor:

- To make changes press `i` on the keyboard first to enter insert mode
- Press **Esc** to exit insert mode
- When you have finished, save the changes in vi by typing `:wq` and press **Enter**

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Installing Necessary Components

Establish a terminal session to your Nagios Fusion server and as root and execute the following command:

RHEL | CentOS | Oracle Linux

```
yum install -y mod_ssl openssl
```

Debian | Ubuntu

```
apt-get install -y openssl
```

Certificate Directory

The steps in this documentation will be performed from within the `/usr/local/nagiosfusion/var/certs/` directory. Execute the following commands to create the directory (if it doesn't exist) and then change into the directory:

```
mkdir -p /usr/local/nagiosfusion/var/certs  
cd /usr/local/nagiosfusion/var/certs/
```

You will continue to use this terminal session throughout this documentation.

Generate Private Key File

The first step is to generate the private key file, execute the following command:

```
openssl genrsa -out nagiosfusion.key 2048
```

That would have generated some random text.

Generate Certificate Request File

Next you will generate the certificate request file by executing the following command:

```
openssl req -new -key nagiosfusion.key -out nagiosfusion.csr
```

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You will need to supply some values, some can be left blank, however, the most important value is the **Common Name**. In the example below you can see that `nf-c7x-x64.domain.local` has been used which means that when you access the Nagios Fusion server in your web browser, this is the address you will need to use. This is particularly important, if these don't match then you will get warnings in your web browser. More detailed information about this can be found in the following Knowledge Base (KB) article:

[SSL/TLS - Understanding Certificate Warnings](#)

The following is an example:

```
Country Name (2 letter code) [XX]:AU
State or Province Name (full name) []:NSW
Locality Name (city) [Default City]:Sydney
Organization Name (company) [Default Company Ltd]:My Company Pty Ltd
Organizational Unit Name (section) []:
Common Name (your name or your server's hostname) []:nf-c7x-x64.domain.local
Email Address []:
Please enter the following 'extra' attributes to be sent with your certificate request
A challenge password []:
An optional company name []:
```

As you can see above, an Organizational Unit Name, email address, password or optional company name was not supplied. Specifically, providing a password is not necessary.

Sign Certificate Request

At this point you have created a certificate request that needs to be signed by a CA.

Using A Trusted CA Company

If you are going to use a trusted company like VeriSign to provide you with a certificate you will need to send them a copy of the certificate request. This can be viewed by executing the following command:

```
cat nagiosfusion.csr
```

You'll get a lot of random text; this is what you will need to provide to your trusted CA. You must provide the CA with everything including the `-----BEGIN CERTIFICATE REQUEST-----` and `-----END CERTIFICATE REQUEST-----` lines.

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Once they send you the signed certificate you will need to copy the certificate into a new file called `nagiosfusion.crt`. The certificate you receive will also be a lot of random text, so you can just paste that text into the new file which you can open with the vi editor:

```
vi nagiosfusion.crt
```

You must paste everything including the `-----BEGIN CERTIFICATE -----` and `-----END CERTIFICATE -----` lines when pasting them into the file.

Save the file and close vi.

You can now proceed to the [Set Permissions](#) section of this document.

Using Microsoft Windows CA

If you are going to use a Microsoft Windows CA to sign your certificate request, please follow the steps in this KB article:

[SSL/TLS - Signing Certificates With A Microsoft Certificate Authority](#)

After following the KB article, you will have the `nagiosfusion.crt` file and you can proceed to the [Set Permissions](#) section of this document.

Self-Signing The Certificate

You can also self-sign the certificate by executing the following command:

```
openssl x509 -req -days 365 -in nagiosfusion.csr -signkey nagiosfusion.key -out nagiosfusion.crt
```

This should produce output saying the Signature was OK and it was Getting Private Key.

Note: When you self-sign a certificate you will get warnings in your web browser. More detailed information about this can be found in the following KB article:

[SSL/TLS - Understanding Certificate Warnings](#)

Set Permissions

You need to set the correct permissions on the certificate file. Execute the following commands:

```
chmod go-rwx nagiosfusion.*
```

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Update Apache Configuration

Now you must tell the Apache web server about the certificate. The configuration file for this differs depending on your operating system (OS), open the SSL file in vi by executing the following command:

RHEL | CentOS | Oracle Linux

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

Debian | Ubuntu

```
vi /etc/apache2/sites-available/default-ssl.conf
```

Find these lines and update them as follows:

```
SSLCertificateFile /usr/local/nagiosfusion/var/certs/nagiosfusion.crt
SSLCertificateKeyFile /usr/local/nagiosfusion/var/certs/nagiosfusion.key
```

Tip: typing `/eFile` and pressing **Enter** in vi should take you directly to this section in the file.

In that same file, navigate to the end (press **SHIFT + G**) and before the line `</VirtualHost>` add the following lines. Note that the `RewriteRule` line is a single long command, not two separate commands, so be sure to copy and paste the entire command into your terminal:

```
<IfModule mod_rewrite.c>
  RewriteEngine On
  RewriteCond %{REQUEST_FILENAME} !-f
  RewriteCond %{REQUEST_FILENAME} !-d
  RewriteRule nagiosfusion/api/v1/(.*)$ /usr/local/nagiosfusion\
/html/api/v1/index.php?request=$1 [QSA,NC,L]
</IfModule>
```

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Enable SSL

You must update Apache web server config file to force SSL to be used. The configuration file for this differs depending on your OS, open the SSL file in vi by executing the following command:

RHEL | CentOS | Oracle Linux

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

Debian | Ubuntu

```
vi /etc/apache2/conf-enabled/nagiosfusion.conf
```

Add the following lines to the end of the file (press **SHIFT + G**). Note that the RewriteRule line is a single long command, not two separate commands, so be sure to copy and paste the entire command into your terminal:

```
<IfModule mod_rewrite.c>
  RewriteEngine On
  RewriteCond %{REQUEST_FILENAME} !-f
  RewriteCond %{REQUEST_FILENAME} !-d
  RewriteRule nagiosfusion/api/v1/(.*)$ /usr/local/nagiosfusion\
/html/api/v1/index.php?request=$1 [QSA,NC,L]
  RewriteCond %{HTTPS} off
  RewriteRule (.*) https://%{HTTP_HOST}%{REQUEST_URI}
</IfModule>
```

Save the changes, you have finished editing this file.

Restart Apache

You need to restart the Apache for the new certificate key to be used.

RHEL 8+ | CentOS 9+ | Oracle Linux 8+

```
systemctl restart httpd.service
```

Debian 11+ | Ubuntu 20+

```
systemctl restart apache2.service
```

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Firewall Rules

The following firewall rules may need to be added. If you cannot access the Nagios Fusion in the next step ([Test Certificate](#)) then you will likely need to run these commands:

RHEL 8+ | CentOS 9+ | Oracle Linux 8+

```
firewall-cmd --zone=public --add-port=443/tcp
firewall-cmd --zone=public --add-port=443/tcp --permanent
```

Debian 11+

The local firewall is not enabled on Debian by default and no steps are required here. **IF** it is enabled then the commands are:

```
iptables -I INPUT -p tcp --destination-port 443 -j ACCEPT
```

Ubuntu 20+

The local firewall is not enabled on Ubuntu by default and no steps are required here. **IF** it is enabled then the commands are:

```
sudo ufw allow https
sudo ufw reload
```

Test Certificate

Now test your connection to the server by directing your web browser to:

```
https://your_server_address/
```

Note: There is no `nagiosfusion/` extension in the URL, we are just testing a connection to Apache to see if the certificate works.

You may get a self-signed certificate warning, but that is OK, you can just add a security exception. If it works, you'll see the Nagios Fusion welcome page.

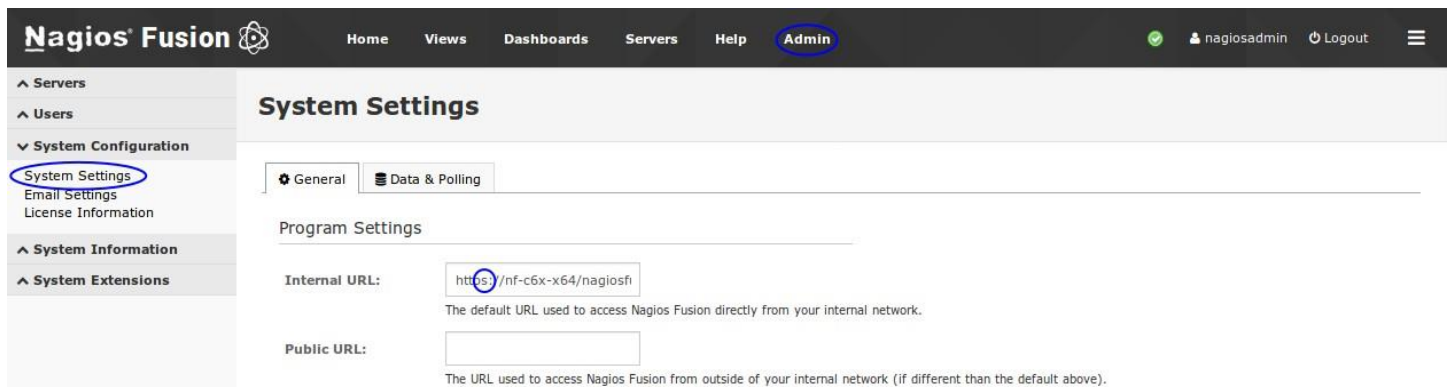
If it returns an error, check your firewall and backtrack through this document, making sure you've performed all the steps listed.

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Update Nagios Fusion Configuration

The Nagios Fusion GUI settings also need updating. Open the Nagios Fusion interface to `https://your_server_address/nagiosfusion/` and navigate to **Admin > System Configuration > System Settings**.

Change the **Internal URL** to `https` instead of the default `http`. If required change the **Public URL** to the correct address. Click the **Save Settings** button.



The screenshot shows the Nagios Fusion web interface. The top navigation bar includes 'Home', 'Views', 'Dashboards', 'Servers', 'Help', and 'Admin' (circled in blue). The left sidebar shows 'System Configuration' expanded, with 'System Settings' circled in blue. The main content area is titled 'System Settings' and has two tabs: 'General' (selected) and 'Data & Polling'. Under 'Program Settings', the 'Internal URL' field contains 'https://nf-c6x-x64/nagiosfi' (circled in blue) and is described as 'The default URL used to access Nagios Fusion directly from your internal network.' The 'Public URL' field is empty and described as 'The URL used to access Nagios Fusion from outside of your internal network (if different than the default above).'

Note: It's very important that the IP Address / DNS name is the same here as it was typed in the certificate key "common name".

You are now set to use `https` with your Nagios Fusion web interface.

Notes On Redirecting

With this configuration, if a user types `http://nagiosfusion` in their web browser, it will redirect them to `https://nagiosfusion` which can cause certificate warnings in certain scenarios. If you wanted to redirect them to `https://nagiosfusion.yourdomain.com`, then you simply need to change the RewriteRule in the `/etc/httpd/conf/httpd.conf` file:

```
RewriteRule (.*) https://nagiosfusion.yourdomain.com%{REQUEST_URI}
```

Then restart the `httpd` service.

More detailed information about this can be found in the following KB article:

[SSL/TLS - Understanding Certificate Warnings](#)

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Finishing Up

This completes the documentation on configuring SSL/TLS with Nagios Fusion. If you have additional questions or other support-related questions, please visit us at our Nagios Support Forum, Nagios Knowledge Base, or Nagios Library:

[Visit Nagios Support Forum](#)

[Visit Nagios Knowledge Base](#)

[Visit Nagios Library](#)