Monitoring Nginx Server

eG Innovations Product Documentation

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Total Performance Visibility

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Chapter 1: Introduction

Nginx (pronounced “engine-x”) is a free, open-source, high-performance HTTP server (aka web server) and reverse proxy, as well as an IMAP/POP3 proxy server. Therefore, NGINX provides a unique combination of web server, caching proxy and load balancing solution to any website that just wants to be consistently efficient. Because of its design and architecture NGINX has already enabled more performance, scalability, reliability and security to many organizations across the world. Today NGINX is one of the most popular open source web servers on the Internet.

NGINX optimizes the usage of the operating system and the hardware resources with its modular, event-driven, asynchronous, non-blocking architecture. Using event notifications and asynchronous handling of a variety of consequent actions associated with accepting, processing and managing network connections and content retrieval, NGINX provides hints to the operating system and gets timely feedback in regards to when expect an inbound or outbound traffic, when check disk operation, when refresh content and so on. Therefore administrators prefer to monitor the Nginx Server and obtain critical metrics from the server such as the Active connections, connections accepted, Total requests etc. To achieve this, eG Enterprise offers a specialized monitoring model to continuously monitor the performance of the Nginx server.

Chapter 2: How to Monitor Nginx Server Using eG Enterprise?

eG Enterprise monitors the Nginx server in an agent-based or agentless manner. The eG agent periodically monitors the server and runs a test to collect critical statistics pertaining to its performance. To start monitoring the server, first manage the Nginx server component using eG admin interface. The steps for managing the Nginx server have been explained in the following section.

2.1 Managing the Nginx Server

The eG Enterprise cannot automatically discover the Nginx Server. This implies that you will have to manually add the component for monitoring. Remember that the eG Enterprise automatically manages the components that are added manually. To manage a Nginx Server component, do the following:

1. Log into the eG administrative interface.
2. Follow the Components -> Add/Modify menu sequence in the **Infrastructure** tile of the **Admin** menu.
3. In the **COMPONENT** page that appears next, select *Nginx Server* as the **Component type**. Then, click the **Add New Component** button. This will invoke Figure 2.1.

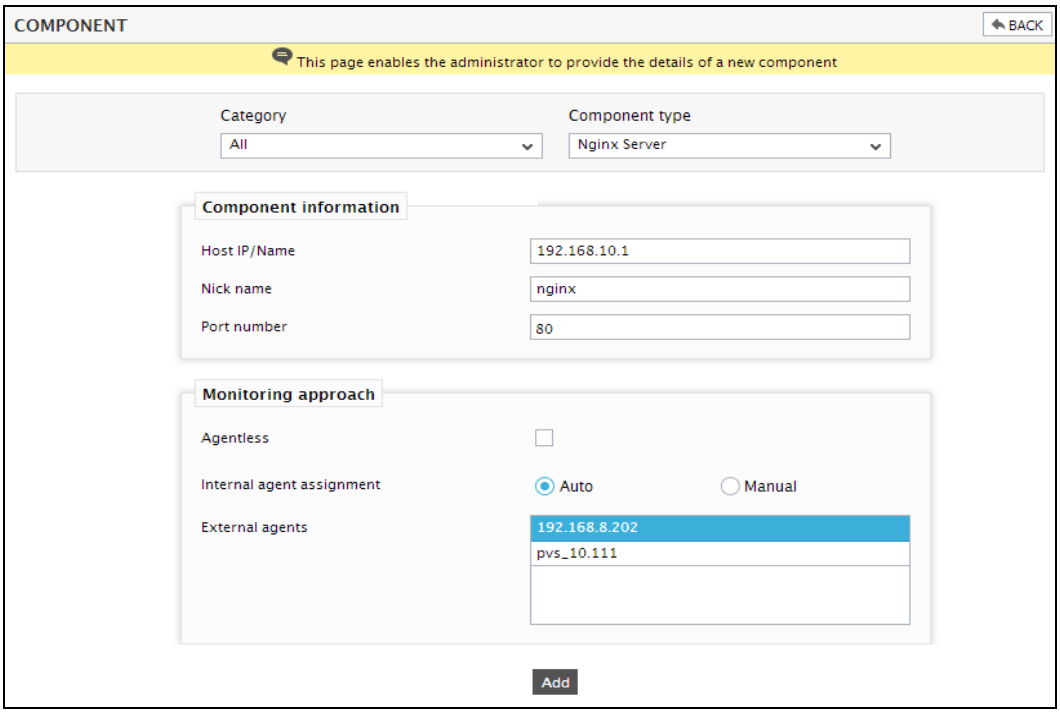

Figure 2.1: Adding the Nginx Server component

4. Specify the **Host IP** and the **Nick name** for the Nginx server in Figure 2.1. In the **Port number** text box, specify the port at which the Nginx server is listening.
5. Then, click the **Add** button to register the changes. The tests pertaining to the Nginx Server component is automatically configured.
6. Finally, signout of the eG administrative interface.

Chapter 3: Monitoring the Nginx Server

To cater to the requirements of the administrators, eG Enterprise provides a specialized *Nginx Server* monitoring model. Figure 3.1 depicts the model used by the eG Enterprise suite to monitor an Nginx Server.

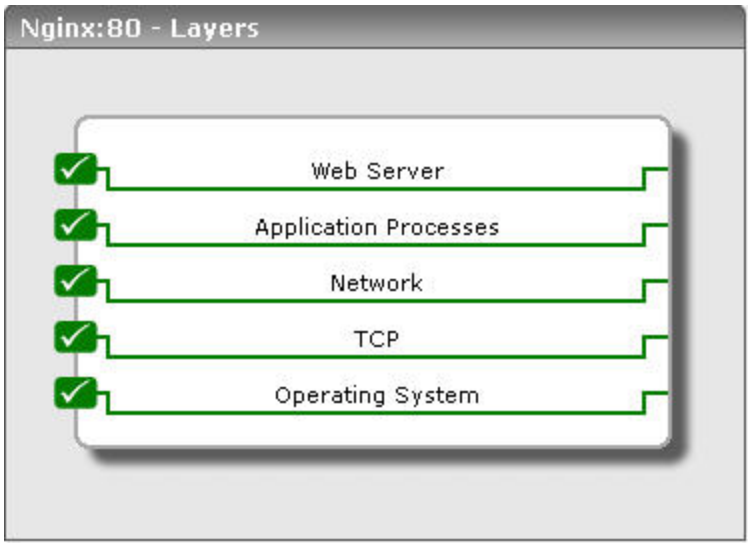

Figure 3.1: The layer model of the Nginx Server

The **Operating System**, **Network**, **TCP** and **Application Processes** layers of an Nginx Server model are similar to that of a **Windows Generic server** model. Since these tests have been dealt with in the *Monitoring Unix and Windows Servers* document, the upcoming section focuses on the **Web Server** layer.

3.1 The Web Server Layer

This layer tracks the health of the Nginx Server and the critical performance statistics of the Nginx Server. Since the HTTP test is discussed in detail in the Monitoring Web Servers document, let us now discuss the Nginx Status test in the following section.

Figure 3.2: The tests mapped to the Web Server layer

3.1.1 Nginx Status Test

This test reveals critical performance statistics pertaining to an Nginx server. This test, upon execution, accesses a specific URL on the Nginx server, which contains the required metrics.

Target of the test : An Nginx server

Agent deploying the test : An external agent

Outputs of the test : One set of results for the URL that is to be accessed.

Configurable parameters for the test

Parameter	Description
Test Period	How often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified host listens to.
URL	In this text box, the URL to be accessed by this test for extracting the performance statistics of the Nginx server, will be displayed by default. The URL is: *http://{Nginx web server host}:{Nginx web server port}/nginx_status*.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Active connections	Indicates the number of connections that are currently active on this server.	Number	A high value is desired for this measure.
Connections accepted	Indicates the number of connections that are currently accepted by this server.	Number	
Connections handled	Indicates the number of connections that are currently handled by this server.	Number	
Total requests	Indicates the number of requests that are currently handled by this server.	Number	
Reading request headers	Indicates the number of request headers that are currently read by this server.	Number	
Writing requests	Indicates the number of write responses provided to the client by this server after reading and processing the requests.	Number	
Waiting requests	Indicates the number of waiting connections i.e., keep alive connections (including reading and writing connections).	Number	
Requests per connection	Indicates the average number of requests that are handled for each connection.	Number	The value of this measure is a ratio of the measures - Total requests: Connections handled.

3.2 Enabling the Nginx status page

The **Nginx status** test fetches and reports the status of Nginx server from the Nginx status page. If the **Nginx status** test fails to report measures, first check whether the Nginx status page is enabled or not. If the status page is not enabled, then, you need to enable it manually. To enable the status page in the Windows system, follow the steps given below:

1. Go to the configuration folder and open *nginx.conf* file to edit.

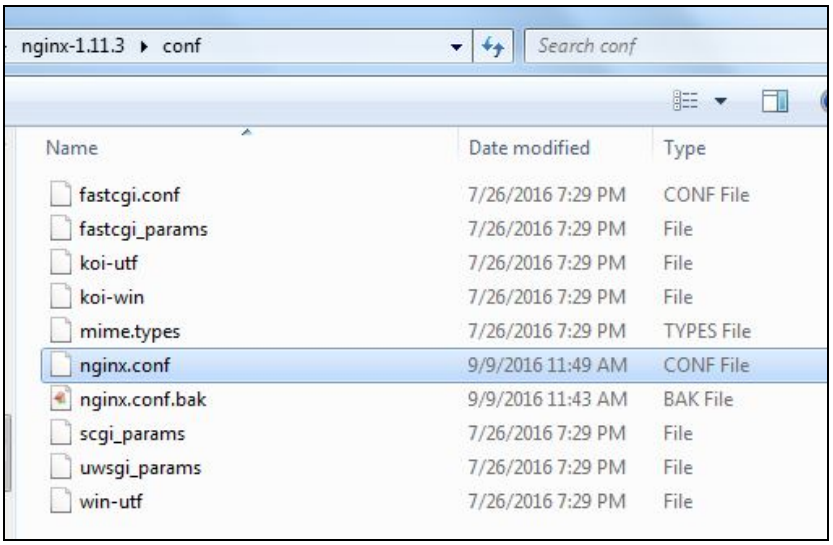

Figure 3.3: Opening nginx.conf file

2. Then, include the following code block inside the server block of the *nginx.conf* file.

```
location /nginx_status {
stub_status on;
access_log off;
allow all;
}
```

3. Once you added the code block, save the *nginx.conf* file.
4. Finally, restart the server.
5. To check whether the status page is enabled or not, go to a browser and type the URL as “example.com/nignx_status”
6. If you see the output message as shown in Figure 3.4, you can be assured that the nginx status page is enabled and the Nginx Status test will report measures.

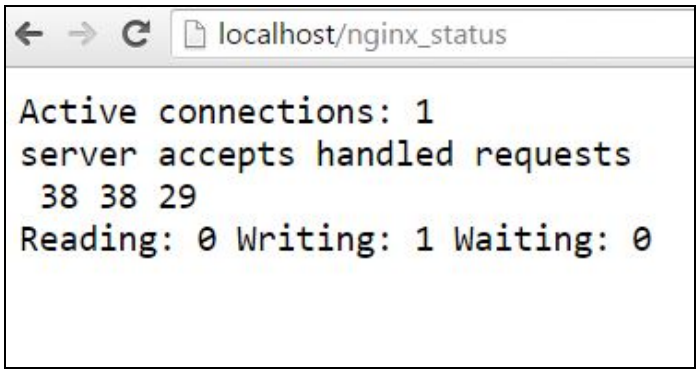

Figure 3.4: Sample output massage

About eG Innovations

eG Innovations provides intelligent performance management solutions that automate and dramatically accelerate the discovery, diagnosis, and resolution of IT performance issues in on-premises, cloud and hybrid environments. Where traditional monitoring tools often fail to provide insight into the performance drivers of business services and user experience, eG Innovations provides total performance visibility across every layer and every tier of the IT infrastructure that supports the business service chain. From desktops to applications, from servers to network and storage, from virtualization to cloud, eG Innovations helps companies proactively discover, instantly diagnose, and rapidly resolve even the most challenging performance and user experience issues.

eG Innovations is dedicated to helping businesses across the globe transform IT service delivery into a competitive advantage and a center for productivity, growth and profit. Many of the world's largest businesses use eG Enterprise to enhance IT service performance, increase operational efficiency, ensure IT effectiveness and deliver on the ROI promise of transformational IT investments across physical, virtual and cloud environments.

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