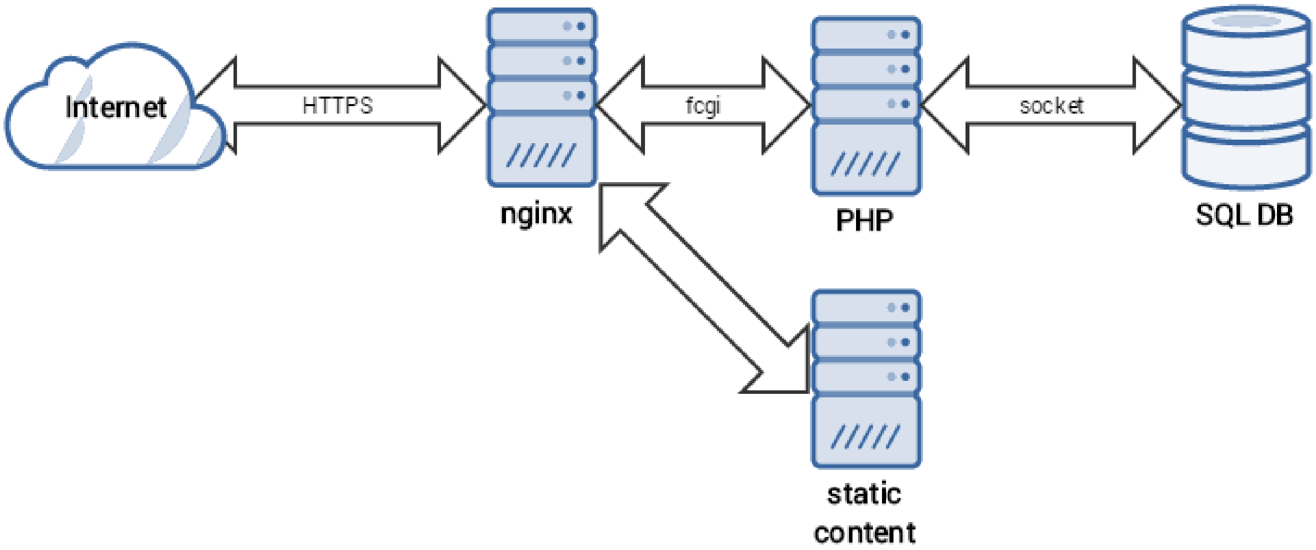
How to monitor your web server performance

Starting with VoipNow 4.0, you can access web server performance statistics. There are two sets of performance indicators:

- Nginx statistics: Nginx is the web server that handles HTTP requests and provides access to the Voipnow web interface
- PHP-fpm statistics: PHP is the server-side scripting language used by VoipNow's web interface for backend processing tasks (image generation, database queries, etc).

Simply put, this is how the web server and PHP work:



Step-by-step guide

Enabling access from your IP address

By default, the web server statistics are only accessible from the VoipNow server itself (the only IP allowed is 127.0.0.1).

To change this, follow these steps:

1. Edit the file `/usr/local/voipnow/admin/conf/voipnow-status.conf` which looks like this.

```
# This file contains directives for monitoring.
# You have to replace with your IP. Do not open this to the world!
location ^~ /status-fpm {
    if ($my_https = "off") {
        return 301 https://$host$request_uri;
    }
    access_log off;
    allow 127.0.0.1;
    #allow #REPLACE.YOUR.IP;
    deny all;
    fastcgi_param SCRIPT_FILENAME /status-fpm;
    fastcgi_param SCRIPT_NAME /status-fpm;
    include /usr/local/voipnow/admin/conf/fastcgi-web*.conf;
}
location ^~ /status-fpm-worker {
    if ($my_https = "off") {
        return 301 https://$host$request_uri;
    }
    access_log off;
    allow 127.0.0.1;
    #allow #REPLACE.YOUR.IP;
    deny all;
    fastcgi_param SCRIPT_FILENAME /status-fpm-worker;
    fastcgi_param SCRIPT_NAME /status-fpm-worker;
    include /usr/local/voipnow/admin/conf/fastcgi-web*.conf;
}
location ^~ /status-httpsa {
    if ($my_https = "off") {
        return 301 https://$host$request_uri;
    }
    vhost_traffic_status_display;
    vhost_traffic_status_display_format html;
    access_log off;
    allow 127.0.0.1;
    #allow #REPLACE.YOUR.IP;
    deny all;
}
```

2. Remove the # character at the beginning of the two `#allow` lines and replace the `#REPLACE.YOUR.IP` block with your own IP address. For example, if your IP address is 10.10.10.25, the file needs to look like this:

```
# This file contains directives for monitoring.
# You have to replace with your IP. Do not open this to the world!
location ^~ /status-fpm {
    if ($my_https = "off") {
        return 301 https://$host$request_uri;
    }
    access_log off;
    allow 127.0.0.1;
    allow 10.10.10.25;
    deny all;
    fastcgi_param SCRIPT_FILENAME /status-fpm;
    fastcgi_param SCRIPT_NAME /status-fpm;
    include /usr/local/voipnow/admin/conf/fastcgi-web*.conf;
}
location ^~ /status-fpm-worker {
    if ($my_https = "off") {
        return 301 https://$host$request_uri;
    }
    access_log off;
    allow 127.0.0.1;
    allow 10.10.10.25;
    deny all;
    fastcgi_param SCRIPT_FILENAME /status-fpm-worker;
    fastcgi_param SCRIPT_NAME /status-fpm-worker;
    include /usr/local/voipnow/admin/conf/fastcgi-web*.conf;
}
location ^~ /status-httpsa {
    if ($my_https = "off") {
        return 301 https://$host$request_uri;
    }
    vhost_traffic_status_display;
    vhost_traffic_status_display_format html;
    access_log off;
    allow 127.0.0.1;
    allow 10.10.10.25;
    deny all;
}
```

3. Save the file and restart the VoipNow web interface:

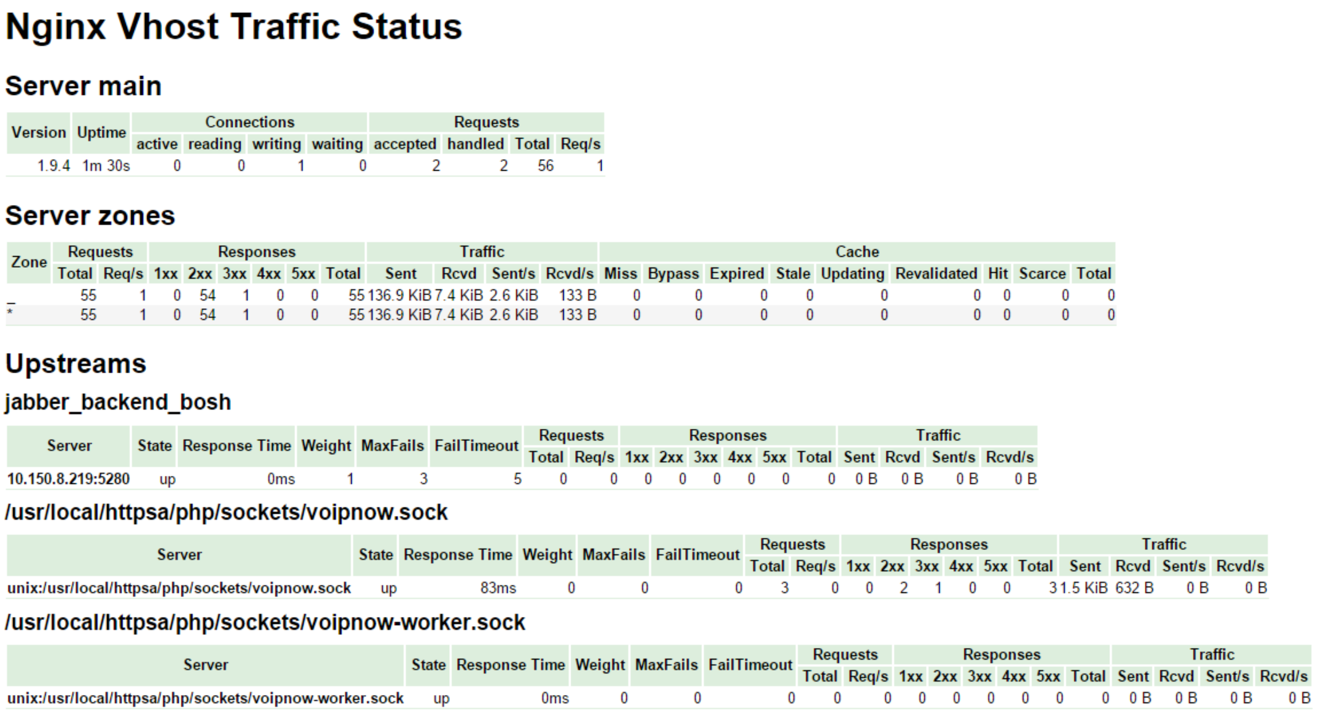
```
# /etc/init.d/voipnow restart
Stopping VoipNow Web Management Interface:                 [  OK  ]
Starting VoipNow Web Management Interface:                 [  OK  ]
```

Access web server statistics

The web server statistics can now be accessed at the following web address: `https://VOIPNOW_IP/status-httpsa` (replace `VOIPNOW_IP` with your VoipNow server IP address).

On this page you will find generic performance indicators for the Nginx web server:

- **Server main**: version, uptime, number and status of web server connections and requests
- **Server zones**: number of requests, response types grouped by HTTP response code, traffic and caching statistics
- **Upstreams**: the backend connections' status (PHP and PHP workers)



Nginx Vhost Traffic Status

Server main

Version	Uptime	Connections				Requests			
		active	reading	writing	waiting	accepted	handled	Total	Req/s
1.9.4	1m 30s	0	0	1	0	2	2	56	1

Server zones

Zone	Requests		Responses						Traffic				Cache								
	Total	Req/s	1xx	2xx	3xx	4xx	5xx	Total	Sent	Rcvd	Sent/s	Rcvd/s	Miss	Bypass	Expired	Stale	Updating	Revalidated	Hit	Scarce	Total
_	55	1	0	54	1	0	0	55	136.9 KiB	7.4 KiB	2.6 KiB	133 B	0	0	0	0	0	0	0	0	0
*	55	1	0	54	1	0	0	55	136.9 KiB	7.4 KiB	2.6 KiB	133 B	0	0	0	0	0	0	0	0	0

Upstreams

jabber_backend_bosh

Server	State	Response Time	Weight	MaxFails	FailTimeout	Requests		Responses						Traffic			
						Total	Req/s	1xx	2xx	3xx	4xx	5xx	Total	Sent	Rcvd	Sent/s	Rcvd/s
10.150.8.219:5280	up	0ms	1	3	5	0	0	0	0	0	0	0	0	0 B	0 B	0 B	0 B

/usr/local/httpsa/php/sockets/voipnow.sock

Server	State	Response Time	Weight	MaxFails	FailTimeout	Requests		Responses						Traffic			
						Total	Req/s	1xx	2xx	3xx	4xx	5xx	Total	Sent	Rcvd	Sent/s	Rcvd/s
unix:/usr/local/httpsa/php/sockets/voipnow.sock	up	83ms	0	0	0	3	0	0	2	1	0	0	3	1.5 KiB	632 B	0 B	0 B

/usr/local/httpsa/php/sockets/voipnow-worker.sock

Server	State	Response Time	Weight	MaxFails	FailTimeout	Requests		Responses						Traffic			
						Total	Req/s	1xx	2xx	3xx	4xx	5xx	Total	Sent	Rcvd	Sent/s	Rcvd/s
unix:/usr/local/httpsa/php/sockets/voipnow-worker.sock	up	0ms	0	0	0	0	0	0	0	0	0	0	0	0 B	0 B	0 B	0 B

Access PHP statistics

The PHP statistics page can be accessed at `https://VOIPNOW_IP/status-fpm` (replace `VOIPNOW_IP` with your VoipNow server IP address). The output displayed will be similar to this:

status-fpm

```
pool:                 voipnow
process manager:      dynamic
start time:           11/Dec/2015:10:07:17 +0000
start since:          54
accepted conn:        3
listen queue:         0
max listen queue:     0
listen queue len:     0
idle processes:       4
active processes:     1
total processes:      5
max active processes: 1
max children reached: 0
slow requests:        0
stats[1449828437]:["10":"1", "20":"0", "30":"0", "40":"1", "50":"0", "60":"0", "70":"0", "80":"0", "90":"0",
"100":"0", "over":"0"]
```

While most of the values are self-explanatory, you should know that the stats array indicates the percentile distribution compared to the `request_slowlog_timeout` parameter, which has a default value of 1 second. For example:

- 10 refers to how many requests were served between 0-10% of the `request_slowlog_timeout` parameter (between 0 and 3 seconds in the default configuration)
- 20 refers to how many requests were served between 10-20% of the `request_slowlog_timeout` parameter (between 3 and 6 seconds in the default configuration)
- ...
- 100 refers to how many requests were served between 90-100% of the `request_slowlog_timeout` parameter (between 27 and 30 seconds in the default configuration)
- `over` refers to how many requests were served over 100% of the the `request_slowlog_timeout` parameter (over 30 seconds in the default configuration)

Possible reasons for concern

Nginx

The following indicators should be monitored:

- number of responses with 4xx/5xx status codes - a high number of responses with these codes can indicate a bruteforce/vulnerability scanner pointed at your server
- the state of all upstreams should be up

PHP

The following should be monitored:

- the "start since" value should be a high number, indicating that the PHP processes did not crash recently
- the slow requests should be a low number, indicating that all PHP scripts are executing in a reasonable time
- the stats array should not have too many requests in the 80, 90, 100 and `over` keys (this indicates your web server is overloaded)

Related articles

- How to monitor your web server performance
- How to allow registration to a domain name instead of a server IP
- How to set up a master-slave replication in 12 easy steps
- How can I see the IP of the phone that placed a call
- How to add a Local Agent to a Queue