

avMonitoring

User's Manual

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Chapter 1 : Overview

avMonitoring is a availability monitoring system which concern only binary status 1 or 0, online or offline. The system can monitor services port number and record into log file, database and notify to the administrator via E-mail, Google calendar and short message system (SMS).

Report of the system has 2 type; The first is statistic summary of all status. The second is statistic summary of downtime. Each reports have flash animation graph and data table.

The system divide in 2 parts; the first is management console, web application using application server like Apache, PHP and MySQL. Management console is a user interface between the monitoring job, report and monitoring data. Administrator use the management console to configure the monitoring job, watch status, reports.

The second is monitoring script run by system schedule (cron) to check server services in monitoring job, record their status in to a log file, database and notified system administrator.

Chapter 2 : Installation

The system divide in 2 parts; management console and monitoring script, then the monitoring server must have LAMPP and PHP cli. We recommend to use Ubuntu 10.04 Long Term Support as a monitoring server.

Installation Overview

You must have a CD-ROM contain; application and manual in portable format. To install avMonitoring you should have a Ubuntu server which basic server installation (or include OpenSSH for remote configure), installation has 5 steps below

Step 1 install LAMPP and MySQL server

Install LAMP and PHPMyAdmin services for monitoring server.

```
$ sudo apt-get phpmyadmin mysql-server postfix php5-cli
```

The command above use meta package of phpmyadmin it 'll call the dependency of this package and install all necessary packages include PHPMyAdmin and MySQL server. Check Apache, MySQL and PHP status before install avMonitoring management console.

Step 2 extract and configure management console

avMonitoring management console is an archive file like *avmonitoring_<version>.tar.gz* . Extract into */var/www/* directory.

```
$ sudo tar xzf avmonitoring_<version>.tar.gz -C /var/www/
```

Edit the configuration file in */var/www/*

```
$ sudo nano /var/www/config.php
```

Check the configuration below :

```
[...]
```

```
$dbhost="localhost";  
$dbname="avmonitor_database";  
$dbusername="database_user";  
$dbpassword="database_password";
```

```
$url="http://monitor.redlinesoft.net";
```

```
[...]
```

```
$admin_name="Monitoring Administrator";  
$admin_email="admin@monitor.redlinesoft.net";
```

```
$crontab_interval=15;
```

```
[...]
```

replace **bold value** to your configuration, after that import pre monitoring data to your avMonitoring database.

```
$ mysql -u root -p avmonitor_database < /var/www/schema/schema.sql
```

Step 3 config Apache default site

After import pre monitoring data, now you can change DOCUMENT ROOT of Apache to the avMonitoring console application's location ; `/var/www/www/`. Edit your Apache default site like this

```
[...]
```

```
DocumentRoot /var/www/www
```

```
<Directory />  
    Options FollowSymLinks  
    AllowOverride None  
</Directory>
```

```
<Directory /var/www/www/>
    Options Indexes FollowSymLinks MultiViews
    AllowOverride All
    Order allow,deny
    allow from all
</Directory>
```

[...]

Config 'php.ini' at /etc/php5/apache2/php.ini, change the directive to control display error equal **Off**

[...]

```
display_errors = Off
```

[...]

After update default site and PHP config, you **MUST** restart Apache service as following

```
# services apache2 restart
```

Step 4 check management console setup

Open your favorite web browser (FireFox 3.6.x above is recommend) goto your monitoring server e.g. <http://monitor.redlinesoft.net>, browser 'll redirect to sign-in page look like below

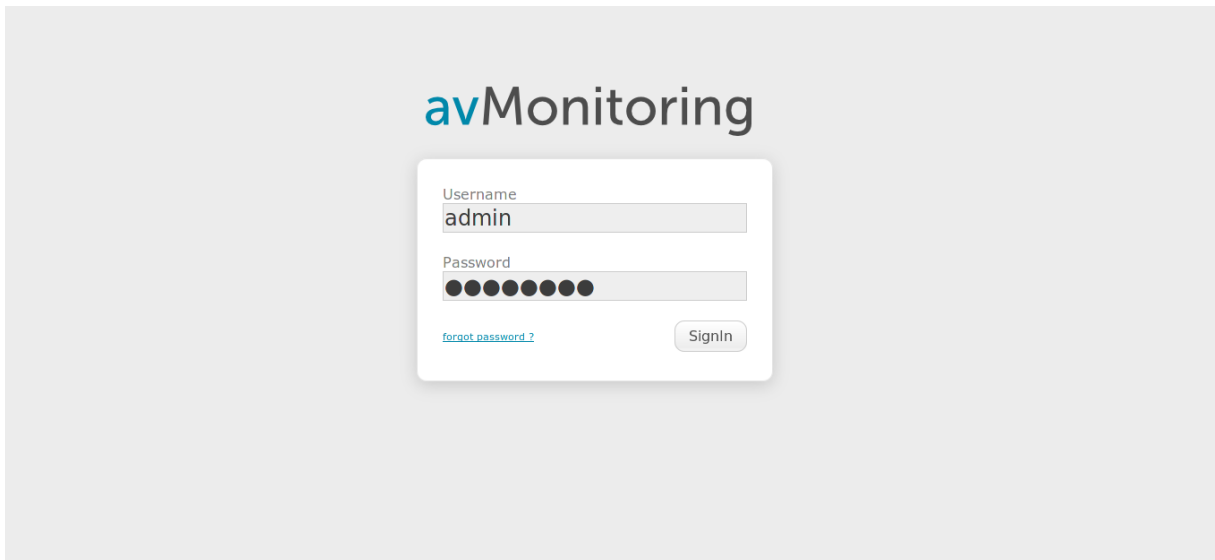


Figure 1 : Sign In

Default administrator login is **admin** and password is **adminadmin** .
DO NOT hurry sign in, you should config the cron job for monitoring script in the next step.

Step 5 setup root's cron job

Edit monitoring script in `/var/www/www/script/avmonitor.cli.php`
then edit this file :

```
$ sudo nano /var/www/www/script/avmonitor.cli.php
```

update the following **bold** lines

[...]

```
$pwd="/var/www/www"; // base path for cli script  
$incattm="n"; // notify include all attempt
```

[...]

Update the avMonitoring directory is `'/var/www/www/ '` (don't forget slash tail '/') and if you want to send notification in every interval of monitoring change 'n' to 'y', then setup **root's cron job**.

```
# crontab -e
```

add the following line to root's cron job

```
* /15 * * * * /usr/bin/php /var/www/www/script/avmonitor.cli.php
```

Check after 15 minutes, monitoring service's log of example.com 'll write in to */var/www/www/script/monitor.log* .

Chapter 3 : Monitor server

After installation the management console, you can use your favorite web browser to browse to avMonitoring server e.g. <http://monitor.redlinesoft.net> your browser will redirect to the sign-in page like figure 1 below

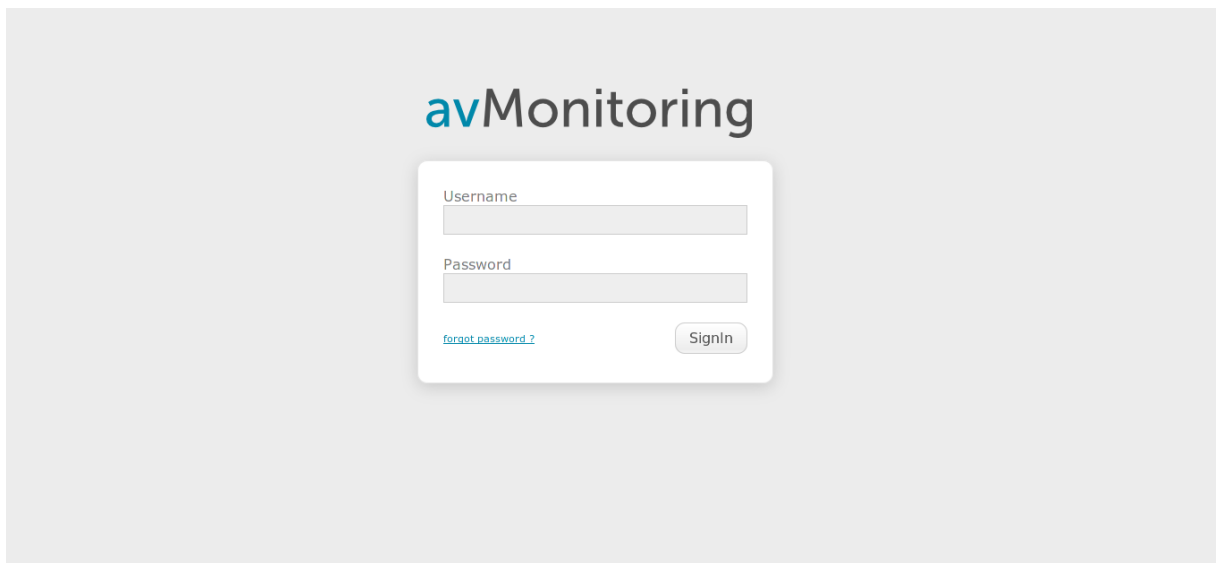


Figure 1 : Sign In

Sign in with default administrator's username and password is **admin** and **admiadmin** .

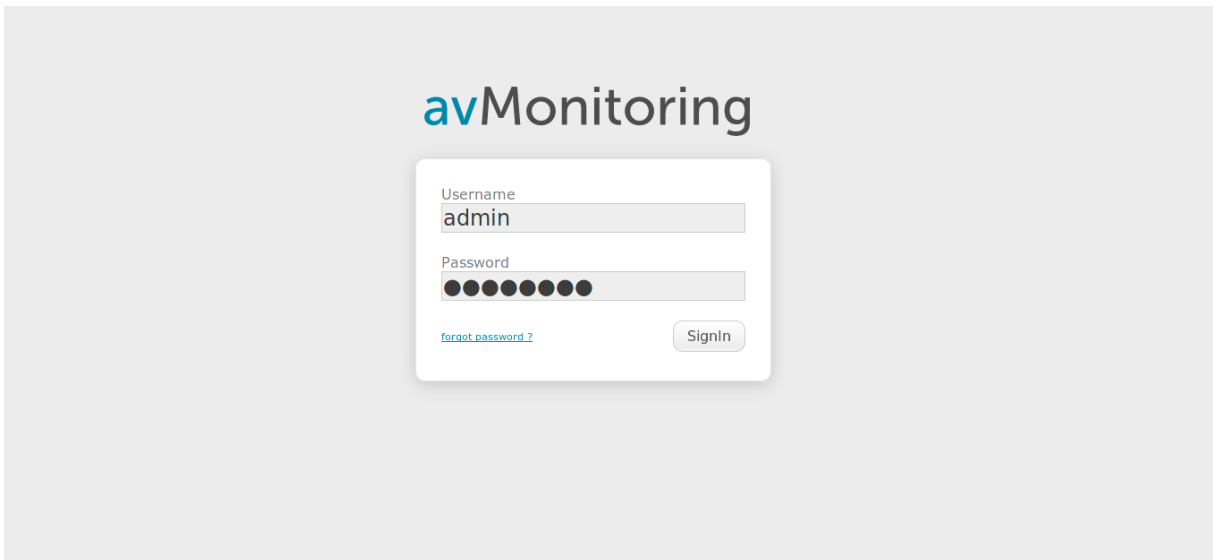


Figure 2 : Sign In with default username and password

Click 'Sign In' button if username and password correct, your browser will redirect to 'Dashboard' page in figure 3

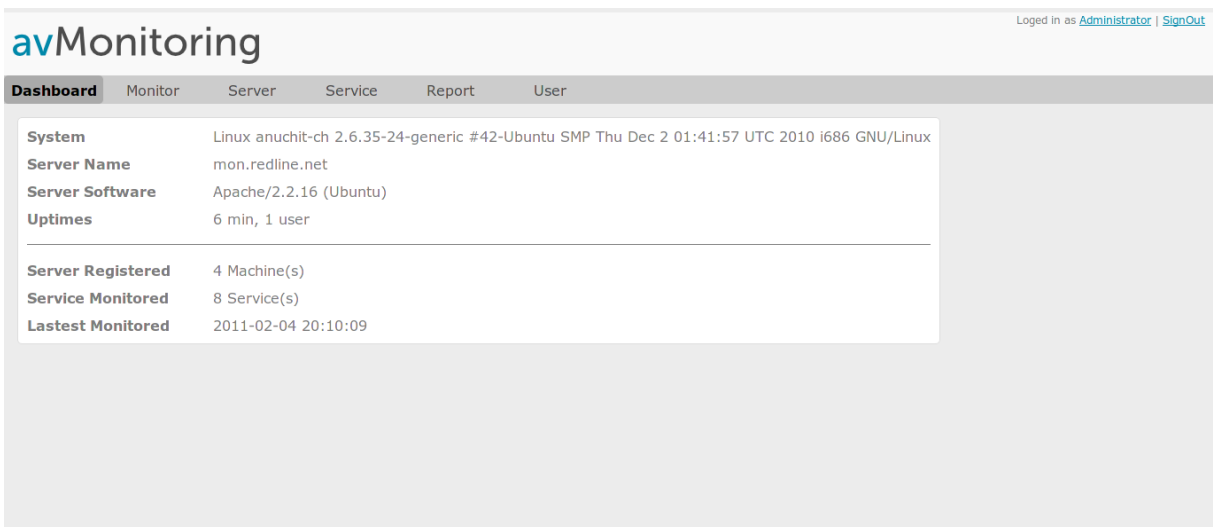


Figure 3 : Dashboard

Dashboard has information about your monitoring server, number of service monitored, date-time in latest monitored and number of server registered.

Management console has 6 pages

1. Dashboard – show information of monitoring server
2. Monitor – show service monitoring and status
3. Server – list of servers
4. Service – list of standard services
5. Report – statistic and summary report for each servers
6. User – user management for management console

Update administrator information

Pre-configuration data has an example data for administrator account, you **MUST** change it first! Before add any server and services to monitoring. Click 'preference' menu or your name; in this case is *Administrator* at the top right of Dashboard page. The page will change to preference page like figure

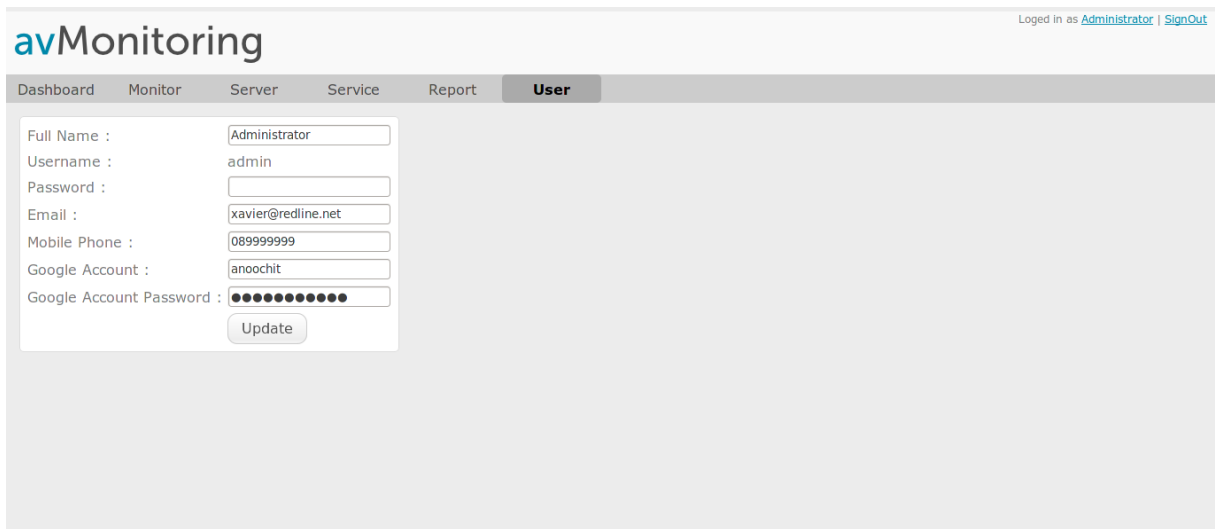
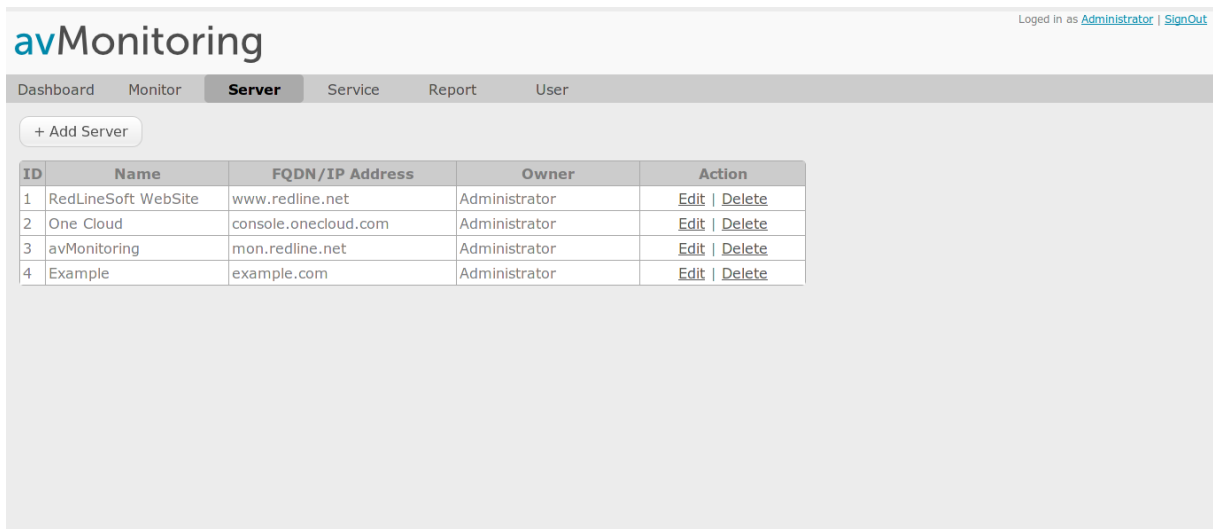
The screenshot shows the 'avMonitoring' web interface. At the top right, it says 'Logged in as Administrator | SignOut'. Below this is a navigation bar with tabs: 'Dashboard', 'Monitor', 'Server', 'Service', 'Report', and 'User' (which is highlighted). The 'User' tab leads to a form for updating user information. The form contains the following fields: 'Full Name' (with 'Administrator' entered), 'Username' (with 'admin' entered), 'Password' (empty), 'Email' (with 'xavier@redline.net' entered), 'Mobile Phone' (with '089999999' entered), 'Google Account' (with 'anoochit' entered), and 'Google Account Password' (represented by a series of dots). An 'Update' button is located at the bottom of the form.

Figure 4 : Preference page

Enter your information, change your password fill your mobile phone (if you want to use SMS gateway) or fill your Google Account and Password to use Google Calendar, you can use Google Calendar to sent SMS to your mobile (see troubleshoot)

Register Server

To monitor your server or any services on your server, you **MUST** register server to the system first. Click at 'Server' menu goto server page in figure 5



avMonitoring

Logged in as [Administrator](#) | [SignOut](#)

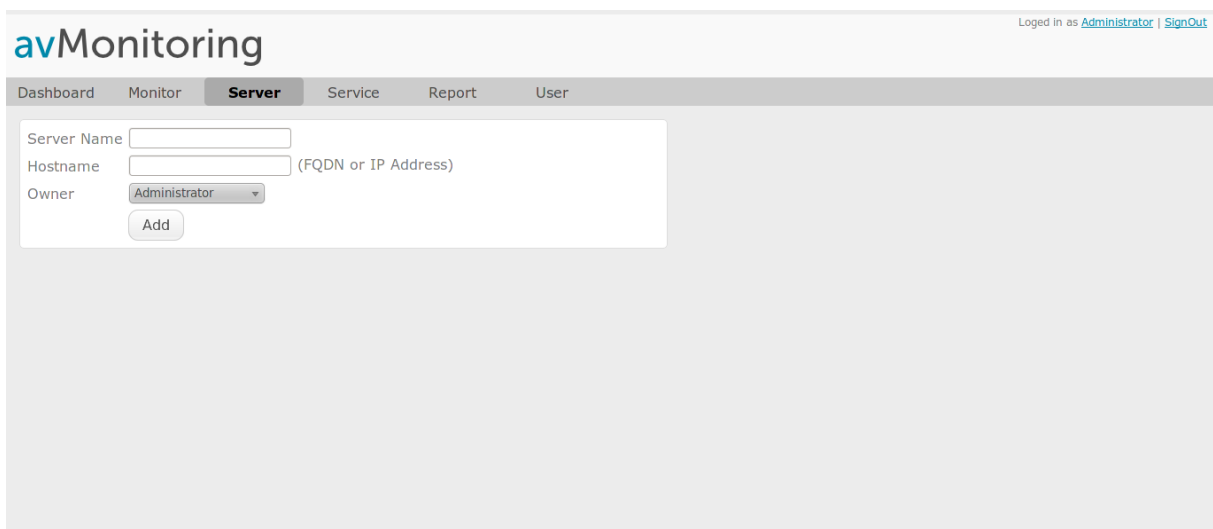
Dashboard Monitor **Server** Service Report User

+ Add Server

ID	Name	FQDN/IP Address	Owner	Action
1	RedLineSoft WebSite	www.redline.net	Administrator	Edit Delete
2	One Cloud	console.onecloud.com	Administrator	Edit Delete
3	avMonitoring	mon.redline.net	Administrator	Edit Delete
4	Example	example.com	Administrator	Edit Delete

Figure 5 : Server list

Click '+ Add Server' to register server to system. Enter server information in register form – figure 5



avMonitoring

Logged in as [Administrator](#) | [SignOut](#)

Dashboard Monitor **Server** Service Report User

Server Name

Hostname (FQDN or IP Address)

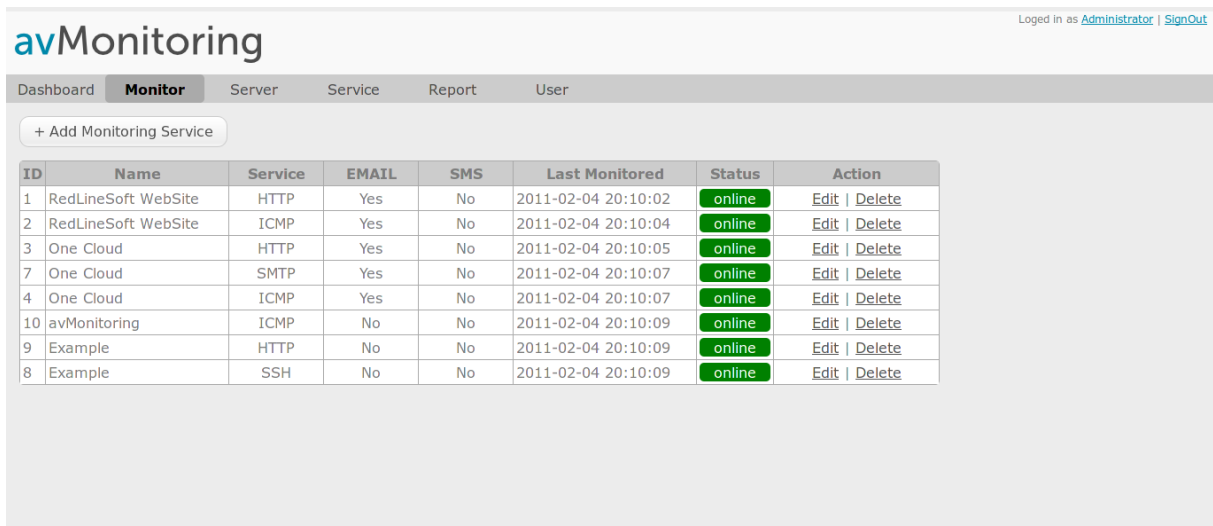
Owner

Figure 6 : Server register form

Enter the server name and hostname (it should be IP Address or FQDN) e.g. console.onecloud.com or 61.7.253.222. choose the administrator of the server. Click 'Add' to register the server. Your server information will show in Server page like figure 4

Register services to monitor

avMonitoring can monitor your server via services like HTTP, SMTP, FTP or ICMP (ping) etc. then if you want to check your server status you should pick up some services to monitor. e.g. the server call 'console.onecloud.com' has web server to serve console services for cloud customer, mail server to sent e-mail to cloud member, these services should stay alive. From information above we choose HTTP, SMTP and ICMP services to monitor. Click 'Monitor' menu to go to Monitor page - figure 6



The screenshot shows the avMonitoring web interface. At the top, there's a header with the avMonitoring logo and a user login status: "Logged in as Administrator | SignOut". Below the header is a navigation bar with tabs: Dashboard, Monitor (selected), Server, Service, Report, and User. Under the Monitor tab, there's a button "+ Add Monitoring Service". Below this is a table listing monitored services.

ID	Name	Service	EMAIL	SMS	Last Monitored	Status	Action
1	RedLineSoft WebSite	HTTP	Yes	No	2011-02-04 20:10:02	online	Edit Delete
2	RedLineSoft WebSite	ICMP	Yes	No	2011-02-04 20:10:04	online	Edit Delete
3	One Cloud	HTTP	Yes	No	2011-02-04 20:10:05	online	Edit Delete
7	One Cloud	SMTP	Yes	No	2011-02-04 20:10:07	online	Edit Delete
4	One Cloud	ICMP	Yes	No	2011-02-04 20:10:07	online	Edit Delete
10	avMonitoring	ICMP	No	No	2011-02-04 20:10:09	online	Edit Delete
9	Example	HTTP	No	No	2011-02-04 20:10:09	online	Edit Delete
8	Example	SSH	No	No	2011-02-04 20:10:09	online	Edit Delete

Figure 7 : Monitor status list

Click '+ Add Monitoring Service' button then enter information for monitor – figure 7

The screenshot shows the avMonitoring web interface. At the top, the logo 'avMonitoring' is on the left, and 'Logged in as Administrator | SignOut' is on the right. Below the logo is a navigation bar with tabs: 'Dashboard', 'Monitor' (selected), 'Server', 'Service', 'Report', and 'User'. The main content area contains a form for adding services monitoring. The form has the following fields: 'Server' with a dropdown menu showing 'avMonitoring (mon.redline.net)'; 'Service' with a dropdown menu showing 'HTTP (80)'; 'Port (Option)' with an empty text input field; and 'Notification' with two checked checkboxes, 'E-Mail' and 'SMS'. Below these fields is an 'Add' button.

Figure 8 : Add services monitoring

Choose server name and service, if your service use difference port number (not a default port number) you can enter services port number in 'Port (Option)' field, choose your notification methods; E-Mail or SMS. Then click 'Add' to add service monitoring. Go to Monitor page, your service status will be 'waiting' state (orange bar), after 15 minutes the monitoring script run and monitored status will show in Monitor page. If status is wrong see troubleshoot chapter.

Report

avMonitoring has 2 type of report; The first is statistic summary of all status. The second is statistic summary of downtime. Each reports have flash animation graph, data table and date range to generated report from any day, month or year. To generate report, click 'Report' menu to go to report page – figure 9

avMonitoring

Logged in as [Administrator](#) | [SignOut](#)

Dashboard

Monitor

Server

Service

Report

User

Choose Server :

avMonitoring (mon.redline.net)

Report Type :

Statistic Summary

Date Range :

2011-02-04

 to

2011-02-04

Inteval :

-- None --

Generate Report

Figure 9 : Report

Choose server, report type and date range the click 'Generate Report' button. The report will open in new windows (or next tab in FireFox). So you can generate another report by click Report tab and generate report again. Example report – figure 10, 11

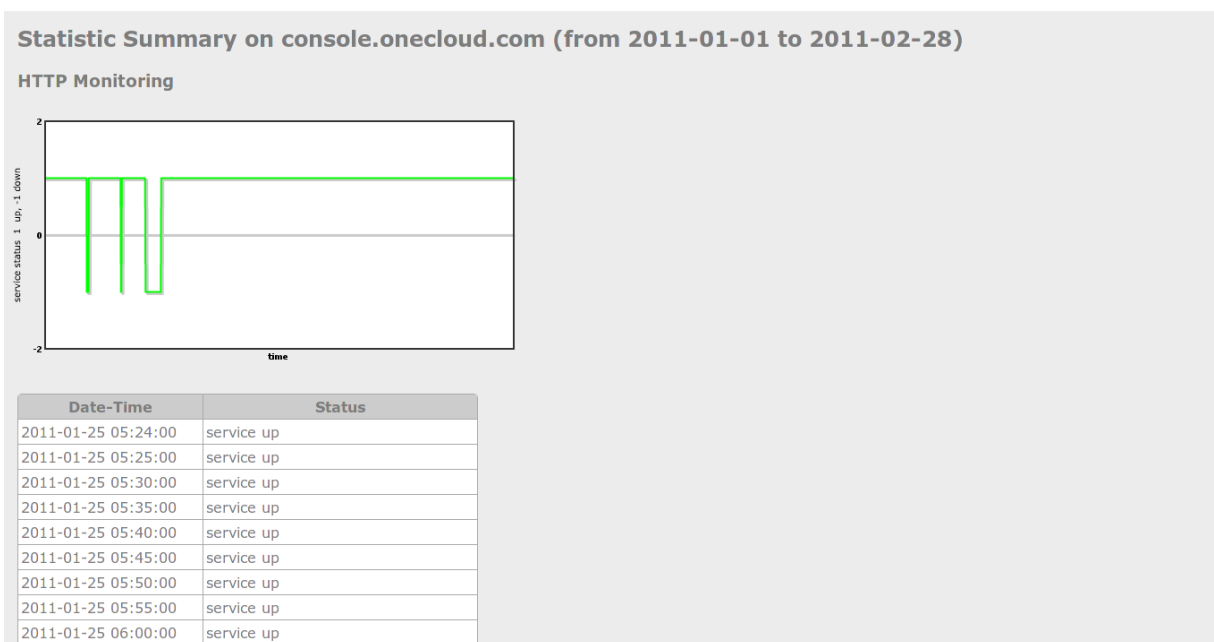


Figure 10 : Statistic summary report

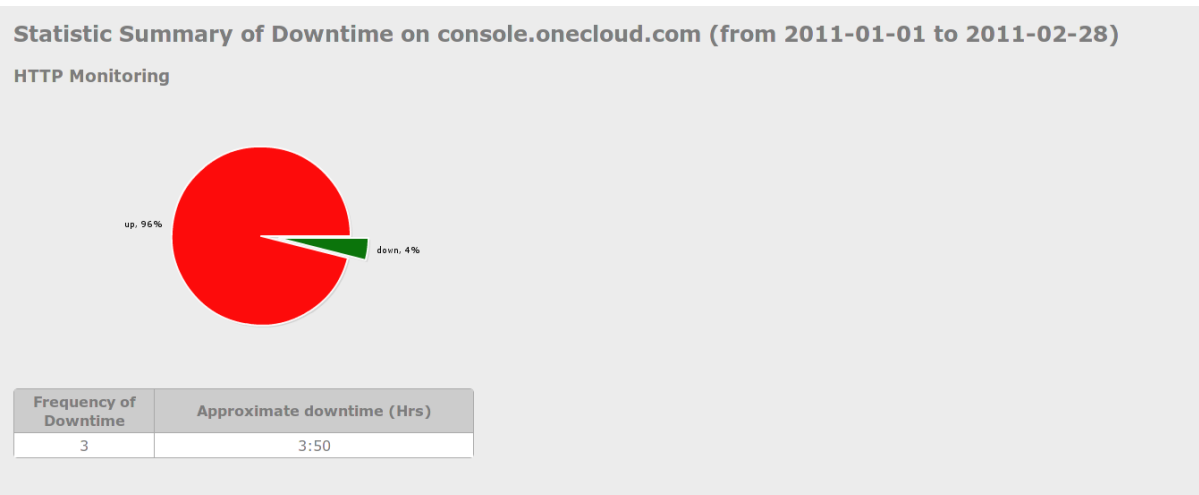


Figure 11 : Statistic summary of downtime

User Management

avMonitoring allow you to add another administrator as user of the system. To add another administrator user, go to 'User' menu – figure 12

avMonitoring Logged in as [Administrator](#) | [SignOut](#)

Dashboard Monitor Server Service Report **User**

[+ Add User](#)

ID	Name	Login	E-Mail	Action
1	Administrator	admin	xavier@redline.net	Edit
2	Anuchit Chalothorn	anoochit	anuchit@redlinesoft.net	Edit Delete
3	Nion Janpho	nion	nion@redlinesoft.net	Edit Delete

Figure 12 : User list

Add new administrator click '+Add User' button, fill information in register form below – figure 13

The screenshot shows the 'avMonitoring' web application interface. At the top right, it indicates the user is 'Logged in as Administrator' with a 'SignOut' link. A navigation bar contains links for 'Dashboard', 'Monitor', 'Server', 'Service', 'Report', and 'User', with 'User' being the active tab. The main content area displays a registration form with the following fields: 'Full Name', 'Username', 'Password', 'Email', 'Mobile Phone', 'Google Account', and 'Google Account Password'. Each field is accompanied by a text input box. An 'Add' button is positioned at the bottom of the form.

Figure 13 : User register form

Click 'Add' button to add new administrator user.

Chapter 4 : Troubleshoot

avMonitoring has 2 parts; the first is management console and the second is monitoring script. Then you should identified exactly your problems.

No monitoring log in log file.

Check root's scheduler and error message in root's e-mail.

No monitoring data in database.

Check root's scheduler and error message in root's e-mail.

No SMS message from Google Calendar.

You should setup notification at your Google Calendar via SMS.

How to send SMS by using other SMS Gateway ?

You can change SMS script at *avmonitor.cli.php* .

No notification via E-Mail address.

Please check SMTP service in monitoring server.

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AV Monitoring is a availability monitoring system, which provide an interval TCP socket check to the server for a binary status “online” and “offline”, and alert report to system admin via E-Mail, record to Google Calendar and sent SMS (with Google Calendar service). AV Monitoring provide 2 reports; status report for each servers each services and amount of downtime.

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d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

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