



# **nandView**

**Network & Systems Monitoring**

**Installation Guide**

Version 1.0

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# Installation Overview

nandView can be installed on several platforms and environments, including Linux and Windows. The following instructions will cover several typical deployment scenarios. Instructions for basic installs of Apache (apache.org), MySQL (mysql.com) and PHP (php.net) are included. If you run into any problems with these components, please refer to their support documentation. As a general practice, we recommend you install nandView on a test system before deploying to production.

The product has three major components:

Executable scripts for polling and emailing that must be run on a regular schedule. Email notifications require access to a properly configured mail server. The email component is optional.

Web files to display the user interface. The web server needs to be able to access this directory and have PHP integrated.

Two PHP include files to handle database connections and access control functions. These files need to be in the PHP include path.

*For advanced users and administrators:* You are free to install these three components in any location. These instructions assume all nandView files will go into "C:\Program Files\nandview" on Windows and "/usr/local/nandview" on Linux. Please modify the commands and paths listed in the install instructions if you are going to use an alternate location. The database setup file will create a new database user 'nanduser' with password 'n@ndUs3r' connecting from 127.0.0.1 (localhost). You can modify this if you wish. Alter the last line in nv\_db.sql (the grant statement), and the 12th line in include/database.inc.php (the mysql\_connect function). We recommend running the poller and emailer every 10 minutes. You can alter these time periods to suit your business needs.

*For Windows administrators:* You may install or compile Apache, MySQL and PHP separately, as opposed to using the simpler WampServer, if you are comfortable with installing these products.

# Installation On Ubuntu 9.04

nandView requires a web service (Apache), database service (MySQL) and PHP to operate. Fortunately, these free and open source products are available for Ubuntu 9.

We're going to use apt-get to install the support packages. If you normally install with aptitude, use that instead of apt-get.

## Installing Apache, PHP, MySQL

Run the following commands as root. If you don't have a root account, you can either run every command with sudo (such as 'sudo apt-get...' or open a root shell by using 'sudo su'.

```
apt-get install apache2
apt-get install php5
apt-get install php5-cli
apt-get install libapache2-mod-php5
apt-get install mysql-server
apt-get install php5-mysql
apt-get install sendmail
/etc/init.d/apache2 restart
```

When prompted, you should specify a password for the MySQL root user. The sendmail package is only required if you wish to send email notifications.

## Installing nandView

Untar the suite and place it into /usr/local/nandview.

If it is compressed (ends in .tgz or .gz), use the following

```
tar -xvzf nandview.tar.gz -C /usr/local/
```

If it is not compressed (ends in .tar), use the following

```
tar -xvf nandview.tar -C /usr/local/
```

You should notice the following files and directories:

- /usr/local/nandview/bin/ <- Contains the poller and emailer
- /usr/local/nandview/html/ <- Contains the web user interface
- /usr/local/nandview/include/ <- Contains the php support files
- /usr/local/nandview/LICENSE.TXT <- Contains the license agreement
- /usr/local/nandview/nv\_db.sql <- Used to create the nandview database

## Configuring PHP

There are two php.ini files. You will need to make changes to both. They can be found in:

```
/etc/php5/apache2/php.ini  
/etc/php5/cli/php.ini
```

Edit the php.ini file and search for "include\_path". You'll see an entry as follows:

```
; UNIX: "/path1;/path2"  
;include_path = "./usr/share/php"
```

Modify this section by adding the following line below it:

```
include_path = "./usr/local/nandview/include"
```

Note: If an include\_path was already defined, just add the nandview path to the end.

Make this change in both php.ini files. You'll need to restart Apache for these changes to take effect, however there are some other Apache configurations that need to be made first.

## Configuring Apache

Edit the Apache configuration file. It can be found in:

```
/etc/apache2/apache2.conf
```

Go to the bottom of the file, add the following and restart Apache:

```
Alias /nandview "/usr/local/nandview/html"  
<Directory /usr/local/nandview/html>  
Allow from all  
</Directory>
```

*For advanced users and administrators:* You can lock this service down by specifying specific IP addresses. Another option is to configure SSL support, although that goes beyond the scope of this guide. You can also configure a virtual host instead. Use the below configuration as an example.

```
<VirtualHost nandview.yourdomain.com:80>
    DocumentRoot /usr/local/nandview/html
    ErrorLog /usr/local/nandview/nandview-error
    TransferLog /usr/local/nandview/nandview-access

    ServerName nandview.yourdomain.com
    UserDir disabled
</VirtualHost>
```

## Configuring MySQL

You will now import the nandview database schema. Execute the following command on the prompt:

```
mysql -u root -p < /usr/local/nandview/nv_db.sql
```

The database should now be imported. Log in as the nand user:

```
mysql -u nanduser -p nandview
```

When prompted for a password, enter "n@ndUs3r" (without the quotes). You should now be connected to the nandview database. Issue the 'show tables' command. You should see 7 tables.

## Verification

Check that the poller and emailer scripts work. Run the following commands:

```
/usr/local/nandview/bin/nv_poller.php
/usr/local/nandview/bin/nv_emailer.php
```

If you get a message 'Permission denied', change the permissions:

```
chmod +x /usr/local/nandview/bin/nv_poller.php
chmod +x /usr/local/nandview/bin/nv_emailer.php
```

If you get a message 'bad interpreter: No such file or directory', run the commands again with php.

```
php /usr/local/nandview/bin/nv_poller.php
php /usr/local/nandview/bin/nv_emailer.php
```

These should run without any output or error messages. You can now log into the nandView web interface. Open a web browser and check <http://127.0.0.1/nandview/login.html>

You should see the login screen. Enter the default credentials.

Username: admin

Password: n@ndView

You should be able to see the dashboard. The last poll should show the current time, as opposed to 0000-00-00 00:00:00

### **Scheduling**

You can now schedule the poller and emailer to run every 10 minutes. This will go into a cron entry. You do not have to run the poller or emailer as root; any user account that can read and execute the scripts will be fine.

Open the crontab by typing:

```
crontab -e
```

If you want to run the commands under a different username:

```
crontab -e {user}
```

Go to the end and type in the following two commands:

```
0,10,20,30,40,50 * * * *  
/usr/local/nandview/bin/nv_poller.php > /dev/null 2>&1
```

```
5,15,25,35,45,55 * * * *  
/usr/local/nandview/bin/nv_emailer.php > /dev/null 2>&1
```

Enter the poller entry on a single line, and the emailer on another single line. Do not put a return in the middle of the command. If you got the 'bad interpreter' error message during the verification section above, be sure to use the same 'php /usr...' as prior.

*For advanced users and administrators:* If you are going to use multiple run groups, you can add it after the script's path. You will need to do this for every run group you wish to use.

Example: `0,10 ... nv_poller.php 2 > /dev/null 2>&1`

At this point, you should have nandView successfully installed. You will now be able to configure users, email lists and tests.

Please see "Getting Started With nandView" in the user guide.

# Installation On OpenSUSE 11.1

nandView requires a web service (Apache), database service (MySQL) and PHP to operate. Fortunately, these free and open source products are available for OpenSUSE 11.1.

If you are performing a fresh install, you can choose to install these packages. At the final step, choose to change 'System', and then select the "Web and LAMP" package.

## Installing Apache, PHP, MySQL

Run the following commands as root:

```
yast2 --install apache2
yast2 --install php5 php5-mysql apache2-mod_php5
yast2 --install mysql mysql-tools
```

Start up the processes:

```
rcapache2 start
rcmysql start
```

Set the MySQL root user password:

```
mysqladmin -u root password "new password"
```

## Installing nandView

Untar the suite and place it into /usr/local/nandview.

If it is compressed (ends in .tgz or .gz), use the following

```
tar -xvzf nandview.tar.gz -C /usr/local/
```

If it is not compressed (ends in .tar), use the following

```
tar -xvf nandview.tar -C /usr/local/
```

You should notice the following files and directories:

- /usr/local/nandview/bin/ <- Contains the poller and emailer
- /usr/local/nandview/html/ <- Contains the web user interface
- /usr/local/nandview/include/ <- Contains the php support files
- /usr/local/nandview/LICENSE.TXT <- Contains the license agreement
- /usr/local/nandview/nv\_db.sql <- Used to create the nandview database

## Configuring PHP

There are two php.ini files. You will need to make changes to both. They can be found in:

```
/etc/php5/apache2/php.ini  
/etc/php5/cli/php.ini
```

Edit the php.ini file and search for "include\_path". You'll see an entry as follows:

```
; UNIX: "/path1;/path2"  
include_path = ".:usr/share/php5:usr/share/php5/PEAR"
```

Modify this section by adding the following to the line (place this on one line - do not hit return between the equals and quote):

```
include_path =  
".:/usr/share/php5:/usr/share/php5/PEAR:/usr/local/nandview/i  
nclude"
```

Note: If include\_path was defined differently, just add the nandview path to the end.

Make this change in both php.ini files. You'll need to restart Apache for these changes to take effect, however there are some other Apache configurations that need to be made first.

## Configuring Apache

Edit the Apache configuration file. It can be found in:

```
/etc/apache2/httpd.conf
```

Go to the bottom of the file, add the following and restart Apache:

```
Alias /nandview "/usr/local/nandview/html"  
<Directory /usr/local/nandview/html>  
Allow from all  
</Directory>
```

*For advanced users and administrators:* You can lock this service down by specifying specific IP addresses. Another option is to configure SSL support, although that goes beyond the scope of this guide. You can also configure a virtual host instead. Use the below configuration as an example.

```
<VirtualHost nandview.yourdomain.com:80>
  DocumentRoot /usr/local/nandview/html
  ErrorLog /usr/local/nandview/nandview-error
  TransferLog /usr/local/nandview/nandview-access

  ServerName nandview.yourdomain.com
  UserDir disabled
</VirtualHost>
```

## Configuring MySQL

You will now import the nandview database schema. Execute the following command on the prompt:

```
mysql -u root -p < /usr/local/nandview/nv_db.sql
```

The database should now be imported. Log in as the nand user:

```
mysql -u nanduser -p nandview
```

When prompted for a password, enter "n@ndUs3r" (without the quotes). You should now be connected to the nandview database. Issue the 'show tables' command. You should see 7 tables.

## Verification

Check that the poller and emailer scripts work. Run the following commands:

```
/usr/local/nandview/bin/nv_poller.php
/usr/local/nandview/bin/nv_emailer.php
```

If you get a message 'Permission denied', change the permissions:

```
chmod +x /usr/local/nandview/bin/nv_poller.php
chmod +x /usr/local/nandview/bin/nv_emailer.php
```

If you get a message 'bad interpreter: No such file or directory', run the commands again with php.

```
php /usr/local/nandview/bin/nv_poller.php
php /usr/local/nandview/bin/nv_emailer.php
```

These should run without any output or error messages. You can now log into the nandView web interface. Open a web browser

and check <http://127.0.0.1/nandview/login.html>

You should see the login screen. Enter the default credentials.

Username: admin

Password: n@ndView

You should be able to see the dashboard. The last poll should show the current time, as opposed to 0000-00-00 00:00:00

## Scheduling

You can now schedule the poller and emailer to run every 10 minutes. This will go into a cron entry. You do not have to run the poller or emailer as root; any user account that can read and execute the scripts will be fine.

Open the crontab by typing:

```
crontab -e
```

If you want to run the commands under a different username:

```
crontab -e {user}
```

Go to the end and type in the following two commands:

```
0,10,20,30,40,50 * * * *
```

```
/usr/local/nandview/bin/nv_poller.php > /dev/null 2>&1
```

```
5,15,25,35,45,55 * * * *
```

```
/usr/local/nandview/bin/nv_emailer.php > /dev/null 2>&1
```

Enter the poller entry on a single line, and the emailer on another single line. Do not put a return in the middle of the command. If you got the 'bad interpreter' error message during the verification section above, be sure to use the same 'php /usr...' as prior.

*For advanced users and administrators:* If you are going to use multiple run groups, you can add it after the script's path. You will need to do this for every run group you wish to use.

Example: `0,10 ... nv_poller.php 2 > /dev/null 2>&1`

OpenSUSE 11.1 includes a software firewall. If you are having trouble accessing the web interface, check the firewall rules.

At this point, you should have nandView successfully installed. You will now be able to configure users, email lists and tests.

Please see "Getting Started With nandView" in the user guide.

# Installation On Fedora 11

nandView requires a web service (Apache), database service (MySQL) and PHP to operate. Fortunately, these free and open source products are available for Fedora 11.

## Installing Apache, PHP, MySQL

Run the following commands as root:

```
yum install httpd
yum install mysql mysql-server
yum install php php-mysql
```

Start the new services automatically on reboot:

```
/sbin/chkconfig httpd on
/sbin/chkconfig mysqld on
```

Start the services:

```
/sbin/service httpd start
/sbin/service mysqld start
```

Run the MySQL security setup script:

```
/usr/bin/mysql_secure_installation
```

## Installing nandView

Untar the suite and place it into /usr/local/nandview.

If it is compressed (ends in .tgz or .gz), use the following

```
tar -xvzf nandview.tar.gz -C /usr/local/
```

If it is not compressed (ends in .tar), use the following

```
tar -xvf nandview.tar -C /usr/local/
```

You should notice the following files and directories:

```
/usr/local/nandview/bin/ <- Contains the poller and emailer
/usr/local/nandview/html/ <- Contains the web user interface
/usr/local/nandview/include/ <- Contains the php support files
/usr/local/nandview/LICENSE.TXT <- Contains the license agreement
/usr/local/nandview/nv_db.sql <- Used to create the nandview database
```

## Configuring PHP

You will need to edit the `php.ini` file located at `/etc/php.ini`

Edit the file and search for `"include_path"`. You'll see an entry as follows:

```
; UNIX: "/path1;/path2"  
;include_path = "./php/includes"
```

Modify this section by adding the following line below it:

```
include_path = "./usr/local/nandview/include"
```

Note: If an `include_path` was already defined, just add the `nandview` path to the end.

You'll need to restart Apache for these changes to take effect, however there are some other Apache configurations that need to be made first.

## Configuring Apache

Edit the Apache configuration file. It can be found in:

```
/etc/httpd/conf/httpd.conf
```

Go to the bottom of the file, add the following and restart Apache:

```
Alias /nandview "/usr/local/nandview/html"  
<Directory /usr/local/nandview/html>  
Allow from all  
</Directory>
```

*For advanced users and administrators:* You can lock this service down by specifying specific IP addresses. Another option is to configure SSL support, although that goes beyond the scope of this guide. You can also configure a virtual host instead. Use the below configuration as an example.

```
<VirtualHost nandview.yourdomain.com:80>
  DocumentRoot /usr/local/nandview/html
  ErrorLog /usr/local/nandview/nandview-error
  TransferLog /usr/local/nandview/nandview-access

  ServerName nandview.yourdomain.com
  UserDir disabled
</VirtualHost>
```

## Configuring MySQL

You will now import the nandview database schema. Execute the following command on the prompt:

```
mysql -u root -p < /usr/local/nandview/nv_db.sql
```

The database should now be imported. Log in as the nand user:

```
mysql -u nanduser -p nandview
```

When prompted for a password, enter "n@ndUs3r" (without the quotes). You should now be connected to the nandview database. Issue the 'show tables' command. You should see 7 tables.

## Verification

Check that the poller and emailer scripts work. Run the following commands:

```
/usr/local/nandview/bin/nv_poller.php
/usr/local/nandview/bin/nv_emailer.php
```

If you get a message 'Permission denied', change the permissions:

```
chmod +x /usr/local/nandview/bin/nv_poller.php
chmod +x /usr/local/nandview/bin/nv_emailer.php
```

If you get a message 'bad interpreter: No such file or directory', run the commands again with php.

```
php /usr/local/nandview/bin/nv_poller.php
php /usr/local/nandview/bin/nv_emailer.php
```

These should run without any output or error messages. You can now log into the nandView web interface. Open a web browser

and check <http://127.0.0.1/nandview/login.html>

You should see the login screen. Enter the default credentials.

Username: admin

Password: n@ndView

You should be able to see the dashboard. The last poll should show the current time, as opposed to 0000-00-00 00:00:00. If you get a message about the database being down, it is possible that a selinux security policy is blocking access. Change this by issuing the command `'setsebool -P httpd_can_network_connect=1'`

## Scheduling

You can now schedule the poller and emailer to run every 10 minutes. This will go into a cron entry. You do not have to run the poller or emailer as root; any user account that can read and execute the scripts will be fine.

Open the crontab by typing:

```
crontab -e
```

If you want to run the commands under a different username:

```
crontab -e {user}
```

Go to the end and type in the following two commands:

```
0,10,20,30,40,50 * * * *
```

```
/usr/local/nandview/bin/nv_poller.php > /dev/null 2>&1
```

```
5,15,25,35,45,55 * * * *
```

```
/usr/local/nandview/bin/nv_emailer.php > /dev/null 2>&1
```

Enter the poller entry on a single line, and the emailer on another single line. Do not put a return in the middle of the command. If you got the 'bad interpreter' error message during the verification section above, be sure to use the same 'php /usr...' as prior.

*For advanced users and administrators:* If you are going to use multiple run groups, you can add it after the script's path. You will need to do this for every run group you wish to use.

Example: `0,10 ... nv_poller.php 2 > /dev/null 2>&1`

At this point, you should have nandView successfully installed. You will now be able to configure users, email lists and tests.

Please see "Getting Started With nandView" in the user guide.

# Installation On FreeBSD 7.2

nandView requires a web service (Apache), database service (MySQL) and PHP to operate. Fortunately, these free and open source products are available for FreeBSD.

FreeBSD has a feature called "ports". This makes it easy to find, compile and install various software packages. These instructions assume that you have ports installed. You will be compiling the software, so the commands may take some time to complete.

## Installing MySQL

Build the database:

```
cd /usr/ports/databases/mysql51-server
make install clean
/usr/local/bin/mysql_install_db
chown -R mysql:mysql /var/db/mysql
```

Start the MySQL database:

```
/usr/local/bin/mysqld_safe -user=mysql &
```

Set the MySQL root user password:

```
/usr/local/bin/mysqladmin -u root password "new password"
```

Configure the system to start MySQL on startup. Edit the `/etc/rc.conf` file and add the following line at the end:

```
mysql_enable="YES"
```

## Installing Apache

Build the web service:

```
cd /usr/ports/www/apache22
make install clean
```

When prompted for configuration options, you can choose the defaults. Now start up Apache:

```
/usr/local/sbin/apachectl start
```

Configure the system to start Apache on startup. Edit the `/etc/rc.conf` file and add the following line at the end:

```
apache22_enable="YES"
```

## Installing PHP

```
cd /usr/ports/lang/php5  
make install clean
```

When prompted, choose the Apache and Mailhead options.

```
cd /usr/ports/databases/php5-mysql  
make install clean
```

```
cd /usr/ports/lang/php5-extensions  
make install clean
```

When prompted, choose the `bundled_pcre` option.

```
cd /usr/local/etc/  
cp php-ini.recommended php.ini
```

## Installing nandView

Untar the suite and place it into `/usr/local/nandview`.

If it is compressed (ends in `.tgz` or `.gz`), use the following

```
tar -xvzf nandview.tar.gz -C /usr/local/
```

If it is not compressed (ends in `.tar`), use the following

```
tar -xvf nandview.tar -C /usr/local/
```

You should notice the following files and directories:

- `/usr/local/nandview/bin/` <- Contains the poller and emailer
- `/usr/local/nandview/html/` <- Contains the web user interface
- `/usr/local/nandview/include/` <- Contains the php support files
- `/usr/local/nandview/LICENSE.TXT` <- Contains the license agreement
- `/usr/local/nandview/nv_db.sql` <- Used to create the nandview database

## Configuring PHP

You will need to edit the `php.ini` file in `/usr/local/etc/php.ini`

Edit the file and search for `"include_path"`. You'll see an entry as follows:

```
; UNIX: "/path1;/path2"  
;include_path = "./usr/share/php"
```

Modify this section by adding the following line below it:  
`include_path = " ./usr/local/nandview/include"`

Note: If an `include_path` was already defined, just add the `nandview` path to the end.

You'll need to restart Apache for these changes to take effect, however there are some other Apache configurations that need to be made first.

## Configuring Apache

Edit the Apache configuration file. This file is located at `/usr/local/etc/apache22/httpd.conf`

Go to the bottom of the file, add the following and restart Apache:

```
AddType application/x-httpd-php .php
AddType application/x-httpd-php-source .phps
Alias /nandview "/usr/local/nandview/html"
<Directory /usr/local/nandview/html>
Allow from all
</Directory>
```

*For advanced users and administrators:* You can lock this service down by specifying specific IP addresses. Another option is to configure SSL support, although that goes beyond the scope of this guide. You can also configure a virtual host instead. Use the below configuration as an example.

```
<VirtualHost nandview.yourdomain.com:80>
    DocumentRoot /usr/local/nandview/html
    ErrorLog /usr/local/nandview/nandview-error
    TransferLog /usr/local/nandview/nandview-access

    ServerName nandview.yourdomain.com
    UserDir disabled
</VirtualHost>
```

## Configuring MySQL

You will now import the `nandview` database schema. Execute the following command on the prompt:

```
mysql -u root -p < /usr/local/nandview/nv_db.sql
```

The database should now be imported. Log in as the nand user:  
`mysql -u nanduser -p nandview`

When prompted for a password, enter "n@ndUs3r" (without the quotes). You should now be connected to the nandview database. Issue the 'show tables' command. You should see 7 tables.

## **Verification**

Check that the poller and emailer scripts work. Run the following commands:

```
/usr/local/nandview/bin/nv_poller.php  
/usr/local/nandview/bin/nv_emailer.php
```

If you get a message 'Permission denied', change the permissions:

```
chmod +x /usr/local/nandview/bin/nv_poller.php  
chmod +x /usr/local/nandview/bin/nv_emailer.php
```

If you get a message 'Command not found', run the commands again with php.

```
php /usr/local/nandview/bin/nv_poller.php  
php /usr/local/nandview/bin/nv_emailer.php
```

These should run without any output or error messages. You can now log into the nandView web interface. Open a web browser and check <http://127.0.0.1/nandview/login.html>

You should see the login screen. Enter the default credentials.

Username: admin

Password: n@ndView

You should be able to see the dashboard. The last poll should show the current time, as opposed to 0000-00-00 00:00:00

## Scheduling

You can now schedule the poller and emailer to run every 10 minutes. This will go into a cron entry. You do not have to run the poller or emailer as root; any user account that can read and execute the scripts will be fine.

Open the crontab by typing:

```
crontab -e
```

If you want to run the commands under a different username:

```
crontab -e {user}
```

Go to the end and type in the following two commands:

```
0,10,20,30,40,50 * * * * *  
/usr/local/nandview/bin/nv_poller.php > /dev/null 2>&1
```

```
5,15,25,35,45,55 * * * * *  
/usr/local/nandview/bin/nv_emailer.php > /dev/null 2>&1
```

Enter the poller entry on a single line, and the emailer on another single line. Do not put a return in the middle of the command. If you got the 'command not found' error message during the verification section above, be sure to use the same 'php /usr...' as prior.

*For advanced users and administrators:* If you are going to use multiple run groups, you can add it after the script's path. You will need to do this for every run group you wish to use.

Example: `0,10 ... nv_poller.php 2 > /dev/null 2>&1`

At this point, you should have nandView successfully installed. You will now be able to configure users, email lists and tests.

Please see "Getting Started With nandView" in the user guide.

# Installation On Other Linux-like

nandView requires a web service (Apache), database service (MySQL) and PHP to operate. Fortunately, these free and open source products are available for most distributions of Linux, Unix or BSD.

We cannot go over the Apache/MySQL/PHP install process for every distribution. In some cases, these suites may be installed by default, and just need to be started up. These instructions are for distributions of Linux-like and Unix-like operating systems not listed in this installation guide. It assumes that you already have a working copy of Apache, MySQL and PHP.

## Installing nandView

Untar the suite and place it into /usr/local/nandview.

If it is compressed (ends in .tgz or .gz), use the following

```
tar -xvzf nandview.tar.gz -C /usr/local/
```

If it is not compressed (ends in .tar), use the following

```
tar -xvf nandview.tar -C /usr/local/
```

You should notice the following files and directories:

/usr/local/nandview/bin/ <- Contains the poller and emailer

/usr/local/nandview/html/ <- Contains the web user interface

/usr/local/nandview/include/ <- Contains the php support files

/usr/local/nandview/LICENSE.TXT <- Contains the license agreement

/usr/local/nandview/nv\_db.sql <- Used to create the nandview database

## Configuring PHP

You will need to edit the php.ini files. Some setups will have two configs - one for Apache, the other for command line PHP. In this case, you will need to make the following changes in both files.

The php.ini files are usually stored somewhere in /etc. An easy way to search is to execute the following command:

```
find /etc -name php.ini -print
```

Edit the `php.ini` file and search for `"include_path"`. You'll see an entry as follows:

```
; UNIX: "/path1;/path2"  
;include_path = "./usr/share/php"
```

Modify this section by adding the following line below it:

```
include_path = "./usr/local/nandview/include"
```

Note: If an `include_path` was already defined, just add the `nandview` path to the end.

Make this change in both `php.ini` files. You'll need to restart Apache for these changes to take effect, however there are some other Apache configurations that need to be made first.

## Configuring Apache

Edit the Apache configuration file. This file is usually stored somewhere in `/etc`, and typically named `httpd.conf`, `apache.conf` or `apache2.conf`. It will be a rather large text file. An easy way to search is to execute the following command:

```
find /etc -name httpd.conf -print  
find /etc -name apache.conf -print  
find /etc -name apache2.conf -print
```

Go to the bottom of the file, add the following and restart Apache:

```
Alias /nandview "/usr/local/nandview/html"  
<Directory /usr/local/nandview/html>  
Allow from all  
</Directory>
```

*For advanced users and administrators:* You can lock this service down by specifying specific IP addresses. Another option is to configure SSL support, although that goes beyond the scope of this guide. You can also configure a virtual host instead. Use the below configuration as an example.

```
<VirtualHost nandview.yourdomain.com:80>
    DocumentRoot /usr/local/nandview/html
    ErrorLog /usr/local/nandview/nandview-error
    TransferLog /usr/local/nandview/nandview-access

    ServerName nandview.yourdomain.com
    UserDir disabled
</VirtualHost>
```

## Configuring MySQL

You will now import the nandview database schema. Execute the following command on the prompt:

```
mysql -u root < /usr/local/nandview/nv_db.sql
```

The database should now be imported. If you set a password for the MySQL root user, use 'mysql -u root -p' instead. Now log in as the nand user:

```
mysql -u nanduser -p nandview
```

When prompted for a password, enter "n@ndUs3r" (without the quotes). You should now be connected to the nandview database. Issue the 'show tables' command. You should see 7 tables.

## Verification

Check that the poller and emailer scripts work. Run the following commands:

```
/usr/local/nandview/bin/nv_poller.php
/usr/local/nandview/bin/nv_emailer.php
```

If you get a message 'permission denied', change the permissions:

```
chmod +x /usr/local/nandview/bin/nv_poller.php
chmod +x /usr/local/nandview/bin/nv_emailer.php
```

If you get a message 'bad interpreter' or 'command not found', run the commands again with php.

```
php /usr/local/nandview/bin/nv_poller.php
php /usr/local/nandview/bin/nv_emailer.php
```

These should run without any output or error messages. You can

now log into the nandView web interface. Open a web browser and check <http://127.0.0.1/nandview/login.html>

You should see the login screen. Enter the default credentials.

Username: admin

Password: n@ndView

You should be able to see the dashboard. The last poll should show the current time, as opposed to 0000-00-00 00:00:00

### **Scheduling**

You can now schedule the poller and emailer to run every 10 minutes. This will go into a cron entry. You do not have to run the poller or emailer as root; any user account that can read and execute the scripts will be fine.

Open the crontab by typing:

```
crontab -e
```

If you want to run the commands under a different username:

```
crontab -e {user}
```

Go to the end and type in the following two commands:

```
0,10,20,30,40,50 * * * *  
/usr/local/nandview/bin/nv_poller.php > /dev/null 2>&1
```

```
5,15,25,35,45,55 * * * *  
/usr/local/nandview/bin/nv_emailer.php > /dev/null 2>&1
```

Enter the poller entry on a single line, and the emailer on another single line. Do not put a return in the middle of the command. If you got the 'bad interpreter' error message during the verification section above, be sure to use the same 'php /usr...' as prior.

*For advanced users and administrators:* If you are going to use multiple run groups, you can add it after the script's path. You will need to do this for every run group you wish to use.

Example: `0,10 ... nv_poller.php 2 > /dev/null 2>&1`

At this point, you should have nandView successfully installed. You will now be able to configure users, email lists and tests.

Please see "Getting Started With nandView" in the user guide.

# Installation On Windows XP

nandView requires a web service, database service and PHP to operate. These programs are not included with Windows XP. Fortunately, free and open source solutions exist.

You will need to install several pieces of software in addition to nandView. The following instructions will show you how to install and configure Apache, MySQL, PHP and nandView.

We'll be utilizing a project called WampServer to install the supporting software. The instructions assume that WampServer is bundled with Apache 2.2.11, MySQL 5.1.26 and PHP 5.3.0. If the version numbers are slightly different, please modify the commands to reflect the installed version.

## Installing nandView

If the suite is still compressed, unzip the archive. Move the nandview directory into "C:\Program Files\". You should notice the following files and directories:

C:\Program Files\nandview\bin\ <- Contains the poller and emailer  
C:\Program Files\nandview\html\ <- Contains the web user interface  
C:\Program Files\nandview\include\ <- Contains the php support files  
C:\Program Files\nandview\LICENSE.TXT <- Contains the license agreement  
C:\Program Files\nandview\nv\_db.sql <- Used to create the nandview database

You are now ready to install and configure the supporting software, WampServer. This can be downloaded, legally and for free, from <http://www.wampserver.com/en/download.php>.

Run the install program, choosing the default values. At one point, you will be prompted for your SMTP server and a valid email address. You will need to set these to allow nandView to send out email notifications. If you are unsure of these values, you can change this later.

Start the services. From the start menu, choose WampServer -> start WampServer

You can now open a web browser and go to <http://localhost>

Verify you see the WampServer page. Click the link `phpinfo()` near the bottom of the page. You should see information about the PHP build.

Open up a command prompt and change to the mysql directory. Note that the version number listed below may change if you are using a more recent release of WampServer.

```
cd c:\wamp\bin\mysql\mysql5.1.36\bin
```

Run the mysql executable

```
mysql.exe -u root
```

At the prompt, type "`show databases`". You should see two databases listed (`information_schema` and `mysql`).

If the above steps worked, you have a good install of Apache, MySQL and PHP.

## Configuring MySQL

You will now import the nandview database schema. Leave the mysql database from the previous step (type `'exit'`), so that you're at the command prompt in the `mysql5.1.36\bin` directory, and execute the following command:

```
mysql -u root < "C:\Program Files\nandview\nv_db.sql"
```

The database should now be imported. Log in as the nand user:

```
mysql -u nanduser -p nandview
```

When prompted for a password, enter `"n@ndUs3r"` (without the quotes). You should now be connected to the nandview database. Issue the `'show tables'` command. You should see 7 tables.

## Configuring PHP

There are two php.ini files. You will need to make the following changes to both. These are located at:

```
C:\wamp\bin\php\php5.3.0\php.ini  
C:\wamp\bin\apache\Apache2.2.11\bin\php.ini
```

Open the php.ini file and search for "include\_path". You'll see an entry as follows:

```
; Windows: "\path1;path2"  
;include_path = ".;c:\php\includes"
```

Modify this section by adding the following line below it:

```
include_path = ".;c:\Program Files\nandview\include"
```

Note: If you need to change the mail server settings, you'll find them in these two files. Look for the "SMTP =" and "smtp\_port" and "sendmail\_from" directives.

Make these changes in both php.ini files. You'll need to restart Apache for these changes to take effect, however there are some other Apache configurations that need to be made first.

## Configuring Apache

Edit the httpd.conf file. You can find it at:

```
C:\wamp\bin\Apache2.2.11\conf\httpd.conf
```

If you are planning on using the web server for just nandview, change the DocumentRoot entry.

```
DocumentRoot "C:/wamp/www"
```

Change this to:

```
DocumentRoot "C:/Program Files/nandview/html/"
```

Now change the Directory line

```
<Directory "C:/wamp/www">
```

Change this to:

```
<Directory "C:/Program Files/nandview/html">
```

Looking down a few lines, you'll see lines that say  
Order Deny, Allow  
Deny from all  
Allow from 127.0.0.1  
</Directory>

Change this to:

```
#Order Deny, Allow  
#Deny from all  
#Allow from 127.0.0.1  
Allow from all  
</Directory>
```

*For advanced users and administrators:* You can lock this service down by specifying specific IP addresses. Another option is to configure SSL support, although that goes beyond the scope of this guide. You can also configure a virtual host instead. Use the below configuration as an example.

```
<VirtualHost nandview.yourdomain.com:80>  
    DocumentRoot C:/Program Files/nandview/html  
    ErrorLog C:/Program Files/nandview/nandview-error  
    TransferLog C:/Program Files/nandview/nandview-access  
  
    ServerName nandview.yourdomain.com  
    UserDir disabled  
</VirtualHost>
```

You will now need to restart Apache. Use the WampService tray icon in the lower right corner, or reboot the system.

## **Verification**

Check that the poller and emailer scripts work. Run the following commands:

```
C:\wamp\bin\php\php5.3.0\php.exe "C:\Program  
Files\nandview\bin\nv_poller.exe"
```

```
C:\wamp\bin\php\php5.3.0\php.exe "C:\Program  
Files\nandview\bin\nv_emailer.exe"
```

These should run without any output or error messages. You can now log into the nandView web interface. Open a web browser and check <http://127.0.0.1/login.html>

You should see the login screen. Enter the default credentials.

Username: admin

Password: n@ndView

You should be able to see the dashboard. The last poll should show the current time, as opposed to 0000-00-00 00:00:00

## Scheduling

You can now schedule the poller and emailer to run every 10 minutes. Type in the following two commands on a prompt:

```
schtasks /create /st 00:00:00 /sc minute /mo 10 /tn "NV  
Poller" /ru "System" /tr "C:\wamp\bin\php\php5.3.0\php.exe  
\"C:\Program Files\nandview\bin\nv_poller.php\""
```

```
schtasks /create /st 00:05:00 /sc minute /mo 10 /tn "NV  
Emailer" /ru "System" /tr "C:\wamp\bin\php\php5.3.0\php.exe  
\"C:\Program Files\nandview\bin\nv_emailer.php\""
```

Note that the nandview scripts are enclosed inside \" \"

You can view or edit these in the Scheduled Tasks control panel. It will also show when they last ran, or if there was an error.

*For advanced users and administrators:* If you are going to use multiple run groups, you can add it after the second \".

You will need to do this for every run group you wish to use.

Example: `schtasks /create ..... \bin\nv_poller.php\" 2"`

At this point, you should have nandView successfully installed. You will now be able to configure users, email lists and tests.

Please see "Getting Started With nandView" in the user guide.

# Installation On Windows 2003 Server with IIS 6.0

nandView requires a web service, database service and PHP to operate. Windows 2003 Server comes bundled with IIS 6.0. Assuming you wish to use IIS, you will still need to install MySQL and PHP. If you do not want to use IIS, follow the Windows XP install instructions. Please note that using nandView with IIS is a bit more complex than using Apache, especially if you have previously configured IIS. We recommend reading and searching for more information at <http://learn.iis.net> before making these changes on a production web server.

## Installing nandView

If the suite is still compressed, unzip the archive. Copy the nandview directory into "C:\Program Files\". You should notice the following files and directories:

C:\Program Files\nandview\bin\ <- Contains the poller and emailer  
C:\Program Files\nandview\html\ <- Contains the web user interface  
C:\Program Files\nandview\include\ <- Contains the php support files  
C:\Program Files\nandview\LICENSE.TXT <- Contains the license agreement  
C:\Program Files\nandview\nv\_db.sql <- Used to create the nandview database

You are now ready to install and configure the supporting software.

## Installing IIS

If you do not have IIS installed yet, follow these instructions. You will need your Windows 2003 Server Install CD. Select 'Add/Remove Programs' from the control panels. Now click on the 'Add/Remove Windows Components' icon. Double click on 'Application Server', and then select the 'Internet Information Service (IIS)' component. Click the 'ok' button, and then hit the 'next' button. You'll need to insert the Windows CD, and afterwards IIS will be installed. You will probably want to run Windows Update now, as several security patches become

available when IIS is installed. Test the installation by opening a web browser and going to <http://localhost>

## **Installing PHP**

You will need to download the PHP binary and install files. These can be found at <http://windows.php.net/download/>

There may be an option to choose the VC6 or VC9 build. You will need VC9 when using IIS. We're using 'PHP 5.3.0 VC9 x86 Non Thread Safe'. There will be a link for 'Zip' and another link for 'Installer' below it. Download both files and save to the desktop. On the left, you will see a link to the 'Microsoft 2008 C++ Runtime (x86)'. Click this link and download, saving to the desktop. Now download the FastCGI Extension from Microsoft. You can find this at <http://www.iis.net/1521/ItemPermalink.ashx>. You will have four files on the desktop: `php-5.3.0-nts-Win32-VC9-x86.msi`, `php-5.3.0-nts-Win32-VC9-x86.zip`, `vcredist_x86.exe` and `fcgisetup32.msi`.

Run `vcredist_x86.exe` first. It will go through a simple, standard install. Install `fcgisetup32.msi`, another straight forward install. You will now need to run the PHP msi file. It will default to installing the files in `C:\Program Files\PHP\`. When asked to set up a web server, choose 'IIS FastCGI'.

When the installer finishes, you have a basic PHP setup. Now right click the PHP zip file located on the desktop, and choose extract all. When asked for the destination, change it to `C:\Program Files\PHP` and overwrite the files.

## **Configuring PHP**

Edit the `php.ini` file. It is located at:  
`C:\Program Files\PHP\php.ini`

Search for "`include_path`". You'll see an entry as follows:

```
; Windows: "\path1;path2"  
;include_path = ".;c:\php\includes"
```

Modify this section by adding the following line below it:  
`include_path = ".;c:\Program Files\nandview\include"`

Search for "date.timezone". You'll see an entry as follows:

```
[Date]  
; Defines the default timezone used by the date functions  
; http://php.net/date.timezone
```

Modify this section by adding the following line below it:

```
date.timezone = America/New_York
```

Note: If you need to change the mail server settings, you'll find it here. Look for the "SMTP =" and "smtp\_port" and "sendmail\_from" directives.

## Configuring IIS

You will now need to configure IIS to recognize PHP.

Open a command shell, change to the inetsrv directory

```
(cd "c:\WINDOWS\system32\inetsrv") and execute the following:  
cscript fcgiconfig.js -add -section:"PHP" -extension:php -  
path:"C:\Program Files\PHP\php-cgi.exe"
```

Open the Internet Information Service Manager. This can be found in the Control Panels subgroup Administrative Tools. Expand the Web Site section, and select 'Default Web Site'. Right click, and choose Properties. You will be presented with the properties pane, and 8 tabs on the top. Select the 'Home Directory' tab. There will be a button labeled 'Configuration...'. Select it, then click 'Add...'. Set the executable to "C:\WINDOWS\system32\inetsrv\fcgiext.dll" and the extension to ".php" (without any quotes). Change the Verbs to 'Limit to' and fill in "GET,HEAD,POST". Finally, make sure the script engine and verify the file exists boxes are checked. Save the changes and close the properties pane.

You will now need to configure a virtual directory for nandview. Right click the Default Web Site and select New -> Virtual Directory. For the alias, enter "nandview". For the path, put in "C:\Program Files\nandview". For permissions, select Read, Run Scripts, Execute Scripts. After the directory is created, restart IIS or reboot.

### **Installing MySQL**

You will need to download the free MySQL suite. Go to <http://dev.mysql.com/downloads/mysql/5.1.html> and choose to download the MySQL Community Server. You will want to select the "Windows MSI Installer" option. If it asks you to register a new account, this is unnecessary, as you should see a "No thanks, just take me to the downloads!" link below it.

Run the installer, and choose the Typical installation. At the end, you'll have two selection boxes, one for configuring the MySQL server now, the other for register the MySQL server. You can deselect the registration choice, and just configure the server.

In the configuration utility, choose a standard configuration, install as a service and include bin directory in Windows path. Next you will be able to specify a 'root password' for MySQL. This is preferred, so you should enter a password now.

### **Configuring MySQL**

You will now import the nandview database schema. Open a command prompt and execute the following command:

```
mysql -u root -p < "C:\Program Files\nandview\nv_db.sql"
```

You will be prompted for the root password, as entered previously. If you choose not to have a root password, remove the '-p' option.

The database should now be imported. Log in as the nand user:  
`mysql -u nanduser -p nandview`

When prompted for a password, enter "n@ndUs3r" (without the quotes). You should now be connected to the nandview database. Issue the 'show tables' command. You should see 7 tables.

## Verification

Check that the poller and emailer scripts work. Run the following commands:

```
php "C:\Program Files\nandview\bin\nv_poller.exe"  
php "C:\Program Files\nandview\bin\nv_emailer.exe"
```

These should run without any output or error messages. You can now log into the nandView web interface. Open a web browser and check <http://127.0.0.1/nandview/login.html>

You should see the login screen. Enter the default credentials.  
Username: admin  
Password: n@ndView

You should be able to see the dashboard. The last poll should show the current time, as opposed to 0000-00-00 00:00:00

## Scheduling

You can now schedule the poller and emailer to run every 10 minutes. Type in the following two commands on a prompt:

```
schtasks /create /st 00:00:00 /sc minute /mo 10 /tn "NV  
Poller" /ru "System" /tr "\"C:\Program Files\PHP\php.exe\"  
\"C:\Program Files\nandview\bin\nv_poller.php\""
```

```
schtasks /create /st 00:05:00 /sc minute /mo 10 /tn "NV  
Emailer" /ru "System" /tr "\"C:\Program Files\PHP\php.exe\"  
\"C:\Program Files\nandview\bin\nv_emailer.php\""
```

Note that the php.exe and nandview files are enclosed inside \" \"

You can view or edit these in the Scheduled Tasks control panel. It will also show when they last ran, or if there was an error.

*For advanced users and administrators:* If you are going to use multiple run groups, you can add it after the second \".

You will need to do this for every run group you wish to use.

Example: `schtasks /create ..... \bin\nv_poller.php\" 2"`

At this point, you should have nandView successfully installed. You will now be able to configure users, email lists and tests.

Please see "Getting Started With nandView" in the user guide.

# Additional Help

nandView website:  
<http://nandview.com>

Apache Documentation and Help  
<http://httpd.apache.org/docs/2.2/>

MySQL Documentation and Help  
<http://dev.mysql.com/doc/refman/5.1/en/>

PHP Documentation and Help  
<http://www.php.net/manual/en/>

For basic nandView technical support and questions, email:  
[tech\\_support@nandview.com](mailto:tech_support@nandview.com)

Inquiries and suggestions, email:  
[inquiry@nandview.com](mailto:inquiry@nandview.com)

Professional services, additional support and custom programming  
are available for hire.

nandView Installation Guide  
nandView Network & Systems Monitoring Suite  
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