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# **Baruwa Enterprise Edition Documentation**

*Release 2.0.2*

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Baruwa Enterprise Edition is a fully fledged Mail Security solution, based on best of breed open source software packages. It provides protection from spam, viruses, phishing attempts and malware.

Baruwa Enterprise Edition works with any standard SMTP server, is highly accurate, scalable, easy to integrate as well as manage.

Automated installation and configuration management tools are provided to ensure the efficient and easy management of the System.



# WHAT IS BARUWA ENTERPRISE EDITION

*Baruwa Enterprise Edition* is a fully fledged Mail Security solution, based on best of breed open source software packages. It provides protection from spam, viruses, phishing attempts and malware.

*Baruwa Enterprise Edition* works with any standard SMTP server, is highly accurate, scalable, easy to integrate as well as manage.

Automated installation and configuration management tools are provided to ensure the efficient and easy management of the System.

The management interface is implemented using web 2.0 features (AJAX) where deemed fit. It has full support for i18n, enabling you to translate it into any language of your choosing. It has already been translated into to over 25 languages. Current *Languages supported*

Also included is reporting functionality with an easy to use query builder, whose results can be displayed as message lists or graphed as colorful and pretty interactive graphs.

Built in Full text search functionality allows you to find information very fast and easily. Advanced searching options available in leading web search engines are supported.

*Baruwa Enterprise Edition* is built on an open source core.

## 1.1 How does it work

It operates as an Email security gateway accepting mail from untrusted sources, running extensive checks on it and then passing the clean mail to the destination.

For incoming messages, it is configured to accept mail on behalf of your internal mail server run extensive checks on it then forward the clean mail to your internal mail server.

For outgoing messages, your internal mail server can be configured to pass all outbound messages to it for processing before being sent on to the destination. From the internal servers point of view the system is its smart host.

## 1.2 Features

- Spam, Virus, Phishing, Malware protection
- Extensive Spam Detection checks
- AJAX support for most operations

- Ultra fast full text search
- Reporting with AJAX enabled query builder
- I18n support, allows use of multiple languages
- Themes/Skins for rebranding
- Signature management / Branding
- Mail queue management and reporting
- Message delivery/relay information
- DKIM management
- Reporting graphs
- Emailed PDF reports
- Audit trails
- Archiving of old message logs
- SQLite backup prevents data loss when DB is unavailable
- MTA integration
- Multi Tenancy
- User profile aware approved/banned sender management
- IP / network addresses supported in approved/banned list manager
- SQL based MailScanner configuration management
- System status information
- IPv6 Support
- Asynchronous MailScanner logging
- Import and Export of User accounts and Domains
- AD/Exchange integration to auto populate account and group information
- Easy plug-in authentication to external authentication systems
- AD/LDAP, POP3, IMAP, SMTP, RADIUS Authentication support
- Tools for housekeeping tasks
- Easy clustering of multiple servers
- Works both with and without Javascript enabled

## **1.3 System Requirements**

- Intel/AMD 2.0 GHZ+ 64-bit CPU
- Minimum - 2 GB RAM
- 10 GB free disk space for software and logs (SATA or SCSI for performance, and RAID/Mirroring for redundancy)
- Additional disk space for mail storage
- Centos/RHEL/SL/OL Operating systems



# INSTALLATION

## 2.1 Centos/RHEL/SL Automated installation

### 2.1.1 Overview

Baruwa Enterprise Edition is shipped from a subscription based repository and provides stable and tested packages for Centos/RHEL/SL. Access to this repository is obtained by purchasing a server subscription.

If you do not already have a subscription for the server you want to install please refer to <https://www.baruwa.com> to obtain a subscription for the server before proceeding.

### 2.1.2 Step 1: Installation requirements

You need a valid Baruwa enterprise subscription, which provides you with a server entitlement as well as an activation key to activate the entitlement.

#### Enable the EPEL repository

The EPEL repository is a volunteer-based community effort from the Fedora project to create a repository of high-quality add-on packages for Red Hat Enterprise (RHEL) and its compatible spinoffs such as CentOS, Oracle Enterprise Linux or Scientific Linux. You can find more details on EPEL including how to add it to your host at <http://fedoraproject.org/wiki/EPEL> and <http://fedoraproject.org/wiki/EPEL/FAQ#howtouse>.

You need to enable this repo in order to access required packages:

```
rpm -Uvh http://download.fedoraproject.org/pub/epel/6/i386/epel-release-6-8.noarch.rpm
```

#### Install Spacewalk client packages

Baruwa Enterprise Edition entitlements are managed by the Baruwa Network. The Baruwa Network uses the Spacewalk server to manage entitlements. In order to access the Baruwa Enterprise Edition repository you need to install the Spacewalk client tools. These tools are provided by the Spacewalk project via a yum repository which you need to enable:

```
rpm -Uvh http://yum.spacewalkproject.org/1.9/RHEL/6/x86_64/spacewalk-client-repo-1.9-1.el6.noarch.rpm
```

Having enabled the Spacewalk repository you can now install the Spacewalk client packages:

```
yum install rhn-client-tools rhn-check rhn-setup rhnsd m2crypto yum-rhn-plugin -y
```

### Install Baruwa signing keys

The packages in the Baruwa Centos/RHEL/SL enterprise repository are cryptographically signed using GPG keys. The package containing these GPG keys needs to be manually installed before continuing to the next step:

```
rpm -Uvh https://www.baruwa.com/downloads/baruwa-enterprise-release-6-2.noarch.rpm
rpm --import /etc/pki/rpm-gpg/RPM-GPG-KEY-BARUWA-ENTERPRISE-6
```

### Activate Entitlement

The Baruwa Centos/RHEL/SL enterprise repository is available to subscribers only. To install from this repo you need to activate the entitlement for the server that you are installing.

The server entitlement activation key is emailed to you when you purchase a subscription. Use the activation key to register your server with the Baruwa Network using the command below:

```
rhnreg_ks --serverUrl=https://bn.baruwa.com/XMLRPC --activationkey=<activation-key>
```

## 2.1.3 Step 2: Installation

Install puppet:

```
yum install puppet -y
```

Download and install the puppet toaster from the baruwa.com website:

```
curl -O https://www.baruwa.com/downloads/puppet-toaster-latest.tar.bz2
tar xjvf puppet-toaster-latest.tar.bz2 -C /etc/puppet/
```

Create a puppet host manifest for your host by copying the provided sample:

```
cp /etc/puppet/manifests/toasters/baruwa/init.pp \
/etc/puppet/manifests/toasters/baruwa/${hostname}.pp
chown root:root /etc/puppet/manifests/toasters/baruwa/${hostname}.pp
chmod 0600 /etc/puppet/manifests/toasters/baruwa/${hostname}.pp
```

Edit the manifest file and set the options to reflect the host you are installing.

Make sure you change the following options

---

**Note:** Don't use the @ and : characters in the passwords or usernames

---

Option	Description
\$pgsql_password	Postgresql admin password
\$baruwa_admin_user	Baruwa admin username
\$baruwa_admin_email	Baruwa admin user email
\$baruwa_admin_passwd	Baruwa admin user password
\$baruwa_pgsql_passwd	Baruwa Postgresql password
\$baruwa_timezone	Server Timezone
\$baruwa_session_secret	Session encryption key
\$baruwa_app_uuid	Baruwa application UUID
\$baruwa_rabbitmq_passwd	Baruwa RabbitMQ password
\$baruwa_quarantine_host_url	Quarantine URL
\$baruwa_web_vhost	Baruwa virtual host name
\$baruwa_web_serveraliases	Baruwa server aliases
\$baruwa_mail_host	Mail server hostname
\$baruwa_bayes_pgsql_pass	Bayes Postgresql password
\$baruwa_cluster_peers	Hostnames of other nodes that are in the cluster. <i>Must be hostnames not IP Addresses</i>
\$baruwa_cluster_peer_ips	IP addresses of other nodes that are in the cluster <i>Must be IP addresses not hostnames</i>
\$baruwa_cluster_id	The cluster ID of this node <i>Must be an integer</i>
\$baruwa_quarantine_shared	Enables and disables shared quarantine features
\$baruwa_custom_name	Sets the custom product name for rebranding
\$baruwa_custom_url	Sets the url for the product
\$sphinx_enable_wildcard	Enable Sphinx wildcard indexing, enabling this will use more disk space
\$openssl_country_code	SSL Certificate country code
\$openssl_ca_name	SSL CA name
\$openssl_province_name	SSL Certificate province
\$openssl_city_name	SSL city name
\$openssl_org_name	SSL organization name

### SSL Certificates

If you have an SSL certificate that is issued by a recognized CA and would like Baruwa to use it, install it prior to running puppet:

```
mkdir -p /etc/pki/baruwa/{certs,private}
```

Create the file `/etc/pki/baruwa/certs/$(hostname).pem` with the contents of your SSL certificate

Create the file `/etc/pki/baruwa/private/$(hostname).key` with the contents of your SSL private key

Run puppet using the manifest file that you created. This will take some time while it sets up your server. When the command finishes you will have a fully working Baruwa installation:

```
puppet -v /etc/puppet/manifests/toasters/baruwa/$(hostname).pp
```

---

**Note:** If any of the tasks fails, rerun the above command.

---

## 2.1.4 Step 3: Finalize configuration

Now that the installation and setup are complete, you need to finalize the setup by [Adding a scanning Node](#), [Add an Organization](#), [Adding a Domain](#) and [Adding an Account](#).

Review the [Administrators guide](#) for other configuration and setup options available.

## 2.1.5 Step 4: Advanced options

Baruwa Enterprise Edition supports clustering as well as customization using themes. If you intend on using these features read the following topics

- *Clustering*
- *Themes*

## 2.1.6 Step 5: Getting help

Support and assistance are available to you, refer to *Support* for details on how to get help.

## 2.2 Centos/RHEL/SL Manual installation

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**Note:** Manual installations are for experienced system administrators who would like to fully customize their installations and intimately understand the various software packages used. Please use the *Centos/RHEL/SL Automated installation* if in depth customization is not what you want or you are not conversant with all the packages used to create a fully functional Mail security system.

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### 2.2.1 Overview

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### 2.2.2 Step 1: Installation requirements

You need a valid Baruwa enterprise subscription, which provides you with a server entitlement as well as an activation key to activate the entitlement.

#### Enable the EPEL repository

The EPEL repository is a volunteer-based community effort from the Fedora project to create a repository of high-quality add-on packages for Red Hat Enterprise (RHEL) and its compatible spinoffs such as CentOS, Oracle Enterprise Linux or Scientific Linux. You can find more details on EPEL including how to add it to your host at <http://fedoraproject.org/wiki/EPEL> and <http://fedoraproject.org/wiki/EPEL/FAQ#howtouse>.

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```

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```
rpm -Uvh http://yum.spacewalkproject.org/1.9/RHEL/6/x86_64/spacewalk-client-repo-1.9-1.el6.noarch.rpm
```

Having enabled the Spacewalk repository you can now install the Spacewalk client packages:

```
yum install rhn-client-tools rhn-check rhn-setup rhnsd m2crypto yum-rhn-plugin -y
```

## Install Baruwa signing keys

The packages in the Baruwa Centos/RHEL/SL enterprise repository are cryptographically signed using GPG keys. The package containing these GPG keys needs to be manually installed before continuing to the next step:

```
rpm -Uvh https://www.baruwa.com/downloads/baruwa-enterprise-release-6-2.noarch.rpm
rpm --import /etc/pki/rpm-gpg/RPM-GPG-KEY-BARUWA-ENTERPRISE-6
```

## Activate Entitlement

The Baruwa Centos/RHEL/SL enterprise repository is available to subscribers only. To install from this repo you need to activate the entitlement for the server that you are installing.

The server entitlement activation key is emailed to you when you purchase a subscription. Use the activation key to register your server with the Baruwa Network using the command below:

```
rhnreg_ks --serverUrl=https://bn.baruwa.com/XMLRPC --activationkey=<activation-key>
```

## 2.2.3 Step 2: Install and configure supporting packages

### Step 2a: PostgreSQL

This is the database backend used by Baruwa to store data. You only have to install the server if you are going to run the database on the system system as Baruwa:

```
yum install postgresql-server postgresql-pltpython -y
```

We now need to set a password on the postgresql postgres admin account, we use the password strongPgP4ss change this for your environment.:

```
chown postgres.postgres /var/lib/pgsql
echo "strongPgP4ss" > /tmp/ps
su postgres -c "/usr/bin/initdb /var/lib/pgsql/data --auth='password' --pwfile=/tmp/ps -E UTF8"
rm -rf /tmp/ps
```

You now need to configure the authentication settings on your postgresql server, edit your pg\_hba.conf file and change the entries to the following:

```
cat > /var/lib/pgsql/data/pg_hba.conf << 'EOF'
# TYPE DATABASE USER CIDR-ADDRESS METHOD
local all all md5
host all all 127.0.0.1/32 md5
```

```
host    all            all            :::1/128      md5
EOF
```

Configure the server to use the UTC timezone as the default timezone:

```
sed -e "s/^#timezone = \(.*\)$/timezone = 'UTC'/" -i /var/lib/pgsql/data/postgresql.conf
```

Restart the service for the configuration changes to take effect:

```
service postgresql restart
```

With the server now started you can proceed to configuration. Here we will create a Baruwa postgresql database user account as well as a database to store Baruwa data.

We're going to assume that the database is called `baruwa`, the postgresql user is called `baruwa`, and the password is `verysecretpw`.

Create the database user:

```
psql -Upostgres postgres -c "CREATE ROLE baruwa WITH LOGIN PASSWORD 'verysecretpw';"
```

Create the database:

```
createdb -U postgres -E UTF8 -O baruwa -T template1 baruwa
```

Baruwa uses functions written in the `plpgsql` and `plpythonu` procedural languages. Enable these languages in the db:

```
psql -U postgres baruwa -c "CREATE LANGUAGE plpgsql;"
psql -U postgres baruwa -c "CREATE LANGUAGE plpythonu;"
```

### Step 2b: RabbitMQ

The RabbitMQ server is used as the message broker to handle the processing on backend tasks such as releasing messages, reading queues and providing host status information.

Run the following commands to install and start RabbitMQ on your system.:

```
yum install rabbitmq-server -y
service rabbitmq-server start
```

Now create a virtual host and a RabbitMQ user to be used by Baruwa.

We're going to assume that the virtual host is called `baruwa`, the RabbitMQ user is called `baruwa`, and the password is `mysecretpwd`.

Create the user account, the virtual host and give the user permissions on the virtual host:

```
rabbitmqctl add_user baruwa mysecretpwd
rabbitmqctl add_vhost baruwa
rabbitmqctl set_permissions -p baruwa baruwa ".*" ".*" ".*"
```

Remove the guest user:

```
rabbitmqctl delete_user guest
```

### Step 2c: Sphinx

The Sphinx search server provides fast indexed search results to queries submitted via Baruwa.

Run the following commands to install and start sphinx on your system:

```
yum install sphinx
```

Set the required database settings:

```
sed -i -e 's:sql_host =:sql_host = 127.0.0.1:' \
    -e 's:sql_user =:sql_user = baruwa:' \
    -e 's:sql_pass =:sql_pass = verysecretpw:' \
    -e 's:sql_db =:sql_db = baruwa:' /etc/sphinx/sphinx.conf
```

Start the Sphinx server:

```
service searchd restart
```

## Step 2d: Memcached

Memcached is used to cache data and alleviate the load on the database backend as well as store sessions:

```
yum install memcached -y
service memcached start
```

## Step 2e: MailScanner

MailScanner is the integrated engine that performs the various checks used to identify and classify spam and various threats.

Baruwa manages the MailScanner configuration by storing the configurations in the PostgreSQL Database. MailScanner signatures can also be managed using Baruwa for both domains and individual users.

Install MailScanner:

```
yum install mailscanner -y
```

Sample configuration files for MailScanner and exim are provided in the source under [extras/config/exim](#) and [extras/config/mailscanner](#). Please review and reuse.

## Step 2f: Nginx

Nginx is the web server available in Baruwa Enterprise. Install it by running:

```
yum install nginx -y
```

Create the Baruwa Nginx configuration file `/etc/nginx/conf.d/baruwa.conf` with the following contents.

```
# -*- coding: utf-8 -*-
# Baruwa - Web 2.0 MailScanner front-end.
# Copyright (C) 2010-2012 Andrew Colin Kissa <andrew@topdog.za.net>
# vim: ai ts=4 sts=4 et sw=4
upstream baruwacluster {
    ip_hash;
    server unix:///var/run/baruwa/baruwa.sock;
}

server {
    listen [::]:80;
    server_name _;
```

```
access_log /var/log/nginx/baruwa-access.log combined;
error_log /var/log/nginx/baruwa-error.log;
charset utf-8;
keepalive_requests 50;
keepalive_timeout 300 300;
server_tokens off;
root /usr/lib/python2.6/site-packages/baruwa/public;
index index.html index.htm;
client_max_body_size 25M;
location ~*/(imgs|js|css)/ {
    root /usr/lib/python2.6/site-packages/baruwa/public;
    expires max;
    add_header Cache-Control "public";
    break;
}
location = /favicon.ico {
    root /usr/lib/python2.6/site-packages/baruwa/public/imgs;
    expires max;
    add_header Cache-Control "public";
    break;
}
location / {
    uwsgi_pass baruwacluster;
    include uwsgi_params;
    uwsgi_param SCRIPT_NAME '';
    uwsgi_param UWSGI_SCHEME $scheme;
}
}
```

Start the Nginx service:

```
service nginx restart
```

## 2.2.4 Step 3: Install Baruwa

With all the requirements in place you can now install Baruwa by running the following command:

```
yum install baruwa -y
```

## 2.2.5 Step 4: Setup Baruwa

### Step 4a: Create configuration files

Create the configuration file:

```
paster make-config baruwa /etc/baruwa/production.ini
```

Set the sqlalchemy database url:

```
sed -i -e 's|baruwa:@127.0.0.1:5432/baruwa|baruwa:verysecretpw@127.0.0.1:5432/baruwa|' \
    /etc/baruwa/production.ini
```

Set the broker password and enable the queues:



```
sed -i -e 's:broker.password =:broker.password = mysecretpwd:' \  
      -e "s:snowy.local:$(hostname):g" \  
      -e 's:^#celery.queues:celery.queues:/' /etc/baruwa/production.ini
```

Check the configuration file and ensure that the `baruwa.timezone` option matches the timezone configured on your server. Take time to review the other options to ensure that they are correct for your setup.

---

**Note:** Don't use the `@` and `:` characters in the passwords or usernames

---

### Step 4b: Populate the database

Creation of functions written in `plpythonu` requires PostgreSQL admin user access. So we create them in this step using the `postgres` admin account:

```
psql -U postgres baruwa -f /usr/lib/python2.6/site-packages/baruwa/config/sql/admin-functions.sql
```

The creation of all database tables, addition of initial data and the creation of an admin user is taken care of via this Pylons command:

```
paster setup-app /etc/baruwa/production.ini
```

### Step 4c: Create the sphinx indexes

The initial sphinx search indexes need to be created by running the command:

```
indexer --all --rotate
```

### Step 4d: Start the celery daemon

Start the celeryd daemon:

```
service baruwa start
```

### Step 4e: Link uwsgi configuration

Link the Baruwa configuration to the uwsgi configuration directory:

```
ln -s /etc/baruwa/production.ini /etc/uwsgi  
service uwsgi restart
```

## 2.2.6 Step 5: Finalize configuration

Now that the installation and setup are complete, you need to finalize the setup by *Adding a scanning Node*, *Add an Organization*, *Adding a Domain* and *Adding an Account*.

Review the *Administrators guide* for other configuration and setup options available.

## 2.2.7 Step 6: Advanced options

Baruwa Enterprise Edition supports clustering as well as customization using themes. If you intend on using these features read the following topics

- *Clustering*
- *Themes*

## 2.2.8 Step 7: Getting help

Support and assistance are available to you, refer to *Support* for details on how to get help.

# ADVANCED CONFIGURATION

## 3.1 External Authentication

Baruwa can be configured to authenticate to external authentication systems using authentication mechanisms such as LDAP, RADIUS, IMAP, POP3, SMTP, OAUTH.

### 3.1.1 Supported Mechanisms

The following mechanisms are supported and can be fully configured via the web interface.

- LDAP
- RADIUS
- IMAP
- POP3
- SMTP

### 3.1.2 Configuration

Authentication mechanisms are setup on a per domain basis. The process is documented in the Domain management section of the admin guide under *Authentication Settings*

### 3.1.3 Planned Mechanisms

Future support is planned for the following

- YUBIKEY
- OAUTH

## 3.2 Clustering

### 3.2.1 Functionality available

Baruwa is capable of running in a cluster.

Full Baruwa functionality is available from any member within a Baruwa cluster and all cluster members have equal status. This allows you to provide round robin access either using a load balancer or DNS configuration. This makes the running of a cluster totally transparent to the end users.

Cluster wide as well as node status information is visible via *Global status* and *Scanner node status*

### 3.2.2 Requirements

Baruwa stores client session information in Memcached, so all the nodes in the cluster should be configured to use the same Memcached server.

All nodes should be configured to either use a clustered MQ broker or use the same MQ broker as the other nodes. The nodes should be aware of the other nodes queues to enable them to submit tasks to those queues.

All the nodes with in a cluster should be configured to write to a single database and index data to a single or distributed sphinx server.

The full requirements are:

- Shared Memcached server
- Shared PostgreSQL server
- Shared MQ broker or clustered broker
- Shared Sphinx server or distributed sphinx servers

The recommended setup is to have Memcached, PostgreSQL, RabbitMQ, Sphinx running on a separate server.

The firewall on the server hosting the above shared services needs to be configured to allow the following connections from the cluster nodes.

- TCP 9312, 9306 - Sphinx
- TCP 5432 - PostgreSQL or 6432 PgBouncer
- TCP 4369 - RabbitMQ EPMD
- TCP 11211 - Memcached

### 3.2.3 Shared quarantine

Since version 2.0.1 Baruwa supports shared quarantines using shared storage subsystems like NFS, GlusterFS, OCFS, etc. With a shared quarantine, message operations are still possible regardless of non availability of the node that processed the message. To use a shared quarantine you need to:

- Mount the quarantine directory to the shared file subsystem
- Set the Baruwa configuration option `ms.quarantine.shared` to true
- Ensure that Exim generates unique message ids by setting the `localhost_number` option
- Ensure the `celeryd` and `exim` user ids are same for all nodes in the cluster

### 3.2.4 Limitations

---

**Note:** This limitation is not present when using a shared quarantine.

---

Quarantines are node specific, so messages quarantined on a failed node will not be accessible until the node is restored.

## 3.3 Themes

Themes, also known as skins, in the Baruwa Enterprise Edition are a combination of Mako Template, CSS and JS files that control the appearance of the Baruwa Web interface as well as reports and emails sent out by the system.

The theme system allows you to easily change the appearance of Baruwa, for example, to use the logo and colors of your company or institution. Themes are linked to the hostname used to access the Baruwa server and the domain user accounts belong to, which means that you can virtual host various brands on the same server with different appearance and product name for each.

Using themes ensures that the changes you make survive upgrades as opposed to changes made to the default template and asset files shipped with Baruwa which get overwritten during an upgrade.

### 3.3.1 What can be customized

- Logos
- Web interface
- Emails
- Reports
- Product name
- Product url

### 3.3.2 Guidelines

- Themes **MUST** retain the copyright notice at the bottom.

### 3.3.3 Configuration

The default configuration assumes that themes are stored under the following directory `/usr/share/baruwa/themes` with the following directory structure:

```
/templates/<hostname>/  
/templates/<domainname>/  
/assets/<hostname>/  
/assets/<domainname>/
```

Themes are configured by:

- Pointing the web server configuration for assets to the site's asset directory
- Setting the `baruwa.themes.base` to the directory containing the themes
- Setting the `baruwa.custom.name` to the custom product name
- Setting the `baruwa.custom.url` to the custom product web url

### 3.3.4 Creating a simple theme

To start off, you simply copy the default templates and assets into the a theme directory for the hostname you would like to customize for.

I will be using the hostname `spamfighter.example.com`:

```
BARUWA_PATH=$(python -c "from distutils.sysconfig import get_python_lib; print get_python_lib()")
mkdir -p /usr/share/baruwa/themes/assets/spamfighter.example.com/
mkdir -p /usr/share/baruwa/themes/templates/spamfighter.example.com/
cp -a $BARUWA_PATH/baruwa/templates/* /usr/share/baruwa/themes/templates/spamfighter.example.com/
cp -a $BARUWA_PATH/baruwa/public/* /usr/share/baruwa/themes/assets/spamfighter.example.com/
```

You can now modify the changes to the templates under `/usr/share/baruwa/themes/templates/spamfighter.example.com` and the CSS, JS and image files under `/usr/share/baruwa/themes/assets/spamfighter.example.com`

In order to brand other non web interfaces such as email you need to link the themes to the domain name you want to brand.

For example to theme the domain name `example.com`:

```
ln -s /usr/share/baruwa/themes/assets/spamfighter.example.com \
/usr/share/baruwa/themes/assets/example.com
ln -s /usr/share/baruwa/themes/templates/spamfighter.example.com \
/usr/share/baruwa/themes/templates/example.com
```

### 3.3.5 Creating themes from scratch

It is possible to totally redesign the Baruwa interface using a theme, this requires an understanding of the data being sent into the template files by Baruwa as well as the Mako Template language.

Theme customization services are available from the author.

### 3.3.6 Emails and Reports

In order to send out reports and emails that are customized using the above configurations you need to use the new generation commands.

- `paster send-quarantine-reports-ng` for quarantine reports
- `send-pdf-reports-ng` for pdf reports

# ADMINISTRATORS GUIDE

## 4.1 Managing Organizations

Organizations enable easy management of large number of domains, Administrators are assigned to Organizations and can manage all the domains with in the organization.

You can create smaller organizations out of bigger organizations and add specific domains from a bigger organization to allow delegation of domain management.

### 4.1.1 Add an Organization

1. Mouse over `Organizations`
2. Click `Add Organization`
3. Enter the name in `Organization name`
4. Select domain in `Domains` list if they already exist
5. Select admins from `Admins` list if they already exist
6. Click the `Add organization Button`

### 4.1.2 Update an Organization

1. Click `Organizations`
2. Select organization > Click `Edit`
3. Make changes
4. Click the `Update organization Button`

### 4.1.3 Delete an Organization

1. Click `Organizations`
2. Select organization > Click `Delete`
3. Check `Delete Organization domains` if you want to delete domains belonging to the organization.
4. Click the `Delete organization Button`

#### 4.1.4 Search for an Organization

If you have a large number of organizations you can search for an organization by name.

1. Click `Organizations`
2. Enter the organization name in the search box
3. Click the `Search Button`

#### 4.1.5 List all domains that belong to an organization

To find all domains that belong to a specific organization.

1. Click `Organizations`
2. Select `organization > Click List domains`

#### 4.1.6 List all accounts that belong to an organization

To find all accounts that belong to a specific organization.

1. Click `Organizations`
2. Select `organization > Click List accounts`

#### 4.1.7 Add a new domain to an organization

1. Click `Organizations`
2. Select `organization > Click Add domain`
3. Enter the domain details
4. Click `Add domain`

#### 4.1.8 Import domains in to an organization

Domains can be imported using a CSV formatted file. To import domains in to an organization.

1. Click `Organizations`
2. Select `organization > Click Import domains`
3. Browse for the CSV file by clicking `Browse` next to the `CSV file` field
4. Check `Skip first line` if your first line contains descriptions.
5. Click the `Import Button`

#### 4.1.9 Export an Organization's user accounts

You can export all the user accounts with in an organization.

1. Click `Organizations`
2. Click the organization name
3. Click `Export accounts`



4. Click Download the csv file
5. Save the file to your computer

#### 4.1.10 View Organization details

To view the details of an organization such as number of domains, admins, relay settings

1. Click Organizations
2. Click the organization name

#### 4.1.11 Add Outbound SMTP relay settings

Relaying of outbound mail is authenticated on a per organization basis, to enable an organization to send outbound mail through Baruwa you need to add relay settings.

Two kinds of outbound relaying are supported.

- IP address
- SMTP AUTH

##### Add Outbound SMTP IP Address settings

This allows the specific IP address to send outbound mail through Baruwa.

1. Click Organizations
2. Click the organization name
3. Click Add relay setting
4. Enter the IP address in the Hostname field
5. Ensure the Enabled checkbox is checked
6. Click Add settings

##### Add Outbound SMTP AUTH settings

This allows any client that supplies these credentials to send outbound mail through Baruwa.

1. Click Organizations
2. Click the organization name
3. Click Add relay setting
4. Ensure the Enabled checkbox is checked
5. Enter the username in the SMTP-AUTH username field
6. Enter the password in the SMTP-AUTH password field
7. Reenter the password in the Retype Password field
8. Click Add settings

## 4.2 Managing Domains

### 4.2.1 Adding a Domain

Domains can be added by either importing them using a CSV file or by adding them using the Add domain form.

To add a domain by import refer to *Import domains in to an organization*. To add a domain using the Add domain form,

1. Mouse over Domains
2. Click Add a domain
3. Enter the domain details
4. Click the Add domain Button

### 4.2.2 Updating a Domain

1. Click Domains
2. Select the domain > Click Edit under actions
3. Update the details you want to change
4. Click the Update Domain Button

### 4.2.3 Deleting a Domain

1. Click Domains
2. Select the domain > Click the Domain name
3. Click Delete domain
4. Click the Delete Domain Button

### 4.2.4 Exporting Domains

Domains can be exported to CSV, To export domains.

1. Click Domains
2. Click Export Domains
3. Click Download the csv file
4. Save the CSV file to your computer

### 4.2.5 Domain Settings

Each domain has a range of additional settings that you can configure. These include *Delivery Servers, Authentication Settings, Alias Domains, DKIM, Signatures*

## Delivery Servers

Delivery servers are the actual mail servers hosting the email accounts where messages processed by Baruwa need to be delivered.

Multiple servers per domain are supported and they can be configured to either `load balance` or `fail over`.

In `load balance` mode mail is sent to the group of servers in a `round robin` manner while in `fail over` mail is sent to the first in the list and only to the others if the first is not available.

### Adding a delivery server

1. Click `Domains`
2. Select the domain > Click the `actions settings` icon
3. Click `Add delivery server`
4. Enter server IP address or `Hostname` in the `Server address` field
5. Select the protocol in the `Protocol` drop down
6. Change the port in the `Port` field if your mail server does not use port 25
7. Ensure the `Enabled` checkbox is checked
8. Click the `Add server` button

### Editing a delivery server

1. Click `Domains`
2. Select the domain > Click the `Domain name`
3. Scroll to the bottom
4. Select the delivery server > Click `Edit`
5. Make changes
6. Click the `Update server` button

### Deleting a delivery server

1. Click `Domains`
2. Select the domain > Click the `Domain name`
3. Scroll to the bottom under `Delivery Servers`
4. Select the delivery server > Click `Delete`
5. Click the `Delete server` button

### Authentication Settings

Authentication settings allow users within a domain be be authenticated to an external authentication system.

This can be used for centralized user management and to allow users to use existing authentication credentials instead of creating duplicate accounts on the Baruwa system.

The supported external authentication mechanisms include:

- AD/LDAP
- SMTP
- POP3
- IMAP
- RADIUS

The following mechanisms are planned but have not been implemented yet:

- YUBIKEY
- OAUTH

The AD/LDAP mechanism allows for the user details in the directory to be automatically updated to the Baruwa account created for them. These details include:

- First name
- Last name
- Primary Email Address
- Alias Email Addresses

### Adding Authentication Settings

1. Click `Domains`
2. Select the domain > Click the actions settings icon
3. Click `Add Authentication settings`
4. Enter server IP address or Hostname in the `Server address` field
5. Select the Authentication protocol in the `Protocol` drop down
6. Enter the port in the `Port` field
7. Ensure the `Enabled` checkbox is checked
8. Enter a username map template if your usernames require translation e.g Webmin creates usernames like `domainowner.username` the template would be `domainowner.%(user)` For available variables see *Username map template variables*
9. Click the `Add` button

The AD/LDAP and RADIUS mechanisms require additional settings which can be added by *Adding AD/LDAP Authentication additional settings* and *Adding RADIUS Authentication additional settings*.

### Username map template variables

Username map templates allow you to map Baruwa logins to complex user naming schemes such as those used by web hosting control panels for virtual accounts.

The following variables are available to your username map template:

- `% (user)` - replaced by user part of the login
- `% (domain)` - replaced by the domain part of the login

### Adding AD/LDAP Authentication additional settings

AD/LDAP authentication requires the following additional setting.

- `Base DN` - The LDAP Directory Base DN
- `Username attribute` - The username attribute, defaults to `uid`
- `Email attribute` - The email attribute, defaults to `mail`
- `Bind DN` - The BIND DN if Directory does not allow anonymous binds
- `Bind password` - The BIND password
- `Use TLS` - Use a TLS connection
- `Search for UserDN` - Find the UserDN then Bind to that
- `Auth Search Filter` - Filter used to find the UserDN, *LDAP Search Filter Variables* are supported
- `Auth Search Scope` - Search Scope, defaults to `subtree`
- `Email Search Filter` - Filter used to find email addresses, *LDAP Search Filter Variables* are supported
- `Email Search Scope` - Search Scope, defaults to `subtree`

To Add AD/LDAP Authentication additional settings:

1. Click `Domains`
2. Select the domain > Click the `Domain name`
3. Scroll to the bottom under `Authentication Servers`
4. Select the LDAP Authentication server > Click `Settings`
5. Enter the required settings
6. Click the `Save settings` button

### LDAP Search Filter Variables

The following variables are available for use in your LDAP search filters.

- `%n` - login (`user@domain`)
- `%u` - user (user part of the login)
- `%d` - domain (domain part of the login)
- `%D` - domainDN (domain DN)

### Adding RADIUS Authentication additional settings

The RADIUS protocol requires a shared secret between the client and the server, the additional settings allows you to configure this.

To Add RADIUS Authentication additional settings:

1. Click Domains
2. Select the domain > Click the Domain name
3. Scroll to the bottom under Authentication Servers
4. Select the RADIUS Authentication server > Click Settings
5. Enter the shared secret in the Radius secret field
6. Click the Save settings button

### Alias Domains

Some domains have mail addressed to the same account using different domain names, Alias domains allow users access to all their messages regardless of the domain name under a single login.

### Adding an Alias Domain

1. Click Domains
2. Select the domain > Click the actions settings icon
3. Click Add Alias Domain
4. Enter Alias domain name in the Domain alias name field
5. Ensure the Enabled checkbox is checked
6. Click the Add button

### DKIM

*DomainKeys Identified Mail (DKIM) is a method for associating a domain name to an email message, thereby allowing a person, role, or organization to claim some responsibility for the message. The association is set up by means of a digital signature which can be validated by recipients.* [Wikipedia](#)

Baruwa allows you to manage the digital signatures within the interfaces and signs any outbound messages for which DKIM is enabled.

### Generate DKIM Keys

To generate DKIM keys for a domain,

1. Click Domains
2. Select the domain > Click the actions settings icon
3. Click DKIM > Generate DKIM keys
4. Select DNS record and add to you DNS zone

### Enable DKIM signing

1. Make sure you have followed the steps in *Generate DKIM Keys*
2. Click Domains
3. Select the domain > Click the actions settings icon
4. Click DKIM > Enable/Disable DKIM signing
5. Ensure the Enabled checkbox is checked
6. Click the Submit button

### Regenerate DKIM keys

1. Click Domains
2. Select the domain > Click the actions settings icon
3. Click DKIM > Regenerate DKIM keys
4. Select DNS record and update your DNS zone

### Signatures

Baruwa can manage email signatures / disclaimers that are added to messages that are sent outbound through it. Both HTML and Text signatures are supported. HTML signatures can contain a single embedded image.

#### Adding Signatures/Disclaimers

1. Click Domains
2. Select the domain > Click the actions settings icon
3. Click Signatures > Add signature
4. Select Signature type from the drop down
5. Enter signature content
6. Ensure the Enabled checkbox is checked
7. Click the Add signature button

### Importing Accounts

Accounts can be imported into a domain using a CSV file.

1. Click Domains
2. Select the domain > Click the actions settings icon
3. Click Import accounts
4. Browse for the CSV file by clicking Browse next to the CSV file field
5. Check Skip first line if your first line contains descriptions.
6. Click the Import Button

## Exporting Accounts

Accounts can be exported from a domain to a CSV file.

1. Click `Domains`
2. Select the domain > Click the actions `settings` icon
3. Click `Export accounts`
4. Click `Download the csv file`
5. Save the file to your computer

## Rulesets

---

**Note:** Domain specific rule sets are not implemented yet.

---

### 4.2.6 Searching for Domains

If you have a large number of domains you can search for a domain by name.

1. Click `Domains`
2. Enter the `Domains` name in the search box
3. Click the `Search Button`

### 4.2.7 Bulk domain management

To enable, disable or delete multiple domains:

1. Click `Domains`
2. Use the checkbox to select the domains
3. Select `enable` or `disable` or `delete` at the top
4. Click the `Submit button`

## 4.3 Managing Accounts

### 4.3.1 Adding an Account

Accounts can be added by either importing them using a CSV file or by adding them using the `Add Account` form.

To add an Account by import refer to *Importing Accounts*. To add a Account using the `Add Account` form:

1. Mouse over `Accounts`
2. Click `Add Account`
3. Enter the Account details
4. Click the `Create Account button`



### 4.3.2 Updating an Account

1. Click `Accounts`
2. Select the account > Click `Edit` under actions
3. Update the details you want to change
4. Click the `Update account` button

### 4.3.3 Deleting an Account

1. Click `Accounts`
2. Select the Account > Click the `Account name`
3. Click `Delete account`
4. Click the `Delete Account` button

### 4.3.4 Exporting Accounts

Accounts can be exported to CSV, To export accounts.

1. Click `Accounts`
2. Click `Export Accounts`
3. Click `Download the csv file`
4. Save the CSV file to your computer

### 4.3.5 Search for Accounts

If you have a large number of accounts you can search for an account or accounts by name.

1. Click `Accounts`
2. Enter the Accounts name in the search box
3. Click the `Search Button`

### 4.3.6 Add account signatures

Baruwa can manage email signatures / disclaimers that are added to messages that are sent outbound through it. Both HTML and Text signatures are supported. HTML signatures support a single embedded image.

Account specific signatures/disclaimers can be setup.

1. Click `Accounts`
2. Select the Account > Click the `Username`
3. Click `Add signature`
4. Select `Signature type` from the drop down
5. Enter signature content
6. Ensure the `Enabled` checkbox is checked

7. Click the `Add signature` button

### 4.3.7 Changing an Account password

Domain administrator and normal user account passwords can be changed using the web interface, administrator accounts can only be changed using the command line.

To change an account password:

1. Click `Accounts`
2. Select the Account > Click the `Username`
3. Click `Change password`
4. Enter the password in the `New Password` field
5. Reenter the password in the `Retype Password` field
6. Click the `Change password` button

### 4.3.8 Bulk account management

To enable, disable or delete multiple accounts:

1. Click `Accounts`
2. Use the checkbox to select the accounts
3. Select `enable` or `disable` or `delete` at the top
4. Click the `Submit` button

## 4.4 Managing Settings

### 4.4.1 Adding a scanning Node

In order to manage the scanner settings as well as get status information on your Baruwa servers you need to add them as scanning nodes.

1. Mouse over `Settings`
2. Click `Add scanning node`
3. Enter the `Hostname` in the `Hostname` field
4. Ensure the `Enabled` checkbox is checked
5. Click the `Add node` button

### 4.4.2 Customize Node scanner settings

You can customize scanner settings for a specific node.

1. Click `Settings`
2. Select the scanning node > Click `settings` under actions
3. Make the changes

4. Click the `Save settings` button

### 4.4.3 Customize the Global scanner settings

These settings apply to all scanners that are managed from within this interface.

1. Mouse over `Settings`
2. Click `MailScanner settings`
3. Make the changes
4. Click the `Save settings` button

## 4.5 System Status

System status gives you a dash board view of your Baruwa system or cluster.

The following information is provided:

- Global status
- Scanner node status
- Mail Queues
- Audit logs

### 4.5.1 Global status

The global status dashboard gives you the status information for the whole of your Baruwa system/cluster at a glance.

#### Day's processed message totals

- Number of messages processed
- Number of messages found to be clean
- Number of messages found to be High scoring spam
- Number of messages found to be Low scoring spam
- Number of messages found to be Virus infected
- Number of messages found to be Policy blocked
- Number of messages in the Inbound queues
- Number of messages in the Outbound queues

#### Graph of Day's processed message totals

A graphical view of the above information in a PIE chart graph.

#### Scanner node status

The status of all the scanning nodes in this Baruwa cluster.

## 4.5.2 Scanner node status

Provides the status of a specific scanning node, and allows you to pull additional information via select commands.

The following status information is provided.

- Day's stats for the specific node
- Node Hardware status (CPU, Memory, Disk, Network)
- System Network stats
- System software status (Scanners, MTA, Anti Virus engine)

## 4.5.3 Mail Queues

The status of both the `inbound` and `outbound` mail queues is provided. The following actions can be performed on messages that are in the queues:

- Delivery
- Bounce
- Hold
- Delete
- Preview

Details on how to carry out the above actions can be found in the user guide's *Processing queued messages* section.

## 4.5.4 Audit logs

Audit logs are provided for the interactions that users have with the system. The following information is recorded.

- Date and Time
- Username
- Interaction information
- Baruwa Node hostname or IP address
- Users IP address
- Category

Interactions are classified under the following categories

- Read
- Create
- Auth
- Update

The Audit logs can be exported in both PDF and CSV formats for offline usage.

The Audit logs are searchable, all full text search options are supported. Tips on searching are available on the *Baruwa Search Tips and Tricks* page.

## 4.6 Command line Reference

Custom paster commands are provided to enable scripting of house keeping tasks such as quarantine management and Database maintenance.

### 4.6.1 Command options and help

These commands may take options to get details on the supported options run:

```
paster baruwa
paster COMMAND_NAME -h or paster help COMMAND_NAME
```

### 4.6.2 Quarantine management

```
paster prune-quarantine /etc/baruwa/production.ini
```

Deletes quarantined files older than `ms.quarantine.days_to_keep`. This is set in the `/etc/baruwa/production.ini` file

### 4.6.3 Quarantine reports

```
paster send-quarantine-reports-ng /etc/baruwa/production.ini
```

Generates an email report of the quarantined messages. This command allows you to specify the number of days the report should cover as well as the maximum number of messages to return. The following switches allow you to specify periods.

- `-o NUM_DAYS, --newer-than=NUM_DAYS` Report on messages this number of days back
- `-m MAX_MSGS, --max-records=MAX_MSGS` Maximum number of messages to return
- `-i ORG_ID, --org-id=ORG_ID` Process only this organization's accounts
- `-e EXCLUDE_ORG, --excluded-org=EXCLUDE_ORG` Exclude this organization's accounts

### 4.6.4 Database maintenance

```
paster prune-database /etc/baruwa/production.ini
```

Deletes records older than 30 days from the messages table of the database, and archives them to the archive table. It deletes records older than 90 days from the archives table. These defaults can be configured in the configuration file as the following options:

- `baruwa.messages.keep.days`
- `baruwa.archive.keep.days`

The following options allow you to specify the periods of the records that need to be processed.

- `-d --days` records older than this number are deleted from messages
- `-a --adays` records older than this number are deleted from archives

### 4.6.5 Spamassassin rule description updates

```
paster update-sa-rules /etc/baruwa/production.ini
```

Updates the Spamassassin rule descriptions in the database.

### 4.6.6 PDF reports

```
paster send-pdf-reports-ng /etc/baruwa/production.ini
```

Sends PDF reports by email. This command allows you to specify the report type [domain, user], report period [daily, weekly, monthly] and the number of days to report on. The following switches allow you to specify the options.

- `-t REPORT_TYPE, --report-type=REPORT_TYPE` Report type [user, domain]
- `-p REPORT_PERIOD, --report-period=REPORT_PERIOD` Report period [daily, weekly, monthly]
- `-d NUMBER_OF_DAYS, --number-of-days=NUMBER_OF_DAYS` Restrict to number of days
- `-i ORG_ID, --org-id=ORG_ID` Process only this organization's accounts
- `-e EXCLUDE_ORG, --excluded-org=EXCLUDE_ORG` Exclude this organization's accounts

### 4.6.7 Mail queue Stats updates

```
paster update-queue-stats /etc/baruwa/production.ini
```

Query the inbound and outbound queues and write stats to the database.

### 4.6.8 Delta search index updates

```
paster update-delta-index --index messages --realtime /etc/baruwa/production.ini  
paster update-delta-index --index archive /etc/baruwa/production.ini
```

The `messages` and `archive` index have deltas to ensure that indexing is efficient the above commands merge the delta index with the main index and remove id's from the realtime index that have been indexed to disk indexes.

The `messages` index has a real time index while `archive` does not.

### 4.6.9 Create an administrator account

```
paster create-admin-user -u USERNAME -p PASSWORD -e EMAIL -t TIMEZONE /etc/baruwa/production.ini
```

Create an administrator account

### 4.6.10 Change user password

```
paster change-user-password --username USERNAME /etc/baruwa/production.ini
```

Changes an accounts password, This is the only way to change an administrator account's password as it cannot be changed via the web interface.

### 4.6.11 Generate list of top spammers

```
paster send-top-spammer-list -e EMAIL [-m -s SPAMSCORE -p REPORT_PERIOD -d] /etc/baruwa/production.ini
```

Generates a list of top spammers and emails or displays it.

- `-e EMAIL, --email=EMAIL` Email address to send data to
- `-m, --include-message-count` Include the number messages received
- `-d, --dry-run` Print to stdout do not send email
- `-n NUM, --messages-sent=NUM` Return senders with message counts equal to or greater than
- `-s SPAMSCORE, --spam-score-threshold=SPAMSCORE` Count messages with spam scores equal to or greater than
- `-p REPORT_PERIOD, --report-period=REPORT_PERIOD` Report period [daily, weekly, monthly]

### 4.6.12 Generates list of clean senders

```
paster send-whitelist-data -e EMAIL [-m -s SPAMSCORE -p REPORT_PERIOD -d] /etc/baruwa/production.ini
```

Generates a list of top ham senders for whitelisting.

- `-e EMAIL, --email=EMAIL` Email address to send data to
- `-m, --include-message-count` Include the number messages received
- `-d, --dry-run` Print to stdout do not send email
- `-n NUM, --messages-sent=NUM` Return senders with message counts equal to or greater than
- `-s SPAMSCORE, --spam-score-threshold=SPAMSCORE` Count messages with spam scores equal to or greater than
- `-p REPORT_PERIOD, --report-period=REPORT_PERIOD` Report period [daily, weekly, monthly]

## 4.7 Languages supported

The following languages are currently supported. Adding a new language is a simple task which can be done using the online translation service: [Transifex](#) which is used to manage our translations.

- English
- French
- German
- Greek
- Catalan
- Chinese
- Dutch
- Bulgarian
- Czech
- Danish

- Hindi
- Indonesian
- Italian
- Norwegian
- Polish
- Portuguese
- Russian
- Spanish
- Swedish
- Thai
- Turkish
- Japanese
- Romanian
- Arabic
- Hebrew
- Finnish
- Korean
- Latvian
- Ukrainian
- Urdu
- Vietnamese
- Persian
- Afrikaans
- Burmese
- Hungarian
- Slovak
- Swahili

## 4.8 FAQ's

Answers to many common questions.

### 4.8.1 I think I've found a security problem! What should I do?

**Answer:** Email [security@baruwa.com](mailto:security@baruwa.com)

If you think you've found a security vulnerability with Baruwa, please send a message to [security@baruwa.com](mailto:security@baruwa.com). Do NOT post a bug report to our issue tracking system or disclose the issue on our mailing lists.



## 4.8.2 Can a user have multiple email addresses on a single account ?

**Answer:** Yes

You can add alias addresses to a users account. Domains using Active Directory authentication will have these auto populated from the groups and addresses in active directory.

Alias domain addresses are also auto created the first time a user logs in.

## 4.8.3 Can users use their current mail password to login to Baruwa ?

**Answer:** Yes

Setup external authentication with either POP3, IMAP, SMTP, LDAP and RADIUS / RSA SecurID.

## 4.8.4 Are there any restrictions on username format ?

**Answer:** No

However users that authenticate to external systems will have their email address automatically configured as their username locally.

## 4.8.5 Which operating systems are supported ?

**Answer:** CentOS, RHEL, SL, OL

Baruwa Enterprise supports both RPM and DEB based operating systems. The following operating systems are fully supported.

- RHEL 6
- CentOS 6
- Scientific Linux 6
- Oracle Linux 6

## 4.8.6 Which MTA does Baruwa Enterprise use ?

**Answer:** Exim

Baruwa Enterprise uses a customized version of the Exim MTA

# 4.9 Upgrading

## 4.9.1 2.0.2

### Upgrade Type

- Enhancement
- Bug fix

### Backward compatibility

This release introduces a backwards incompatible database schema change. The `UNIQUE INDEX` on the `message-id` field has been dropped to allow for duplicate message-id's to be supported. Duplicate message-id's may occur in high volume environments.

The template variables for the `messages/preview.html` and the `status/preview.html` templates have changed. The changes allow for the support of alternative message format display as well as displaying correctly formatted HTML messages. If you have customized your templates, you will need to review the new variable format and update your customized templates.

### New dependencies

- `cssutils`
- `pyzmail`

### New configuration options

None.

### Upgrading

Review the changelog for version `2.0.2` and read the updated documentation before you proceed with the upgrade.

Backup your current system:

```
tar cjvf /usr/local/src/baruwa-configs.tar.bz2 /etc/baruwa
```

Download and install the updated puppet toaster:

```
curl -O https://www.baruwa.com/downloads/puppet-toaster-latest.tar.bz2
tar xjvf puppet-toaster-latest.tar.bz2 -C /etc/puppet/
```

Modify the message-id index, you will need to supply the Baruwa PostgreSQL password:

```
psql -Ubaruwa baruwa
baruwa=> DROP INDEX ix_messages_messageid;
baruwa=> CREATE INDEX ix_messages_messageid ON messages(messageid);
```

Perform the upgrade:

```
yum upgrade -y
rm -rf /var/lib/baruwa/data/cache/*
rm -rf /var/lib/baruwa/data/sessions/*
rm -rf /var/lib/baruwa/data/templates/*
service uwsgi restart
service baruwa restart
puppet -v /etc/puppet/manifests/toasters/baruwa/$(hostname).pp
```

If you had customized your interface, then update the changed templates to use the new variables.

## 4.9.2 2.0.1

### Upgrade Type

- Security [Severity: Medium]
- Bug fix
- Enhancement

### Backward compatibility

This release does not introduce any backwards incompatible changes.

### New dependencies

- sqlparse

### New configuration options

- `ms.quarantine.shared` - Enables and disables shared quarantine features default: `disabled`
- `baruwa.themes.base` - Sets the directory containing themes default: `/usr/share/baruwa/themes`
- `baruwa.custom.name` - Sets the custom product name for rebranding default: `Baruwa Hosted`
- `baruwa.custom.url` - Sets the url for the product default: `http://www.baruwa.net/`

### Upgrading

Baruwa Enterprise Edition has switched from using the certificate authenticated repository to a Spacewalk managed entitlement system. In order to access the new system you need to install the Spacewalk client tools and obtain an activation key for your server entitlement.

Review the changelog for version *2.0.1* and read the updated documentation before you proceed with the upgrade.

Backup your current system:

```
tar cjvf /usr/local/src/baruwa-configs.tar.bz2 /etc/baruwa
tar cjvf /usr/local/src/baruwa-software.tar.bz2 /usr/lib/python2.6/site-packages/baruwa
```

When ready to perform the upgrade, have your activation key handy then run the following commands, replace `<activation-key>` with your actual activation key:

```
rpm -Uvh https://www.baruwa.com/downloads/baruwa-enterprise-release-6-2.noarch.rpm
rpm -Uvh http://yum.spacewalkproject.org/1.9/RHEL/6/x86_64/spacewalk-client-repo-1.9-1.el6.noarch.rpm
yum install rhn-client-tools rhn-check rhn-setup rhnsd m2crypto yum-rhn-plugin -y
rhnreg_ks --serverUrl=http://bn.baruwa.com/XMLRPC --activationkey=<activation-key>
```

Download and install the updated puppet toaster:

```
curl -O https://www.baruwa.com/downloads/puppet-toaster-latest.tar.bz2
tar xjvf puppet-toaster-latest.tar.bz2 -C /etc/puppet/
```

Review the new options available to the puppet manifest and add to your previous manifest, then run:

```
yum upgrade -y
rm -rf /var/lib/baruwa/data/cache/*
rm -rf /var/lib/baruwa/data/sessions/*
rm -rf /var/lib/baruwa/data/templates/*
service uwsgi restart
service baruwa restart
puppet -v /etc/puppet/manifests/toasters/baruwa/${hostname} .pp
```

If you had customized your interface, then follow the theming guidelines to create a theme that will not be overridden by your next update.

## 4.10 Changelog

### 4.10.1 2.0.2

- Fixed taskid session checks, which caused an exception when the session attribute did not exist.
- Fixed issue with headers which can not be decoded leading to exceptions
- Fixed issue with empty values breaking quarantine messages due to attempt to concat strings with None values.
- Added checks to prevent the creation of duplicate user accounts from external authentication mechanisms due to the case being different.
- Fixed the deletion of relay settings, which was causing an exception.
- Fixed accounts navigation issue, when paging using AJAX.
- Added support for custom logos in PDF reports, fixes issue #14.
- Fixed incorrect memory usage percentages in the status page.
- Improve daily totals calculation, it now supports users timezone settings.
- Fixed an exception with the Psutil backend which was not being caught.
- Added organization filters to the quarantine and pdf reports commands.
- Improvements to lost password handling, restrict requests to local users and fix the reset url.
- Added a top spammers generation command which can be used to export data to external or internal blacklists.
- Added a top clean senders generation command which can be used to export data to external or internal whitelists.
- Improvements to display all dates and times in users own timezone.
- Implemented JSON data exports to support JSON driven charts and graphs.
- Improvements to the search functions error handling.
- Improvements to the external authentication modules.
- Improvements to the message preview functionality, now able to display both the text and HTML alternatives of an email. HTML messages formatted correctly using embedded CSS styles which are sanitized.
- Added support for duplicate message id's which are generated on high mail volume installations.
- Various minor code cleanups and fixes.
- Updates to the documentation.

### 4.10.2 2.0.1

- Fixed domains information leak when logged in as domain admin. Domain admins were able to see domains belonging to other users in the drop down menu under edit or delete accounts.
- Added support for theming and customization. Included are support for Interface, email, reports customization as well as productization with a custom name.
- Added support for shared quarantines on shared storage which allows messages to be accessed even when the node that processed them is offline.
- Implemented full cluster functionality for all components
- Improvements to Active Directory / LDAP including support for address verification of alias domain accounts, import of aliases from LDAP servers that use the mail attribute such as OpenLDAP, fix case sensitivity issue with Active Directory servers.
- Fixed MailScanner SQL config keyword issue.
- Fixed duplicates of account listings when user belonged to more than one domain
- Fixed various issues that caused quarantine reports not to be sent to some user accounts.
- Fixed auto user logout when they delete their account.
- Improve the predicate matching system for authorization of actions.
- Fixed previewing of embedded images in emails.
- Fixed the searching of archives when did not display the actual messages found.
- Fixed signature processing on the nodes after configuration in the interface.
- Added experimental PDF reporting command with theme support
- Added experimental Quarantine reporting command with theme support
- Fix to various cronjobs like the ones pruning database tables.
- Disabled NJABL
- Updated translations

### 4.10.3 2.0.0

- Initial release



# USER GUIDE

## 5.1 Signing In and Signing Out

### 5.1.1 Signing In

To sign in to Baruwa, you enter your username and password and select the language to use if the auto detected language is not the one you prefer to use.

If you are signing in using external authentication such as your AD/LDAP or IMAP credentials then you need to provide the full username with the domain part included.

Your session will automatically timeout after 8 hours and you will have to login again.

### 5.1.2 Signing Out

To sign out click the Logout link on the top right corner of your screen.

Your session will automatically timeout after 8 hours and you will have to login again.

## 5.2 Changing Your Password

You can change your password if your account is setup to use local (internal) authentication.

If your account uses external authentication then use the system hosting your account credentials to change them.

### 5.2.1 Change a Known Password

While logged in.

1. Go to the Account page.
2. Click Change Password.
3. Enter your new password twice then your old password.
4. Click the Change Password button.

## 5.2.2 Reset a Forgotten Password

At the login page.

1. Click `Forgotten password ?`
2. Enter your email address, Click the `Reset my password Button`
3. Check your email, follow the instructions in the email

## 5.3 Personalizing Your Account

You can personalize various settings of your account using the account page.

### 5.3.1 Account names

You can change the First and Last name used to address you in any correspondence from Baruwa.

1. Go to the `Account page`
2. Click `Update Account`
3. Enter `First name and Last name`
4. Click the `Update account button`

### 5.3.2 Change Your Default Time Zone

By default your account uses the time zone setup for your domain by your domain administrator.

This option allows you change the time zone, All times in the Baruwa interface will be displayed in this time zone.

1. Go to the `Account page`
2. Click `Update Account`
3. In the `Timezone drop-down menu` select the time zone you want to use.
4. Click the `Update account button`

### 5.3.3 Enable or Disable reports

You can enable or disable reports using this option. Reports include your `daily quarantine report` and a `monthly usage report`.

1. Go to the `Account page`
2. Click `Update Account`
3. In the `Send reports checkbox`, select to enable, deselect to disable
4. Click the `Update account button`



### 5.3.4 Enable or Disable Spam Checks

You can choose to enable or disable Spam checks on messages destined to your account.

1. Go to the `Account` page
2. Click `Update Account`
3. In the `Enable spam checks` checkbox, select to enable, deselect to disable
4. Click the `Update account` button

### 5.3.5 Customize Spam scores

You can customize the scores at which messages are determined to be either Spam or definite Spam.

---

**Note:**

- The `Spam High score` must be higher than the `Spam low score`
- Setting `0.0` makes Baruwa use the Domain or system defaults.

- 
1. Go to the `Account` page
  2. Click `Update Account`
  3. In the `Spam low score` or `Spam high score` input, enter the score
  4. Click the `Update account` button

### 5.3.6 Add Email signatures/Disclaimers

Baruwa can manage email signatures / disclaimers that are added to messages that are sent outbound through it. Both HTML and Text signatures are supported. HTML signatures support a single embedded image.

A WYSIWG Editor is used to setup the HTML signatures and it allows you to upload images that you can embed in your HTML signature.

1. Go to the `Account` page
2. Click `Add signature`
3. Select `Signature type` from the drop down
4. Enter signature content
5. Ensure the `Enabled` checkbox is checked
6. Click the `Add signature` button

## 5.4 Messages

### 5.4.1 Most Recent Messages

When you login the default view you see is the most recent messages for your account. By default the latest 50 messages are shown.

If you want to change the number of recent messages displayed you can use the drop down select Show: items per page to do that.

The selected number will be displayed during your current session, when you logout the number will reset to 50.

### 5.4.2 Full message listing

If you want to see more then the most recent messages you should,

1. Mouse over Messages
2. Click Full message list
3. Use the pagination links to see more messages.

### 5.4.3 Quarantine

If you want to see only quarantined messages,

1. Mouse over Messages
2. Click Quarantine
3. Use the pagination links to see more messages.

You can carry out message operations on several messages from within this view. Refer to *Bulk Message Operations* for details.

### 5.4.4 Archived messages

If you want to see older archived messages,

1. Mouse over Messages
2. Click Archive
3. Use the pagination links to see more messages.

### 5.4.5 Message Details

If you want to see the details of any specific message click the link to the message.

The following information is available.

- Message ID
- From Address
- To Address
- Subject
- Received date and time (Displayed in your timezone)
- Received by server (The server that received the message)
- Received from (The server that sent the message)
- Received via (Servers that processed this message, includes country information)
- Size

- Message headers
- Quarantined
- Virus infected
- Prohibited file
- Other infection
- Spam checks information (Spam check results and rules used to make determination)
- Delivery information (Status of mail delivery to final destination)

If the message is quarantined you are able to preview, release, learn or delete the message. Refer to *Message operations* on how to do this.

You are also able to add the sender to an authorized or banned sender list from with this view using email address, domain name or IP address. Refer to *To add the sender to a list* on how to do this.

## 5.4.6 Message operations

The Baruwa interface allows you to preview, release, learn or delete quarantined messages and authorize or ban senders of messages using email address, domain name or IP address.

### Previewing a quarantined message

To preview a quarantined message,

1. Click the message link
2. Click Preview message
3. Click Attachments to download any attachments
4. Click Display images to display any remote images (This is not advisable)

### Releasing a quarantined message

To release a quarantined message,

1. Click the message link
2. Click Release message
3. Check Release checkbox
4. Enter Alt recipients if you want to send the message to another email address
5. Click the Submit Button

### Bayesian learning a message

You can update the Bayes system by teaching it if a message is Spam or Not Spam.

1. Click the message link
2. Go to the bottom of the page
3. Check Bayesian Learn checkbox

4. Select Spam or Clean from the drop down
5. Click the Submit Button

### Deleting a quarantined message

You can delete a message from the quarantine.

1. Click the message link
2. Go to the bottom of the page
3. Check Delete checkbox
4. Click the Submit Button

### 5.4.7 To add the sender to a list

1. Click Add sender to list
2. Select the type of list you want to add them to using the List type drop down
3. Check Add to aliases as well if you want it to apply to your aliases as well
4. Check Use IP address to use the IP address
5. Check Use Domain to list the whole domain
6. Click the Add to list button

### 5.4.8 Bulk Message Operations

It is possible to carry out message operations (release, learn or delete) on multiple messages at ago.

To do this.

1. Select the messages using the check box
2. Select the operations (release, learn or delete) at the top
3. Click the Process button
4. View the operations results

### 5.4.9 Filters

Message filters are available on the *Full message listing*, *Quarantine* and *Archived messages* pages.

Refer to *Manage Filters* on how to manage these filters.

## 5.5 Approved and Banned Sender Lists

Baruwa supports the use of Approved and Banned sender lists.

Addresses on your approved sender list will skip all spam checks allowing their emails to always get delivered to you.

Addresses on your banned sender list will have their messages to you rejected.

### 5.5.1 Adding addresses to lists

1. Mouse over `Lists`
2. Click `Add to List`
3. Enter the address can be an `Email Address`, `Domain Name` or `IP address`
4. Select the list type from the `List type` drop down menu
5. Check `Add to aliases` as well if you want it added to your aliases
6. Click the `Add to list` button

### 5.5.2 Deleting addresses from lists

1. Mouse over `Lists`
2. Click either `Approved senders` or `Banned senders`
3. Find the address
4. Click the red `x` under the action column

## 5.6 Reports

The reports view allows you to run a set of predefined reports. The following reports are available.

### 5.6.1 Available reports

- Top Senders by Quantity
- Top Senders by Volume
- Top Sender Domains by Quantity
- Top Sender Domains by Volume
- Spam Score Distribution
- Top Mail hosts
- Top Recipients by Quantity
- Top Recipients by Volume
- Message Totals

You can use `filters` to filter the results available in your report. These `filters` can be saved for later reuse. Refer to [Manage Filters](#) for details.

Reports are exportable, and can be exported as PDF or CSV. Refer to [Export report](#) for details on how to export a report.

## 5.6.2 Export report

### Export report to PDF

1. Click report link
2. Click Download PDF

### Export report to CSV

1. Click report link
2. Click Download CSV

## 5.6.3 Manage Filters

A filter rule consists of one message property and one condition. If the message matches the property and condition it is selected.

### Filter properties

The following properties are available to filter messages on.

- Message ID
- Message size
- From Address
- From Domain
- To Address
- To Domain
- Subject
- Received from
- Was scanned
- Is Spam
- Is Definite spam
- Is RBL listed
- Is approved sender
- Is banned sender
- Spam score
- Spam report
- Is virus infected
- Is name infected
- Is other infected
- Date

- Time
- Headers
- Is quarantined
- Processed by host

### Filter conditions

Different properties support different conditions. The conditions supported by a specific property will automatically be selected when you select the property.

The following conditions are available.

- is equal to
- is not equal to
- is greater than
- is less than
- contains
- does not contain
- matches regex
- does not match regex
- is null
- is not null
- is true
- is false

### Setting Up Filter Rules

1. Go to the `Reports` page Or within the *Full message listing*, *Quarantine* and *Archived messages* pages.
2. Select the property from the first drop down menu
3. Select the condition
4. Enter condition text if the condition requires one
5. Click `Add filter`

### Saving Filter Rules

1. Go to the `Reports` page
2. Select the filter rule under `Active Filter(s)`
3. Click `Save`

## Deleting a saved Filter Rule

1. Go to the `Reports` page
2. Select the filter rule under `Saved Filter(s)`
3. Click `Delete`

## 5.7 Mail queues

Messages that are yet to be processed are kept in the `inbound queue`, messages that have been processed but are yet to be delivered are kept in the `outbound queue`.

The status of both the `inbound` and `outbound` mail queues is provided. The following actions can be performed on messages that are in the queues:

- Delivery
- Bounce
- Hold
- Delete
- Preview

You can access these mail queues by clicking the numbers next to `In :` and `Out :` at the top of your screen

### 5.7.1 Processing queued messages

#### Deliver a message in the outbound queue

Delivery only applies to messages that have already been processed by Baruwa, that is why only messages in the `outbound queue` can be delivered.

To deliver a message:

1. Click the number next to `Out :` at the top of your screen
2. Select the message
3. Scroll to the bottom of the screen
4. Select `Deliver`
5. Click the `Process` button

---

**Note:** Delivery is only possible if the destination server is up and accepting mail.

---

#### Delete a queued message

1. Click the number next to `In :` or `Out :` at the top of your screen
2. Select the message
3. Scroll to the bottom of the screen
4. Select `Delete`



5. Click the `Process` button

### Bounce a queued message

1. Click the number next to `In :` or `Out :` at the top of your screen
2. Select the message
3. Scroll to the bottom of the screen
4. Select `Bounce`
5. Click the `Process` button

### Hold a queued message

1. Click the number next to `Out :` at the top of your screen
2. Select the message
3. Scroll to the bottom of the screen
4. Select `Hold`
5. Click the `Process` button

### Preview a queued message

1. Click the number next to `In :` or `Out :` at the top of your screen
2. Select the message
3. Click `Preview message`

## 5.8 Baruwa Search Tips and Tricks

Baruwa supports many of the search tricks you use in popular web search engines.

### 5.8.1 Search with an exact phrase

To search for an exact phrase enclose the phrase in quotes `"Blocked message"`

### 5.8.2 Search for one or other

Use the pipe character `|` to separate the phrases `"Barrack Obama" | "Mike Tyson"`

### 5.8.3 Search using a wildcard

Use the star character `*` For example `boy*` will match `boy`, `boyfriend`

### 5.8.4 Search using the negate operator

`shaken !stirred` or `shaken -stirred` will match phrases with shaken but not shaken stirred

### 5.8.5 Search using grouping

`(red | green | blue) car` will match red car, green car or blue car

### 5.8.6 Search Specific fields

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**Note:** It is also possible to limit your search to specific fields, the field operators will be provided later.

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# SUPPORT

## 6.1 Free support

Email only support is available via the Enterprise edition support email address `enterprise-support (AT) baruwa.com`.

A mailing [list](#) also exists where you can discuss Enterprise edition related issues as well as ask for help and advise from fellow subscribers. The developers subscribe to and actively monitor this list.

## 6.2 Paid for support

Paid for support and consultancy services are available. All hands on or On device support which includes troubleshooting, investigation and resolution is only provided under paid for support.

Prepayment of an initial support fee is required before any hands on support tasks are carried out.

To request for paid support or to obtain our rate card, please email `enterprise (AT) baruwa.com`.