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# **openboxes-docs Documentation**

***Release 0.7.18***

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**Jan 18, 2020**



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OpenBoxes is an open-source supply chain management system designed to manage supplies and medications for healthcare facilities and disaster response operations.

Showing 1 - 10 of 465 results

<div><div><div></div></div></div>	<div><div></div></div>	Product code	Name	Manufacturer	Brand name	Manufacturer code	Qty +	Qty -	Qty
Drugs and pharmaceutical products (10)									
<div><div></div></div>	<div><div></div></div>	EM30	Abacavir sulfate, 20mg/mL, Oral solution, 240mL bottle	Aurobindo			0	0	0
<div><div></div></div>	<div><div></div></div>	EB12	Abacavir sulfate, 300mg, tablet	Aurobindo			0	0	180
<div><div></div></div>	<div><div></div></div>	XJ13	Acetazolamide, 250 mg, tablet	Micro Labs		10031	0	0	1000
<div><div></div></div>	<div><div></div></div>	HJ92	Acetylcysteine, 200 mg/mL (20 %), 10 mL ampoule	Aurum		10069	0	0	450
<div><div></div></div>	<div><div></div></div>	BG90	Acetylsalicylic acid, 100 mg, tablet	IDA		024500	0	0	5970
<div><div></div></div>	<div><div></div></div>	CH56	Acetylsalicylic acid, 100 mg, tablet	Nanjing Baijingyu Pharmaceuticals		10892	0	0	11550
<div><div></div></div>	<div><div></div></div>	EU48	Aciclovir, 200 mg, capsule	Mylan Pharmaceuticals, Inc.			0	0	15390
<div><div></div></div>	<div><div></div></div>	DC96	Aciclovir, 200 mg, tablet	IDA			0	0	0
<div><div></div></div>	<div><div></div></div>	PJ94	Aciclovir, 200 mg, tablet	Medopharm		34772	0	0	74700
<div><div></div></div>	<div><div></div></div>	ZU93	Aciclovir, 3% eye ointment, 4.5 gram tube	Galentic		10096	0	0	115

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Next

Results per page: 

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All



# CHAPTER 1

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## Getting Started

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## CHAPTER 2

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### Features

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### 3.1 Free, open-source software

- OpenBoxes is entirely free to use. This can be a significant advantage in the face of limited operational resources.

### 3.2 Inventory Visibility & Tracking

- Not only does OpenBoxes allow you to view your inventory at a glance, it provides a historical record of inventory transactions. This data is invaluable to accurately understand and forecast demand for future planning periods.
- OpenBoxes allows you to set inventory max, min, and reorder points — this allows the user to quickly assess if supplies are overstocked, at appropriate stock levels, or in danger of being out of stock if not reordered soon.
- OpenBoxes allows you to record the movement of goods from multiple sources and across different levels of the organization:
  - From central warehouses to your facility depot
  - From other hospital facilities to your facility depot
  - From vendor warehouses to your facility depot
  - From one warehouse to other warehouses within your network
  - From your facility depot to pharmacies and wards within your facility
- Record lot numbers for items that have an expiry date to help identify stock that has expired or is about to expire. Lot numbers also provide a means to locate stock when a manufacturer recalls a certain item.
- Record serial numbers for items that require lifecycle management (including assets such as computers, routers, hospital beds).
- Upload and manage documents for each product (e.g. data sheets, product manuals, hazardous material handling requirements).

### 3.3 Shipping Documents

- OpenBoxes offers the user the ability to produce Certificates of Donation, Packing Lists, and other documents required for shipping with just a few mouse clicks.
- Documents can also be uploaded to OpenBoxes to allow operational leadership to save all the relevant shipping documents to a particular shipment within the system.

### 3.4 Grant Compliance

- Certain grants require that inventory be tracked in very specific ways. Using OpenBoxes comprehensively would allow a site to account for the movement of goods bought with grant monies from vendor, to country, to facility — and the consumption of those items at a facility level.

### 3.5 Integration with Demand & Forecasting software

- While the OpenBoxes stock usage history can provide a high-level picture of future demand for any particular item, integrating with demand forecasting software will allow those processes to be automated and more accurate.

### 3.6 Integration with Data Replication software

- While OpenBoxes supports a hierarchy of locations, sometimes it's not possible for all locations to access a centralized server due to power and Internet limitations at that site. In this case, you can manage multiple server installations (a central OpenBoxes server for most locations with good Internet) and separate OB server for each location that does not have a reliable connection to the Internet. Using [SymmetricDS](#), you can bi-directionally sync all data changes between each of these servers.

While open-source software is free to download and use, there are costs and limitations that should be taken into consideration before you begin the adoption process.

#### 4.1 System Administration

An OpenBoxes installation requires a system administrator to install, monitor, maintain, and upgrade the software and server components throughout the software lifecycle. These tasks require competent IT personnel.

#### 4.2 Time

While OpenBoxes has been streamlined considerably since its creation, there may be significant time costs associated with using this inventory management system.

Examples of potentially time-intensive tasks include, but are not limited to:

- Master Data Management e.g. creating products to track within the system
- Periodic Reviews e.g. stock counts, min/max/reorder review, fast moving vs. obsolete inventory
- Data Entry e.g. recording and adjusting inventory
- Forecasting e.g. period review of demand/consumption data, disease incidence, population growth, service expansion within the hospital

#### 4.3 Training

While OpenBoxes is a relatively simple inventory management tool, some training is required to allow users to successfully utilize all of the functionality offered by the system.

## 4.4 Hospital-Centric

While OpenBoxes could be used by small-to-medium-sized enterprises (SME) in most industries, there are some limitations that might make it difficult to use:

- 1) OpenBoxes does not have a Sales Order feature yet. There's not an overwhelming need for such a feature within the hospital. For now, you can create a new location to represent a customer, generate a PO for that location (customer) against your facility depot, and fulfill that PO in order to approximate a Sales Order. This feature will eventually be implemented as pharmacists would like to generate a sales order when filling a prescription for a patient.
- 2) The Requisition feature (i.e. Pull Replenishment) which is used to move stock from a facility depot to a point-of-service location (e.g. ward, pharmacy) is primarily used within the depot. In other words, Requisitions are created by a warehouse manager within the hospital depot instead of by the requesting party (i.e. a nurse or pharmacist).

This was a decision made in order to save time and avoid the need for adding time-intensive processes for nurses and pharmacists. In the use case at Mirebalis Hospital, nurses and pharmacists will send a paper requisitions to the hospital depot, warehouse staff will enter the requisition into the system and proceed to fulfill that requisition. OpenBoxes will eventually have a point-of-service (POS) client for nurses and pharmacists to request stock from the depot, but that feature is not currently in development.

## 4.5 Static Role-based Authorization

The OpenBoxes authorization mechanism currently only provides three roles (Admin, Manager, and Browser). This limits the ability for an administrator to create roles based on fine-grained permissions. For example, all Manager users have the ability to perform CRUD actions (create, retrieve, update, delete) on most objects within the system. However, I cannot create a new role (e.g. Shift Manager) that allows a user to create a Product, but not a Purchase Order. A more fine-grained approach will be implemented in a future version of OpenBoxes.

## CHAPTER 5

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### Support

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If you have questions, concerns, or issues with the software, documentation, or anything else (excluding complaints about **POTUS**) contact our [Support Team](#) through the various support channels. Or save yourself the extra click and just email us at [support@openboxes.com](mailto:support@openboxes.com).





## 5.1 Community Support

### 5.1.1 Bug Reports & Feature Requests

You can file bug reports on our [GitHub issue tracker](#), and they will be addressed as soon as possible. **Support is a volunteer effort**, and there is no guaranteed response time.

If you need answers quickly, you can contact us about commercial support (see below).

### 5.1.2 Reporting Issues

When reporting a bug or requesting a feature, please include as much information as possible, including but not limited to:

- Summary
- Steps to reproduce
- Screenshot(s)

## 5.2 Commercial Support

We offer commercial support, hosting, and consulting. Please email us at [support@openboxes.com](mailto:support@openboxes.com) for more information.

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## CHAPTER 6

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### Release Notes

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See [GitHub](#) for [Release Notes](#).



## 7.1 Ubuntu 14.04

### 7.1.1 1. Watch the Video

**NOTE:** If the video does not render properly above you can [watch it directly on YouTube](#).

### 7.1.2 2. Choose a cloud provider

Here are a few options for cheapish cloud hosting providers.

- [RimuHosting](#) - Customizable VPS (~20/month)
- [Amazon Web Services EC2](#) - t2.small 2GB (~\$20/month)
- [Google Compute Engine](#) - g1-small 1.7GB (~\$20/month)
- [Digital Ocean droplet](#) - Droplet 2GB (\$20/month)
- [Linode](#) - Linode 2GB (\$10/month)

**NOTE:** AWS has a free-tier that includes a free year of 750 hours per month for t2.micro EC2 instances (as well as other services). It's a great deal if you're not going to be using OpenBoxes too heavily. Unfortunately, keeping a Java-based web application like OpenBoxes happy on a t2.micro (1GB of RAM) is not easy. You may need to reduce the heap size and perm generation memory allocated to Tomcat to something minimal (see step 5 for more details).

### 7.1.3 3. Install dependencies

#### Required

- Ubuntu 14.04 LTS (your cloud provider should allow you to choose this as the base image for your server)
- Tomcat 7 (`sudo apt-get install tomcat7`)

- MySQL 5.5+ (sudo apt-get install mysql-server)
- JRE 7 (sudo apt-get install openjdk-7-jre)

### Optional dependencies

- SMTP Server (runs over localhost:25 by default)
- Chrome Browser (currently using Version 29.0.1547.57)

## 7.1.4 4. Create database

```
$ mysql -u root -p -e 'create database openboxes default charset utf8;'
```

### Grant permissions to new new database user

```
mysql -u root -p -e 'grant all on openboxes.* to 'openboxes'@'localhost' identified_↵  
↵by "<password>";'
```

NOTE: For security reasons, you will want to set a decent password. These values should be used in the `dataSource.username` and `dataSource.password` configuration properties in `openboxes-config.properties`.

## 7.1.5 5. Configure application properties

Download the sample external configuration properties file (`openboxes-config.properties`) and save it under `/usr/share/tomcat7/.grails/openboxes-config.properties`.

**REMINDER:** Change `dataSource.password` to the password you set in the `grant all` command above.

Here's another example of the `openboxes-config.properties` file:

```
# Database connection settings  
dataSource.username=openboxes  
dataSource.password=<password>  
  
# Example of a simple JDBC URL (not to be used in production)  
dataSource.url=jdbc:mysql://localhost:3306/openboxes  
  
# Example of a more complex JDBC URL (used in our ccurent production environment)  
#dataSource.url=jdbc:mysql://localhost:3306/openboxes?autoReconnect=true&  
↵zeroDateTimeBehavior=convertToNull&sessionVariables=storage_engine=InnoDB  
  
# Used primarily with g:link when absoluteUrl is true (e.g. links in emails)  
grails.serverURL=http://localhost:8080/openboxes  
  
# OpenBoxes mail settings - disabled by default (unless you set up an SMTP server)  
grails.mail.enabled=false  
  
# SMTP error appender type  
mail.error.appender=dynamic  
  
# Miscellaneous application settings  
inventoryBrowser.quickCategories=ARVs,MEDICAL SUPPLIES,FOOD,EQUIPMENT,MEDICINE
```

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```
# The following property seems to be causing issues, so comment it out to use the_
↪system default
#openboxes.loginLocation.requiredActivities = ["MANAGE_INVENTORY"]

# Google Product Search
#google.api.key=<Google API key>

# Hipaaspace.com API (NDC Lookup)
#hipaaspace.api.key=<hipaaspace API key>

# RXNorm API
#rxnorm.api.key=<RxNorm API key>

# Google analytics
#google.analytics.enabled = false
#google.analytics.webPropertyID = <Google Analytics Key>
```

NOTE: Documentation for each available configuration will be provided in the Configuration section.

## 7.1.6 6. Configure Tomcat

You will likely encounter OutOfMemoryErrors with Tomcat's default memory settings. Therefore, I usually add a file (/usr/share/tomcat7/bin/setenv.sh) that is invoked by the Tomcat startup script and is used to control the amount of memory allocated to your instance of Tomcat.

A basic setenv.sh script will look like this:

```
export CATALINA_OPTS="$CATALINA_OPTS -server -Xms512m -Xmx1024m -XX:MaxPermSize=256m -
↪Djava.security.egd=file:/dev/./urandom"
```

Make the script executable.

```
$ sudo chmod +x /usr/share/tomcat7/bin/setenv.sh
```

You may be able to get away with using 256m as the max heap size, but 512m is a good setting, even for production environments. Using more memory will allow you to cache more data, but does not always result in a better performing application. So there's no need in getting carried away. We've been using about 1024m in production for over a year and that suits us fine.

If you are in a limited memory environment (like an EC2 t2.micro which only has 1GB of memory) you will need to tune these command line arguments a little more.

```
export CATALINA_OPTS="$CATALINA_OPTS -Xms128m -Xmx256m -XX:MaxPermSize=128m -Djava.
↪security.egd=file:/dev/./urandom"
```

Unfortunately you will probably run into several types of memory issues when running OpenBoxes in a short amount of memory. Here are a few examples to look out for.

### Java OutOfMemoryError

The following errors are related to the -Xms (min heap), -Xmx (max heap) , and -XX:MaxPermSize=256m (max perm gen space) memory settings. These errors indicate that the heap / permgen memory spaces are not allocated appropriately and/or there's a memory leak in the application.

- Heap space (OutOfMemoryError: Java heap space)

- PermGen (OutOfMemoryError: PermGen space)

See [this article] (<https://plumbr.eu/outofmemoryerror/java-heap-space>) for a good description of the problem. Contact [support@openboxes.com](mailto:support@openboxes.com) if you have further questions.

### Out of Memory: Killed process 31088 (java)

In this case, the Linux kernel has killed your Tomcat instance because it over stepped the OS bounds on memory. At this point, you may have increased the max heap size as much as you can. This probably means you need to upgrade to a larger instance type (i.e. as we mentioned above, an instance type that has 2GB of memory is a good start).

## 7.1.7 7. Deploy the application to Tomcat

### Stop tomcat

```
$ sudo service tomcat7 stop
```

### Download latest release

- Go to the the [latest release](#) page on GitHub.
- Download the WAR file (`openboxes.war`) associated with the latest release.

If you wanted to do this from the shell use `wget` with the following URL to get the latest WAR file.

```
$ wget https://github.com/openboxes/openboxes/releases/download/<version>/openboxes.  
↪war
```

### Copy WAR file to Tomcat

```
$ sudo cp openboxes.war /var/lib/tomcat7/webapps/openboxes.war
```

NOTE: If you'd like to deploy the application to the root context (to avoid having `/openboxes`) in every URL, you can copy the

```
$ sudo cp openboxes.war /var/lib/tomcat7/webapps/ROOT.war
```

### Restart Tomcat

```
$ sudo service tomcat7 start
```

### Tail Tomcat logs

Keep an eye out for any errors/exceptions that pop up in the `catalina.out` log file.

```
$ tail -f /var/log/tomcat7/catalina.out
```



## 7.2 Mac OS

### 7.2.1 Looking to contribute?

We would love if someone with a Mac could create a pull request to add installation instructions for the Mac.

## 7.3 Windows

### 7.3.1 Looking to contribute?

We would love for someone running Windows to create a pull request to add installation instructions for Windows.

## 7.4 Supported Platforms

- Ubuntu 14.04 (recommended)
- Mac 10.6+
- Windows (whatever)

## 7.5 System Requirements

- Java 7 (required)
- Tomcat 7 or 8 (required)
- MySQL 5.5+ (required)
- SMTP server (optional)
- Chrome or Firefox (required)

## 7.6 Basic Instructions

1. Install pre-requisites
2. Download latest release
3. Create new database in MySQL
4. Grant permissions to new database user
5. Configure runtime properties (openboxes-config.properties)
6. Copy WAR file to Tomcat
7. Configure Tomcat
8. Start Tomcat
9. Watch the Tomcat logs during startup
10. Open application using Chrome browser



## 8.1 Configuration file location

As mentioned in the installation instructions, you can override application configuration properties by creating a file called `$USER_HOME/.grails/openboxes-config.properties`. If you are a developer, `$USER_HOME` should resolve to your home directory (e.g. `/home/jmiranda` on Ubuntu). If you are deploying the application to Tomcat, the file is usually located under the `TOMCAT_HOME/.grails/openboxes-config.properties`.

If you are having trouble locating where the application is looking for the file you can determine the path by deploying the application to Tomcat and checking the log file. The first few lines of the Tomcat catalina.out file display the path(s) being used. You can safely ignore the “Unable to load specified config location” for the locations that you are not using. Notice below that there are 4 configuration locations and only 3 Unable to load specified config location lines. That means that there was a file found at one of the locations (namely, `file:/usr/local/tomcat6/.grails/openboxes-config.properties`).

```
INFO: Deploying web application archive openboxes.war
Using configuration locations [classpath:openboxes-config.groovy, classpath:openboxes-
↳config.properties,
file:/usr/local/tomcat6/.grails/openboxes-config.groovy, file:/usr/local/tomcat6/.
↳grails/openboxes-
config.properties] [staging]
Unable to load specified config location classpath:openboxes-config.groovy : class_
↳path resource
[openboxes-config.groovy] cannot be opened because it does not exist
Unable to load specified config location classpath:openboxes-config.properties :_
↳class path resource
[openboxes-config.properties] cannot be opened because it does not exist
Unable to load specified config location file:/usr/local/tomcat6/.grails/openboxes-
↳config.groovy :
/usr/local/tomcat6/.grails/openboxes-config.groovy (No such file or directory)
```

## 8.2 Configuration properties

### 8.2.1 Database connection properties

Setting	Required	Description
<code>dataSource.url</code>	Yes	JDBC connection string
<code>dataSource.username</code>	Yes	JDBC username
<code>dataSource.password</code>	Yes	JDBC password

#### Example

```
dataSource.url=jdbc:mysql://localhost:3306/openboxes
dataSource.username=<username>
dataSource.password=<password>
```

### 8.2.2 Application properties

Setting	Re- quired	Description
<code>openboxes.signup.defaultRoles</code>	No	Used to specify default roles assigned to newly registered users (implies automatic activation). Should only be used in cases where you either trust your registered users e.g. app is running on local LAN or you don't care who is allowed to access your server (e.g. a demo server).
<code>openboxes.system.defaultTimezone</code>	No	Not currently supported

`openboxes.system.defaultTimezone` | No | Not currently supported |

#### Example

```
#openboxes.fixtures.enabled=false
openboxes.signup.defaultRoles=ROLE_MANAGER,ROLE_ASSISTANT
openboxes.system.defaultTimezone=America/Chicago
```

### 8.2.3 Email Configuration

#### Default

The default email configuration properties.

```
grails.mail.host=localhost
grails.mail.port=25
```

## Mandrill

Add the following properties if you want to use a service like Mandrill as your SMTP server.

```
grails.mail.enabled=true
grails.mail.debug=true
grails.mail.from=<from-email>
grails.mail.host=smtp.mandrillapp.com
grails.mail.port=587
grails.mail.username=<username>
grails.mail.password=<password>
```

## GMail

Add the following properties if you want to use Gmail as your SMTP server.

```
grails.mail.enabled=true
grails.mail.debug=true
grails.mail.from=<from-email>
grails.mail.host=smtp.gmail.com
grails.mail.port=465
grails.mail.username=<your-username>
grails.mail.password=<password-generated-from-google-accounts>
grails.mail.props = ["mail.smtp.auth":"true", "mail.smtp.socketFactory.port":"465",
↪ "mail.smtp.socketFactory.class":"javax.net.ssl.SSLSocketFactory", "mail.smtp.
↪ socketFactory.fallback":"false"]
```

NOTE: I have not been able to able to get the Gmail configuration to work, but I'm sure someone with more time and intelligence will have no trouble figuring it out.

### 8.2.4 Identifier Formats

You can configure all of the identifiers according to your specifications (N = Numeric, L = Letter, A = Alphanumeric). The default configuration looks like the following, but feel free to configure identifiers however you'd like. Once the format has been chosen, values for these identifiers are randomly generated when an item is created. There's also a Quartz process that runs in the background that generates a unique identifier for any object that does not currently have one.

```
openboxes.identifier.order.format = NNNLLL
openboxes.identifier.product.format = LLNN
openboxes.identifier.requisition.format = NNNLLL
openboxes.identifier.shipment.format = NNNLLL
openboxes.identifier.transaction.format = AAA-AAA-AAA
```

## 8.3 Configuration Example (openboxes-config.properties)

This is an example configuration file.

```
# Database connection settings
dataSource.url=jdbc:mysql://localhost:3306/openboxes
dataSource.username=openboxes
dataSource.password=openboxes
```

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```

# OpenBoxes administrator emails
openboxes.admin.email=justin.miranda@gmail.com,jmiranda@pih.org

# Only used on local machines when dataSource.url is overridden
openboxes.fixtures.enabled=false

# OpenBoxes Identifier Formats
# N: Numeric, L: Letter, A: Alphanumeric
# For example, NNNLLL might lead to the following random identifier being generated
↳123ABC.
openboxes.identifier.order.format = NNNLLL
openboxes.identifier.product.format = LLNN
openboxes.identifier.requisition.format = NNNLLL
openboxes.identifier.shipment.format = NNNLLL
openboxes.identifier.transaction.format = AAA-AAA-AAA

# OpenBoxes Identifier Characters
openboxes.identifier.numeric = 0123456789
openboxes.identifier.alphabetic = ABCDEFGHJKLMNPQRSTUVWXYZ
openboxes.identifier.alphanumeric = 0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ

# Report logo header (not supported yet)
# openboxes.report.header.logo = file:///home/jmiranda/Desktop/images.jpg
openboxes.report.header.logo = http://localhost:8080/openboxes/images/hands.jpg
openboxes.report.header.title = OpenBoxes

# OpenBoxes Error Email feature (bug report)
# Use your own address if you want to handle bug reports yourself. Otherwise leave as-
↳is and OpenBoxes
# support these support requests.
openboxes.mail.errors.enabled = true
openboxes.mail.errors.recipients = support@openboxes.com

# OpenBoxes Barcode Scanner detection
# NOTE: This feature is an experimentation. If enabled you can scan barcode on any
↳page and the app will
# try to locate an object (product, shipment, etc) that is associated with that
↳barcode. If an object is
# found, the app just redirects to the details page for that database object. In the
↳future, I'm hoping to
# improve the barcode scanner to integrate with workflows (e.g. add item to purchase
↳order).
openboxes.scannerDetection.enabled = true

# Used to specify default roles for newly registered users (implies automatic
↳activation)
#openboxes.signup.defaultRoles=ROLE_MANAGER,ROLE_ASSISTANT

# General mail settings
grails.mail.enabled=true
grails.mail.host=<smtp server>
grails.mail.port=<smtp port>
grails.mail.username=<username>
grails.mail.password=<password>
grails.mail.from=<from address>

```

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```

# Example of general mail settings
#grails.mail.default.from=username@gmail.com
#grails.mail.host=smtp.gmail.com
#grails.mail.port=465
#grails.mail.username=username@gmail.com
#grails.mail.password=password
#grails.mail.props = ["mail.smtp.auth":"true", "mail.smtp.socketFactory.port":"465",
↳ "mail.smtp.socketFactory.class":"javax.net.ssl.SSLSocketFactory", "mail.smtp.
↳ socketFactory.fallback":"false"]

# Error email properties
mail.error.debug=true
mail.error.server=<smtp server>
mail.error.username=<smtp username>
mail.error.password=<smtp password>
mail.error.port=<smtp port>
mail.error.to=<to address>

# Example of error email properties
#mail.error.server=localhost
#mail.error.server=smtp.pih.org
#mail.error.username=openboxes
#mail.error.password=password
#mail.error.to=justin.miranda@gmail.com
#Possible values: default/dynamic/alternate
mail.error.appender=dynamic

# OpenBoxes > Choose Location > Required Activities
# The supported activities required in order for a location a location to show up on
↳ Choose Location page.
# Possible values: MANAGE_INVENTORY, PLACE_ORDER, PLACE_REQUEST, FULFILL_ORDER,
↳ FULFILL_REQUEST, SEND_STOCK, RECEIVE_STOCK, EXTERNAL
openboxes.chooseLocation.requiredActivities = MANAGE_INVENTORY

# Amazon web service (not supported yet)
aws.s3.domain=s3.amazonaws.com
aws.s3.accessKey=0123456789ABCDEFGH
aws.s3.secretKey=0123456789ABCDEFGHIJKLMNQPORS
aws.s3.bucketName=files

# Google Product Search (no longer supported -- Google deprecated API)
# URL: https://www.googleapis.com/shopping/search/v1/public/products?key=${google.
↳ productSearch.key}&country=US&q=${q}&alt=scp&crowdBy=brand:1
google.api.key=<no longer supported>

# Hipaaspace.com NDC Lookup (not supported yet)
hipaaspace.api.key=<not supported yet>

# RXNorm (not supported yet)
# URL: http://rxnav.nlm.nih.gov/REST/
rxnorm.api.key=<not supported yet>

# Google analytics
google.analytics.enabled = false
google.analytics.webPropertyID = <enter your google analytics property ID>

```





## CHAPTER 9

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### User Guide

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Please be patient as our documentation expert (a.k.a our lead developer) is busy making the software not suck so he's had some trouble finding time to update these guides. If you would like to contribute to this User Guide, please refer to the *Contributing* section of the Developer Guide.

If you would prefer to submit documentation updates as Word docs or collaborate with us using Google Docs, please share the docs or links with our Support Team [support@openboxes.com](mailto:support@openboxes.com).

If you're impatient, not good at words & stuff, and/or would prefer to see User Guide completed pronto, please feel free to light a fire under our documentation expert. The most effective way to do that would be to shame him through any of the public support channels (i.e. Twitter, Slack, Google Groups, highway billboards, etc).



## 10.1 Getting Started

### 10.1.1 Dependencies

#### Required

- Java 7
- MySQL 5.5+
- [SDK Man] (<http://sdkman.io/install.html>)
- Grails 1.3.9

NOTE: We are in the process of upgrading to Grails 2.5.5 ([see this feature branch](#)). Once that is complete you will be able to use Java 8.

#### Optional, but recommended

- [IntelliJ IDEA] (<https://www.jetbrains.com/idea/download/>)

### 10.1.2 Instructions

These instructions are for developers only. If you are a system administrator looking to install OpenBoxes on your own server, please check out our [Installation](#) page.

#### 1. Install Dependencies

Install dependencies above

```
sudo apt-get install openjdk7
sudo apt-get install mysql-server
```

## 2. Install Grails

Check that you have SDK Man installed properly (otherwise follow instructions on the skdman install page).

```
$ sdk version
SDKMAN 3.1.0
```

To install Grails 1.3.9

```
$ sdk install grails 1.3.9
```

## 3. Clone repository

If you are a core contributor:

```
git clone git@github.com:openboxes/openboxes.git
```

If you are a not core contributor, fork the [openboxes GitHub repository](#), then replace git url with the one of your forked repository

```
git clone git@github.com:<username>/openboxes.git
```

## 4. Create database

Create openboxes database

```
mysql -u root -p -e 'create database openboxes default charset utf8;'
```

Create openboxes user

```
mysql -u root -p -e 'grant all on openboxes.* to "openboxes"@"localhost" identified_
↳by "openboxes";'
```

## 5. Create configuration file(s)

Create or edit a file called `$HOME/.grails/openboxes-config.properties`.

```
# Database connection settings
# You can use dataSource.url when you are using a non-dev/non-test database (test-app_
↳may not run properly).
# If you want to run $ grails test-app you should comment out the dataSource.url_
↳below and create a new
# openboxes_test database. Eventually, we will move to an in-memory H2 database for_
↳testing, but we're
# currently stuck with MySQL because I'm using some MySQL-specific statements in the_
↳Liquibase changesets. My bad.
dataSource.url=jdbc:mysql://localhost:3306/openboxes?autoReconnect=true&
↳zeroDateTimeBehavior=convertToNull&sessionVariables=storage_engine=InnoDB
```

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```

dataSource.username=openboxes
dataSource.password=openboxes

# OpenBoxes mail settings - disabled by default
grails.mail.enabled=false

# OpenBoxes > Inventory Browser > Quick categories
#openboxes.inventoryBrowser.quickCategories=ARVs,MEDICAL SUPPLIES,FOOD,EQUIPMENT,
↳MEDICINE

# OpenBoxes > Choose Location > Required Activities
# The supported activities required in order for a location a location to show up on
↳Choose Location page.
# Possible values: MANAGE_INVENTORY, PLACE_ORDER, PLACE_REQUEST, FULFILL_ORDER,
↳FULFILL_REQUEST, SEND_STOCK, RECEIVE_STOCK, EXTERNAL
#openboxes.chooseLocation.requiredActivities = MANAGE_INVENTORY

# If you wish to not set up any test data, you can indicate this per the below
# (eg. if you are running from a copy of a production db)
# openboxes.fixtures.enabled=false

# If you want to track users via Google analytics
#google.analytics.enabled = false
#google.analytics.webPropertyID = <Google Analytics Key>

```

**NOTE:** If you are running in development mode with a copy of an existing database, you may want to instruct the application to bypass the test data fixtures automatically. You can achieve this by commenting out the `openboxes.fixtures.enabled` property. Unfortunately, the `.properties` files DO NOT deal well with boolean values so commenting out is the only way to set this property. If you want a more elegant approach, you can add all boolean properties to `openboxes-config.groovy`.

```
#openboxes.fixtures.enabled=true
```

## 6. Grails Upgrade or Grails Compile

Either of the following actions (upgrade, compile, run-app) should generate the all important Spring configuration (`/WEB-INF/applicationContext.xml`) and start the dependency resolution process.

```
grails upgrade
```

OR

```
grails compile
```

The `grails compile` step is not necessary since `grails run-app` will invoke the compilation step, but it doesn't hurt anything.

If you see any errors, run the command again.

**IMPORTANT** That last line is important. Because of some quirkiness with the way older versions of Grails resolve dependencies and generates config files, you may need to run either of these commands multiple times in order to resolve all dependencies and generate the config files.

Once the dependency resolution phase has completed, all dependencies will be stored in a local ivy cache (usually under `$USER_HOME/.grails/ivy-cache`). You do not have to worry about this, just know that the dependen-

cies are now on your machine and Grails will attempt to find them there before it tries to resolve them in a remote repository.

## 7. Start application in development mode

The application can be run in development mode. This starts the application running in an instance of Tomcat within the Grails console. You may need to run ‘grails run-app’ several times in order to download all dependencies.

```
grails run-app
```

## 8. Open application in Google Chrome

```
http://localhost:8080/openboxes
```

## 9. Log into OpenBoxes

You can use the default accounts (manager:password OR admin:password). Once you are logged in as an admin, you can create own account. Or you can use the signup form to create a new account.

# 10.2 Contributing

There are many ways to contribute to OpenBoxes, and not just through making changes to the source code. Here are a few examples of areas we need a considerable amount of help.

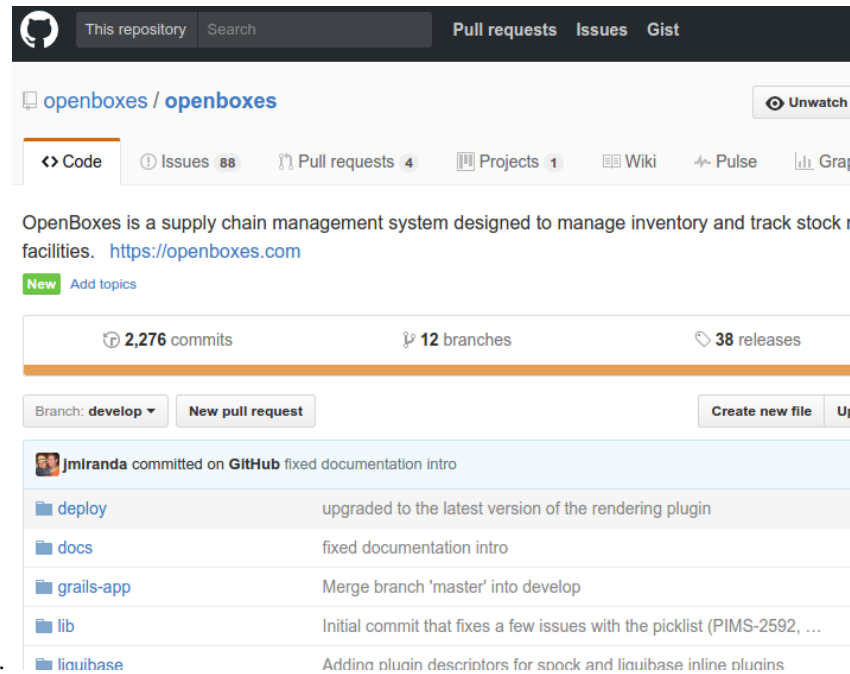
- Develop a new feature
- Patch a bug / hotfix
- Improve translations
- Improve documentation
- Write unit, integration, functional tests

## 10.2.1 Resources

- [GitHub Guide on Forking](#)

## 10.2.2 Procedure

1. Find or create an issue for the feature or bug in [GitHub Issues](#).



2. Fork the [openboxes/openboxes](#) GitHub repository.
3. Create a branch for your changes (create a hotfix for bugs if working off master or a feature branch for features if working off develop). **NOTE:** The use of the hotfix or develop prefix will help us identify which branch we need to merge your changes into.

```
git checkout -b hotfix/123-short-summary-of-issue
git checkout -b feature/123-short-summary-of-issue
```

4. Implement your feature or hotfix in your new branch.
5. Write a test for your changes (if you have trouble with this step please comment in your ticket that you'd like some help). **NOTE:** Tests are required for features and bug fixes, but not for documentation and translation changes.
6. Run tests.

```
grails test-app unit:
grails test-app integration:
```

7. Commit your changes

```
git commit -m "Implemented feature #123"
```

8. Push to your fork.

```
git push
```

9. Submit a pull request.

## 10.3 Syncing your fork

### 10.3.1 Resources

- [Configuring a Remote for a Fork](#)

- Syncing a Fork

### 10.3.2 List your remote repositories

```
$ git remote -v
origin  https://github.com/YOUR_USERNAME/openboxes.git (fetch)
origin  https://github.com/YOUR_USERNAME/openboxes.git (push)
```

### 10.3.3 Add the upstream remote

```
$ git remote add upstream https://github.com/openboxes/openboxes.git
```

### 10.3.4 Verify upstream remote

```
$ git remote -v
origin      https://github.com/YOUR_USERNAME/YOUR_FORK.git (fetch)
origin      https://github.com/YOUR_USERNAME/YOUR_FORK.git (push)
upstream    https://github.com/ORIGINAL_OWNER/ORIGINAL_REPOSITORY.git (fetch)
upstream    https://github.com/ORIGINAL_OWNER/ORIGINAL_REPOSITORY.git (push)
```

### 10.3.5 Pull changes into your fork as upstream/master

```
$ git fetch upstream
remote: Counting objects: 4165, done.
remote: Compressing objects: 100% (22/22), done.
remote: Total 4165 (delta 1920), reused 1928 (delta 1918), pack-reused 2225
Receiving objects: 100% (4165/4165), 1.83 MiB | 329.00 KiB/s, done.
Resolving deltas: 100% (2728/2728), completed with 583 local objects.
From https://github.com/openboxes/openboxes
 * [new branch]      develop      -> upstream/develop
 * [new branch]      feature/94-upgrade-to-grails-2.5.x -> upstream/feature/94-
↪ upgrade-to-grails-2.5.x
 * [new branch]      hotfix/100-improve-performance-qoh-calculation -> upstream/
↪ hotfix/100-improve-performance-qoh-calculation
 * [new branch]      hotfix/161-support-additional-languages -> upstream/hotfix/161-
↪ support-additional-languages
 * [new branch]      hotfix/163-add-health-endpoint-for-monitoring -> upstream/hotfix/
↪ 163-add-health-endpoint-for-monitoring
 * [new branch]      hotfix/165-replace-inventory-with-adjustment -> upstream/hotfix/
↪ 165-replace-inventory-with-adjustment
 * [new branch]      hotfix/22-override-grails-config-locations -> upstream/hotfix/22-
↪ override-grails-config-locations
 * [new branch]      master       -> upstream/master
 * [new branch]      user-guide-docs -> upstream/user-guide-docs
```

### 10.3.6 Checkout the branch you want to sync

This will likely either be `develop` or `master`.



```
$ git checkout master
```

### 10.3.7 Merge upstream/master into you local master

```
$ git merge upstream/master
```

### 10.3.8 Push changes up to your repository

```
$ git push
```

### 10.3.9 Profit

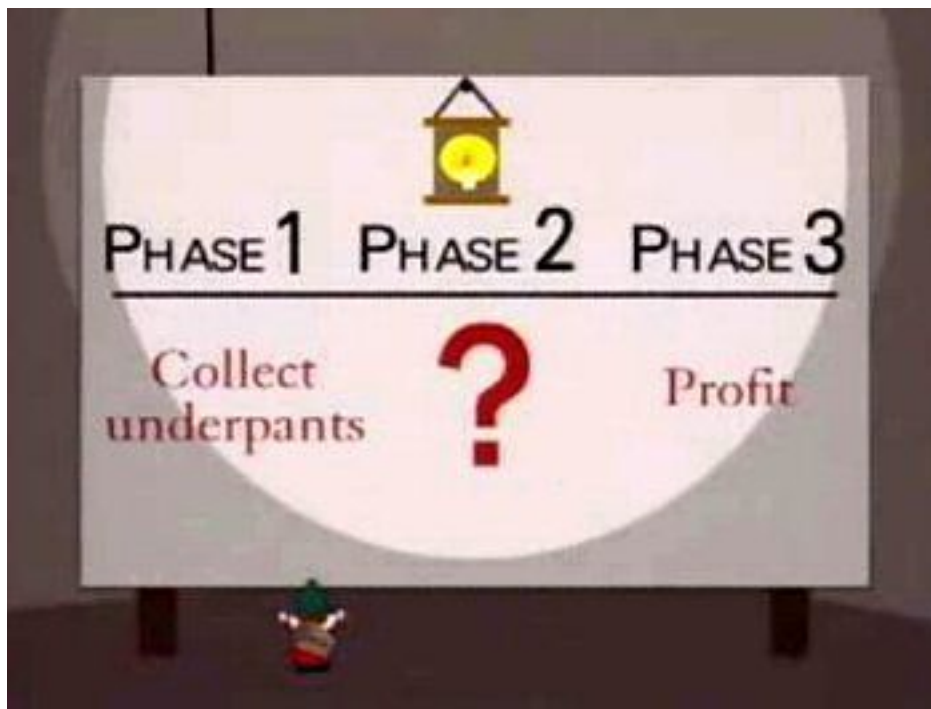


Fig. 1: Profit

## 10.4 Tagging a release

### 10.4.1 Find the current build number in the footer of the page for the desired version of the application:

```
Build Number: v0.5.0-329-gc1b3544
```

In this case, the tag v0.5.0 is out-of-date, so we want to update this to v0.5.1. We first need to find the commit related to this build number (e.g. c1b3544). You can view the commit log to view the history or you might need to browse through old commits on github to double check that it's correct.

```
$ git log --pretty=oneline | grep c1b3544
```

### 10.4.2 Create tag release

Once you've determined that this is the correct commit and you're ready to create a new tag, run the following command:

```
$ git tag -a v0.5.1 -m 'Release 0.5.1' c1b3544
```

### 10.4.3 Push tags to git remote repo

Then you can push this (and all other tags) to your repository to share:

```
$ git push --tags
```

### 10.4.4 Additional reading

See the following article for more informaton <http://git-scm.com/book/en/Git-Basics-Tagging>

## 10.5 Troubleshooting

### 10.5.1 Could not open ServletContext resource [/WEB-INF/applicationContext.xml]

#### Problem

```
Caused by: java.io.FileNotFoundException: Could not open ServletContext resource [/WEB-INF/applicationContext.xml]
```

#### Solution

Execute the grails upgrade command in order to generate the files nece

```
$ grails upgrade
```

See the following stackoverflow article: <http://stackoverflow.com/questions/24243027/grails-spring-security-sample-application-not-working>