

## HOW-TO INSTALL KOHA3 ON FEDORA 9

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Version 1.0, released Jan 6th 2009  
Source: <http://krishnanm.com/khh/>

### About this HOW-TO

These instructions (available in both .pdf and .txt formats, use the .txt format for commands that are not 'word-wrapped') are intended for installing Fedora 9 and Koha 3.0 on 'generic' PC hardware in 'disconnected' mode. In other words, no internet access is needed or assumed, and all necessary software has been provided on accompanying media.

At the end of these instructions, you'll have a Fedora 9 server and Koha 3 installed and running on it.

### DISCLAIMER and KNOWN ISSUES

- 1) This does \*NOT\* cover file labeling changes to run selinux in enforcing mode
- 2) Installation of perl module GD 2.0.28 is not resolved as yet. Absence of GD \*MAY\* pose problems with Koha generation of labels.
- 3) Assumes install on a generic PC with an i386 architecture. This includes regular Intel/AMD processor machines. This also works for Dual-core CPUs that are reported as "686"  
This affects, for example, the choice of the rpms provided. If installing to a different architecture, you may need to use a different version of the software.
- 4) Video tutorials were created using an evaluation version of Camtasia Studio. We express our thanks to them, and hope that (someday) we'll have enough to pay for a full version. Further versions of the videos will be attempted using FOSS tools.
- 5) The Apache server used is version 2.2 (it was referred to as httpd and not 'apache2', also utility Apache scripts such as a2enmod and a2ensite were not in use)
- 6) This does not include configuring sendmail or another MTA (neither does it cover SMS) for Koha notifications, neither does it include Zebra configuration

### Thanks to

All the Koha community, and Prashant K for getting us started on this...

### Send feedback and requests to

Use the contact form at <http://krishnanm.org/khh>

### General instructions and cautions

- Please review conventions below to make the best use of the information here. Preferably copy commands from the .txt version of this document after turning off 'word wrap', for best results.
- Ensure you use paths, filenames, users, passwords, etc. that

are relevant to your own choices before you run the commands provided here (these are for illustration only)

- All commands here were run as root or as an user with sudo privileges
- Beware of making changes to configuration files without first backing them up (so you can revert to a known good configuration, in the event the changes don't work)

### **IMPORTANT! Conventions**

- The high-level operation being performed begins with == and is in bold font

For e.g.,

#### **==Set your hostname**

- Instructions are one more commands. An instruction starts with //

For e.g.,

```
//Edit /etc/hosts to update your hostname
```

- A command or query, etc. starts by itself on a fresh line. This ensures you can copy and paste the line directly in most cases

For e.g.,

```
/bin/hostname
```

- A descriptive comment starts with #

For e.g.,

```
#Verify the hostname by pinging it
```

### **Part 1: Installing Fedora 9 on your box**

Please refer to the graphic instructions in the video "Fedora 9 install"

Duration: approx. 6 minutes

The high-level operations are as follows:

#### **==Choose installation mode (install/upgrade, etc.)**

#### **==(OPTIONAL) Test installation media**

#### **==Choose language during installation**

#### **==Choose keyboard layout**

#### **==Choose Install/Upgrade**

#### **==Set Networking options**

#### **==Select time-zone**

#### **==Set root password**

#### **==Create partition layout**

#### **==Choose Boot loader**

#### **==Select Tasks support and software** (REFER FILE "INSTALLATION CHOICES MADE FOR FEDORA 9.TXT")

```
#Remove DVD from drive, REBOOT
```

- ==Welcome screen**
- ==License information screen**
- ==Create user**
- ==Check date and time**
- ==Hardware profile screen**

### **Part 2: Preparing your system to install Koha**

Please refer to the graphic instructions in the video "HOW-TO install Koha on Fedora 9"

Duration: approx. 37 minutes (may incorrectly display as over 1 hour)

The high-level operations are as follows:

#### **==Set selinux to "permissive" mode**

```
//Edit /etc/selinux/config and set selinux=permissive
//Reboot the system
```

```
/sbin/shutdown -r now
```

#### **==Add user to sudoers as needed**

```
visudo
//Add your user to the end of the file and copy over the
privileges of root
//Re-login as a privileged user, if you prefer to do so for the
remainder of the installation. You will need to prefix certain
commands with 'sudo'
```

#### **==Set your hostname, verify it**

```
//Check current hostname
hostname
```

```
//To edit hostname, create /etc/hostname containing only your
hostname, and set hostname using
hostname -F /etc/hostname
#Verify hostname
hostname
```

```
//Edit /etc/hosts and verify your IP addresses and hostnames are
reflected, including the 'loopback' interface (127.0.0.1
localhost)
```

```
//Ping hostnames in your /etc/hosts file to ensure the system
resolves them to IP addresses
```

#### **==\*\*IF\*\* you are connected to the Internet, you may update your system**

```
yum update
#NOTE!: This installation was tested on a system with no access
to the Internet, we did not run an update, and therefore, cannot
say if update process will affect the rest of the installation as
```

given here. In general, however, the update process should not change things much with installing Koha.

### **==Check locale on your system**

```
locale
#Ensure this is what you want. For e.g., LANG=en_US.UTF-8
```

### **==Install MySql**

```
//Verify mysql is available
cd /usr/bin
ls -l mysql*
#Lists mysql scripts, etc.

//Startup mysql without grant tables loaded
#Shutdown mysql if already running, before running the below.
(Refer the 'Commonly used commands.txt' file)
mysqld_safe --skip-grant-tables &

//Login to mysql without a password to verify
mysql -u root
#Quit mysql

//Install mysql from the shell prompt
/usr/bin/mysql_install_db

//Run mysql
mysqld_safe &
pgrep mysql
#If mysql is running, pgrep returns process IDs of mysql
processes, else nothing

//Secure mysql as needed (*REMEMBER* root password assigned)
mysql_secure_installation

#Login to mysql as root with assigned password, and verify,
create another temporary 'test' user
mysql -u root -p
grant all on test.* to 'testusr'@'localhost' identified by
'test';
```

### **==Change character sets and collations used by MySql**

```
//Examine current character sets and collations
#Run following SQL query on MySQL (preferably as a user other
than root) at the mysql prompt
show variables where variable_name LIKE "character_set%" OR
variable_name LIKE "collation%";

//Edit /etc/my.cnf to change character-set
#Paste the contents of "MySQL UTF-8 character set config
text.txt" into my.cnf
```

```
//Restart MySQL, and verify the output after repeating query
given earlier.
```

### **==Check Apache usage of character sets**

```
#Check for the presence of the following directive in /etc/httpd/
conf/httpd.conf
AddDefaultCharset UTF-8
```

### **==Copy the contents of media containing software to /tmp (or another suitable location)**

```
cp -r /media/koha-install/ /tmp/
```

### **==Extract KOHA**

```
cd /tmp/koha-install/koha
tar xzf koha-3.00.00.tar.gz
```

### **==Create empty database and database user for koha** (\*remember\* to substitute your values here)

```
#Login to mysql as root
mysql -u root -p
create database koha;
grant all on koha.* to 'kohaUser'@'localhost' identified by
'kohaUserPassword';
flush privileges;
```

### **==Run script to create Koha database tables** (\*remember\* to substitute your values here)

```
mysql -u kohaUser -D koha -p < /tmp/koha-
install/koha/koha-3.00.00/installer/data/mysql/kohastructure.sql
```

```
//Verify that tables were created
#Login to mysql
mysql -u kohaUser -D koha -p
use koha;
show tables; #Output from the query displays 116 rows
```

### **==Install RPMs** (refer file "rpm -q output.txt")

```
//Check for installed packages
rpm -q lynx ncftp wget curl tcl bzip2 bzip2-devel gcc perl-CPAN
perl-ExtUtils-AutoInstall gdbm gdbm-devel expat-devel
tcp_wrappers-devel libxml2-devel libxslt libxslt-devel libicu
libicu-devel yaz libyaz libyaz-devel mysql mysql-server mysql-
devel
```

```
//List only packages that are not installed
#Pipe the output of the above command to (| grep 'not installed')
```

```
//Install needed packages from media (NOTE: changing the order
fails for certain rpms, like libxslt-devel)
cd /tmp/koha-install/rpm/
```

```
rpm -ivh lynx-2.8.6-13.fc9.i386.rpm
rpm -ivh ncftp-3.2.1-2.fc9.i386.rpm
rpm -ivh curl-7.18.1-1.fc9.i386.rpm
rpm -ivh tcl-8.5.2-2.fc9.i386.rpm
rpm -ivh tcp_wrappers-devel-7.6-52.fc9.i386.rpm
rpm -ivh libgpg-error-devel-1.6-2.i386.rpm
rpm -Uvh libxslt-1.1.24-2.fc9.i386.rpm
rpm -ivh libgcrypt-devel-1.4.0-3.i386.rpm
rpm -ivh libxslt-devel-1.1.24-2.fc9.i386.rpm
rpm -ivh libicu-devel-3.8.1-7.fc9.i386.rpm
rpm -ivh mysql-devel-5.0.51a-1.fc9.i386.rpm
rpm -ivh perl-ExtUtils-AutoInstall-0.63-8.fc9.noarch.rpm
rpm -ivh perl-CPAN-1.9205-20.fc9.i386.rpm
rpm -ivh libyaz-3.0.34-1.fc9.i386.rpm libyaz-
devel-3.0.34-1.fc9.i386.rpm
rpm -ivh yaz-3.0.34-1.fc9.i386.rpm
rpm -Uvh tar-1.19-6.fc9.i386.rpm
```

### **==Configure cpan** (refer file "cpan- Custom preferences.txt")

```
cpan
#You can reconfigure at any time using "o conf init" at the cpan
prompt
```

### **==Extract cpan archive**

```
//Re-create cpan-mirror.tar.gz
cd /tmp/koha-install/cpan-mirror
cat cpan-a* >> /var/cpan-mirror.tar.gz &
```

```
//Test the tar file
tar tvf /var/cpan-mirror.tar.gz
```

```
//Create space in /tmp by removing the cpan-a* files
cd /tmp/koha-install/cpan-mirror
rm -f cpan-a*
```

```
//Extract cpan-mirror into /tmp
cd /tmp
tar xzf /var/cpan-mirror.tar.gz
```

### **==Install perl modules** (refer file "cpan- list modules.txt")

```
#Enter these commands at the CPAN prompt (to obtain the prompt,
issue the command 'cpan')
install Bundle::CPAN
reload CPAN
```

```
#You may need to run the following command repeatedly until CPAN
reports that all modules are 'up to date'. Also see note below
install Digest::SHA Module::Signature YAML::Syck
Algorithm::CheckDigits MARC::Record Class::Accessor XML::SAX
MARC::Charset MARC::File::XML HTML::Template::Pro
MARC::Crosswalk::DublinCore PDF::Reuse PDF::Reuse::Barcode
```

```
Data::ICal GD::Barcode::UPCE XML::RSS Biblio::EndnoteStyle
Schedule::At Barcode::Code128 XML::LibXML::SAX
MARC::Charset::Constants CGI::Session Class::Factory::Util
Date::ICal Date::Manip Lingua::Stem List::MoreUtils PDF::API2
PDF::API2::Util Text::CSV Text::CSV_XS XML::Dumper XML::LibXSLT
XML::Simple Unix::Syslog POE Date::Calc Net::LDAP::Filter
Mail::Sendmail Email::Date HTML::Scrubber MIME::Lite SMS::Send
Net::Z3950::ZOOM CGI::Session::Serialize::yaml
```

#IMPORTANT: If any modules fail to install, you will need to check if there were failures with installing any other modules they are dependent on.

#You may require to 'force install' modules, for e.g.:  
force install Barcode::Code128

#NOTE: You may be prompted at various times to interactively run certain tests, install certain modules, etc. Installing CPAN modules will require some of your attention from time to time.  
#Certain tests may be skipped or may fail without causing issues

### **==Configure mysqld and httpd to run at startup**

```
/sbin/chkconfig httpd on
#Verify
/sbin/chkconfig --list httpd
```

```
/sbin/chkconfig mysqld on
#Verify
/sbin/chkconfig --list mysqld
```

### **Part 3: Installing Koha**

#### **==Supply configuration information to Koha**

```
cd /tmp/koha-install/koha/koha-3.00.00
perl makefile.pl
```

#### **==install any pending perl modules and repeat perl Makefile.pl again as needed**

#### **==Add user koha**

```
useradd -U koha
```

#### **==Resume Koha install**

```
make
make test
make install
```

#### **==Changes to Apache configuration to serve Koha webpages**

```
//Verify the VirtualHost entries created for Koha at
/etc/koha/koha-httpd.conf
//Replace IP addresses in the VirtualHost opening tags with your
hostname
```

```
//Update Apache configuration
ln -s /etc/koha/koha-httpd.conf /etc/httpd/conf.d/koha
cat /etc/koha/koha-httpd.conf >> httpd.conf
#Add Listen directive in httpd.conf (Listen 8080) for INTRANET, a
Listen directive (Listen 80) will already be present by default.
```

```
//Test your Apache configuration, (re-)start Apache
/usr/sbin/apachectl -t
/usr/sbin/apachectl -S
```

```
#Re-start Apache
/usr/sbin/apachectl start
```

```
#Ensure MySQL is running
pgrep mysql
#Start MySQL if needed
```

```
==Firewall changes to enable network access (refer file
"iptables.test.rules.txt")
```

```
//Attempt to access Koha over the network
#URLs are
http://hostname:8080
http://hostname
```

```
//List and backup current configuration
iptables -L
iptables-save > iptables.up.rules
```

```
//Create and load new iptables configuration (copy from
"iptables.test.rules.txt")
#Create a file with the new configuration as
/etc/iptables.up.rules
iptables-restore < /etc/iptables.test.rules
```

```
//Re-test
iptables -L
```

```
//change hosts file locally, if needed to resolve hostname
```

```
==Completing Koha installation: Koha webinstaller
```

```
#You may want to look at the various Apache and Koha logs while
you try to access Koha
```

```
#Koha intranet error and access logs
tail -f /var/log/koha/koha-error_log
tail -f /var/log/koha/koha-access_log
```

```
#Apache access and error logs
tail -f /var/log/httpd/access_log
tail -f /var/log/httpd/error_log
```

//Step through the Koha webinstaller screen, verify database connectivity, and make other choices.

**==Make the 'good' iptables configuration permanent for startup, re-boot to verify**

```
cp -p /etc/sysconfig/iptables /etc/sysconfig/iptables.orig
iptables-save > iptables.up.rules
cp /etc/iptables.up.rules /etc/sysconfig/iptables
/sbin/shutdown -r now
```

**==Try accessing Koha again**

#Koha comes up. You are DONE!

END-OF-FILE