IceWarp Unified Communications

Installation and Control in Linux

Version 12

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IceWarp Server Installation and Control in Linux

This document describes how to install IceWarp Server and control its services in Linux.

IceWarp supports Linux installations: RedHat/CentOS. Debian and Ubuntu. Since IceWarp v11.4.2 the latest versions are supported: RedHat 7, Debian 8 and Ubuntu 16.04.

Before Installation

1. Check available space on your disc, min. 500 MB is required.
2. Make sure the system has ***utf8*** locale set. You can do this by running the following command:

   locale (as root)

   It has to end with the ***.utf8*** string. If not, please refer to the system documentation and change the locale appropriately.

   NOTE: The Turkish locale (tr_TR) is not supported because of a bug in PHP. It is recommended to use (en_US) instead. It has been tested with a Turkish client – works well.
3. Stop and remove from the ***init*** process every program which can use any network port required for the server. For example ***sendmail*** listens on the port 25 and the SMTP service would not be able to start.
4. You can create a new user for the server, for example "icewarp". This user has lower privileges than root. When created and set for installation, the server – after initialization – drops root privileges and runs under this user.

   NOTE: Even in this case, it is necessary to launch the server as root. It is not possible to launch the server from any account with lower privileges.
5. Check firewall – Linux firewall (*iptables*) is enabled on many distributions by default. The default configurations block for example remote HTTP connections to the server. Thus remote console cannot be used, because it uses HTTP port for communication. The IceWarp setup does not add any rule to your *iptables* configuration.
6. Check SELinux – IceWarp server comes with its own dynamic libraries which are placed in the IceWarp installation directory. When the SELinux security module is installed and is in the enforcing mode, it can prevent IceWarp Server from loading these libraries causing that IceWarp does not work. SELinux is installed and enforcing by default on some distributions.

   You can easily "disable" SELinux by switching it to the permissive mode by the following command:

   setenforce 0

   If you want to use SELinux in the enforce mode on your system, you need to configure it yourself to allow IceWarp server to operate correctly.
7. On genuine Red Hat servers (not CentOS), it is needed to add so called ***optional repository*** to have LibreOffice packages available. LibreOffice is needed for document conversions (anything –> PDF).

   IceWarp Server can work without this feature and Linux installer allows not to install LibreOffice at all. But if you want to use document conversions on a genuine RHEL, you need LibreOffice and have to add this optional repository. It is described in RedHat documents – it can be easily found on the Internet.

Quick Installation Guide

The installation package is in .tar.gz format. The latest package can be always found on IceWarp web site **http://www.icewarp.com**, in the **Downloads** section.

Example: IceWarpServer-10.4.0_RHEL5.tar.gz

1. Extract the package:

   [linux]$ tar -xzf IceWarpServer-10.4.0_RHEL5.tar.gz

2. Chdir to the created directory:

   [linux]$ cd IceWarpServer-10.4.0_RHEL5

3. Start the installation:

   [linux]$ ./install.sh

4. Follow the onscreen instructions.

Running

The IceWarp Server uses database for storing informations for accounts, antispam, groupware, WebClient cache, ActiveSync, directory cache and spam reports.

Default databases are:

- Accounts: uses file system
- Antispam, groupware, WebClient cahe, ActiveSync, directory cache and spam reports: SQLite

You can change database type in wizard (launch **wizard.sh**) or using the Remote Administration tool for Windows or using W***ebAdmin***.

Also UnixODBC is supported.

The server was tested with UnixODBC and Oracle.

Webserver listens on ports 80 and 32000 (443 and 32001 for SSL).

Default http addresses are:

- WebClient: http://localhost/webmail
- WebAdmin: http://localhost/admin
- RPC: http://localhost/RPC/

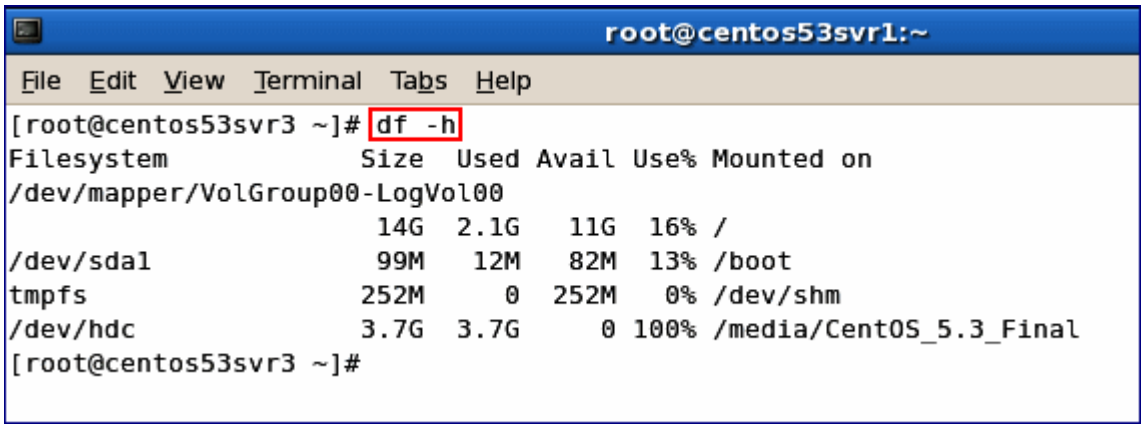
If you have problem running the server, please check log files in the ***.<install_dir>/logs*** directory, errors regarding unsuccessful port binding or loading of required libraries will be logged here.

Installation Step-by-Step on Red Hat Enterprise Linux 5

BE AWARE: Setup has to be executed as root **logged in login shell**. This can be achieved by logging directly as root or by switching to root via ***su -*** (the minus is important). (User can also switch correctly using ***su -1*** or ***su --login***).

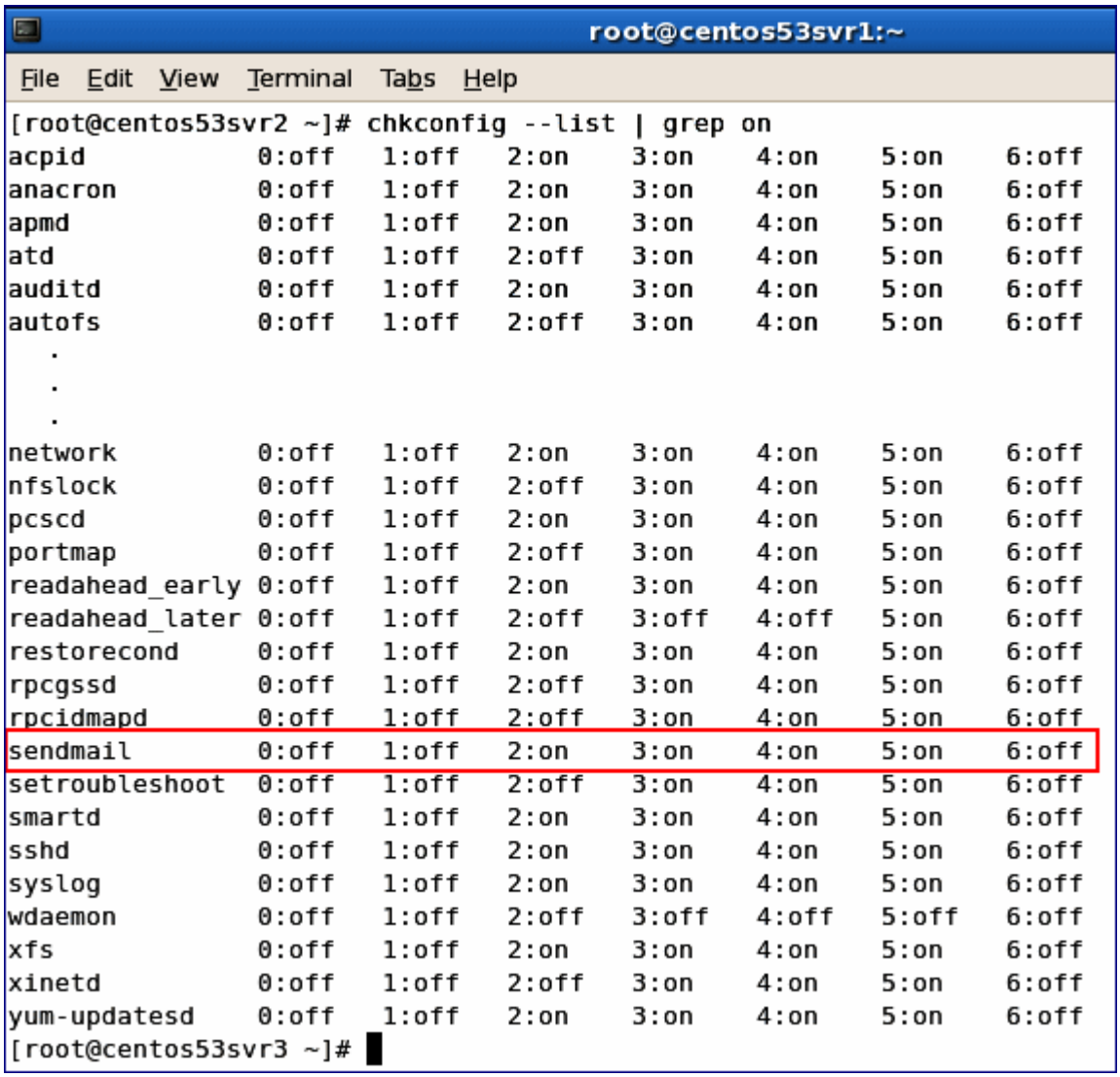
To install IceWarp Server on Red Hat Enterprise Linux (RHEL) 5 (with MySQL as a storage), follow these steps:

1. Check available disk space in volumes using ***df -h***. At least 500MB is required (for installation, not including future user data).

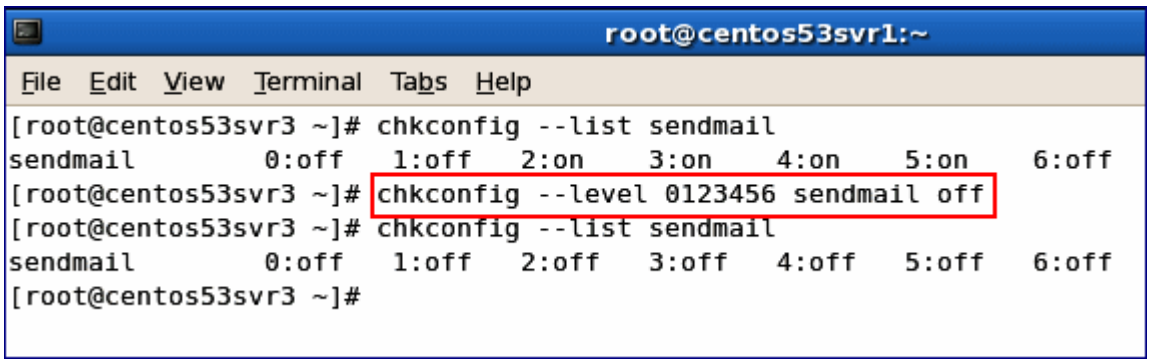


2. Check used ports running ***netsat -nap***. Refer to the **System Node** guide – **Service Ports** chapter, to check what ports IceWarp Server uses.

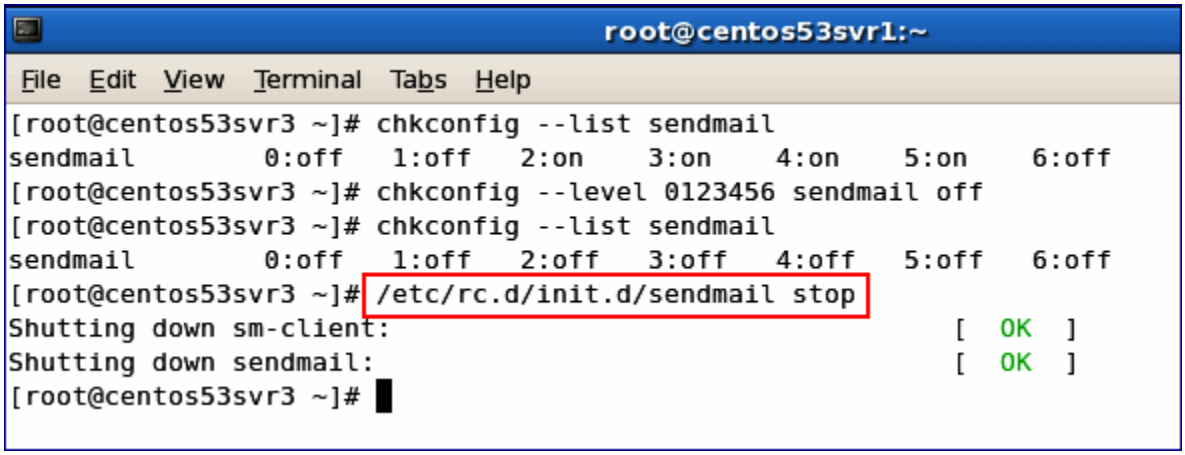
   Check for services startup's using ***chkconfig --list | grep on***.



3. Turn off **Auto-Start** for clashing services, ie. Sendmail using ***chkconfig --level 0123456 sendmail off***.



4. Stop clashing services, ie. Sendmail using ***/etc/rc.d/init.d/sendmail stop***.



NOTE: On other distributions, the tool for managing services startup can differ and clashing applications can also differ:

For Debian 6 (support ended with 11.4.0.0 release):

update-rc.d -f exim4 remove

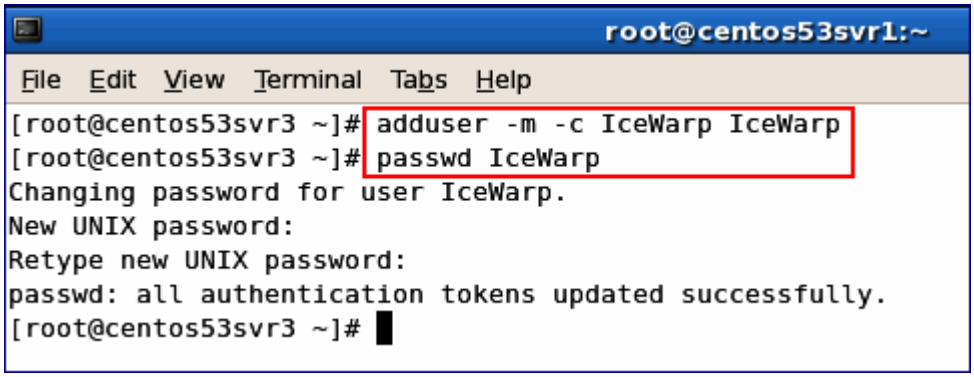
/etc/init.d/exim4 stop

For Centos 6.2:

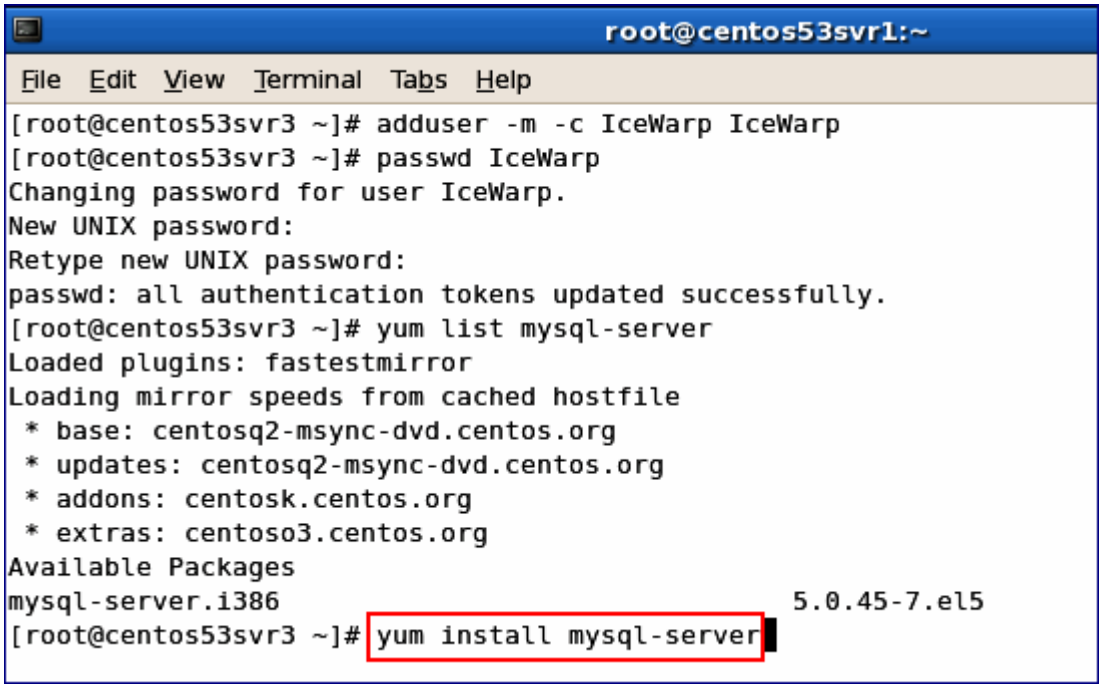
ckconfig --level 0123456 postfix off

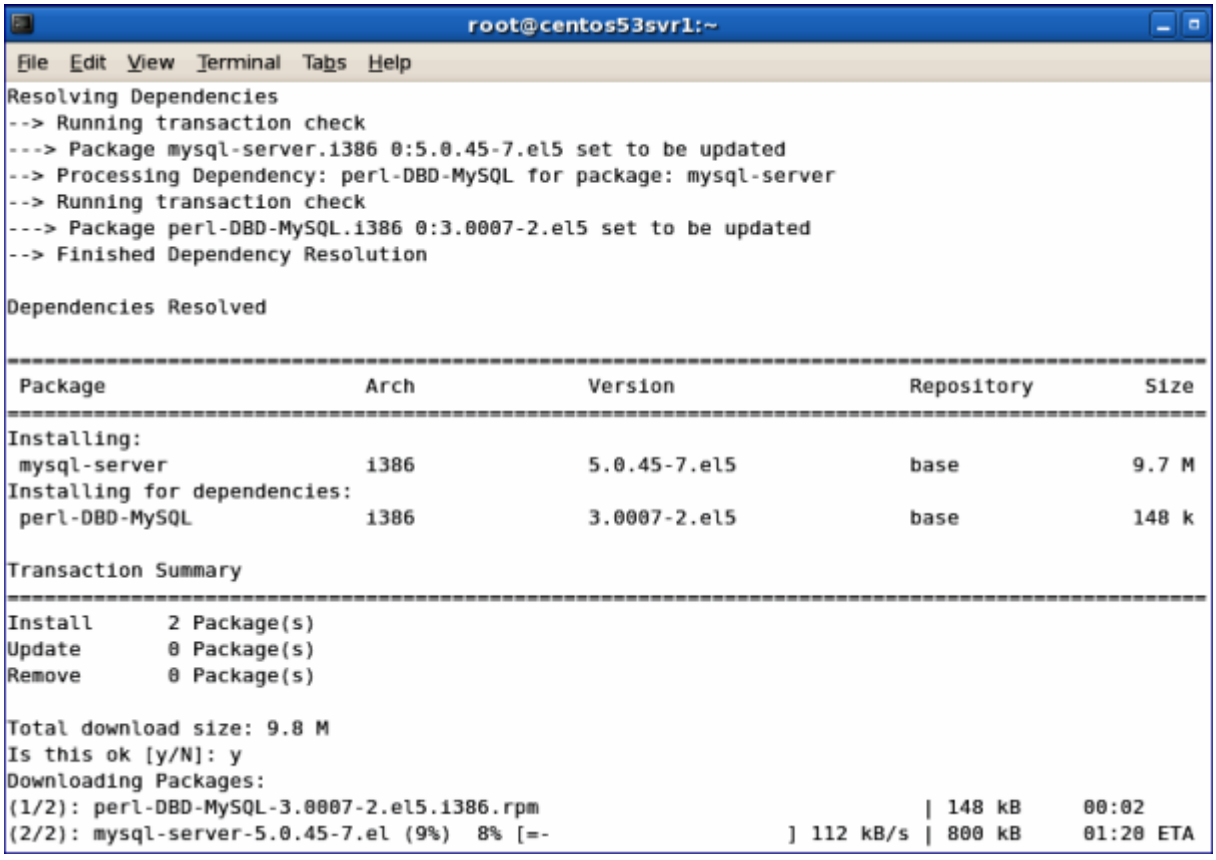
/etc/rc.d/init.d/postfix stop

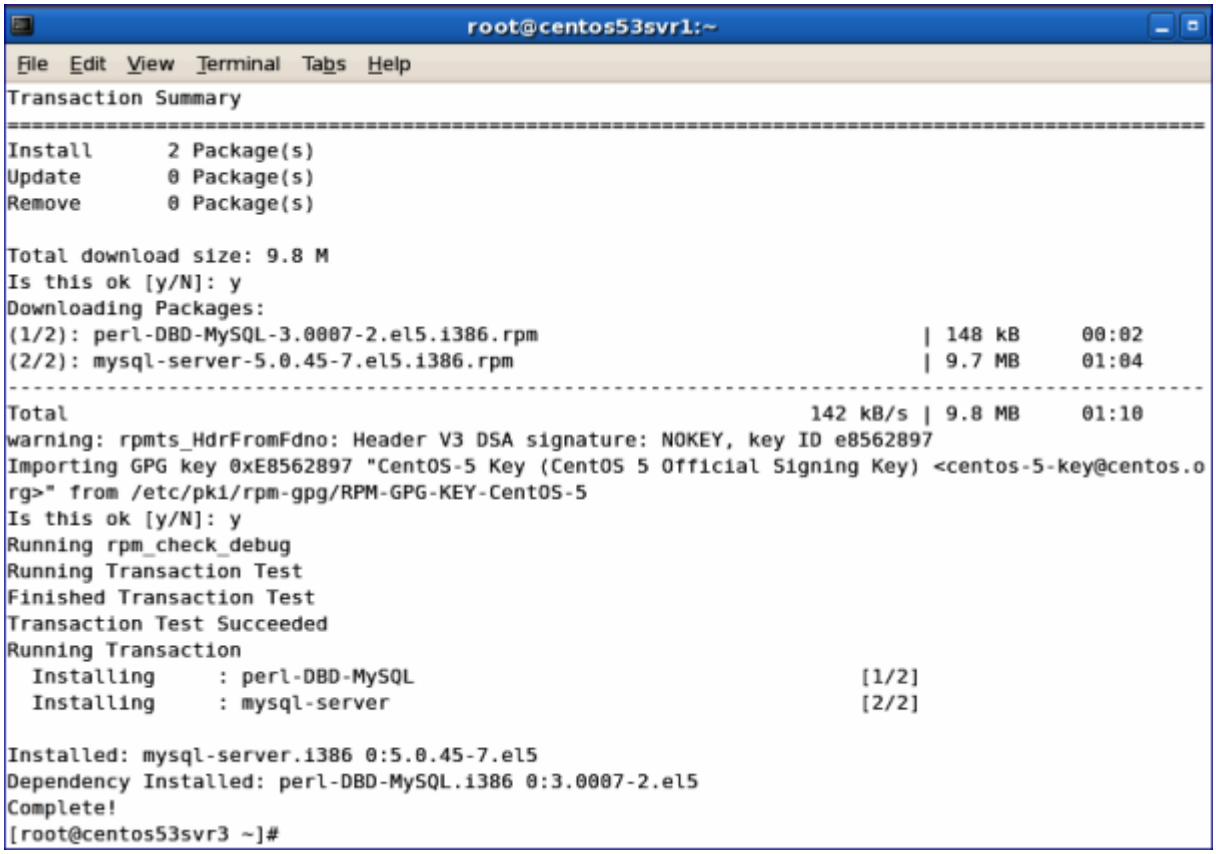
5. Optionally, create a user for IceWarp Server installation (both username and password are case sensitive).



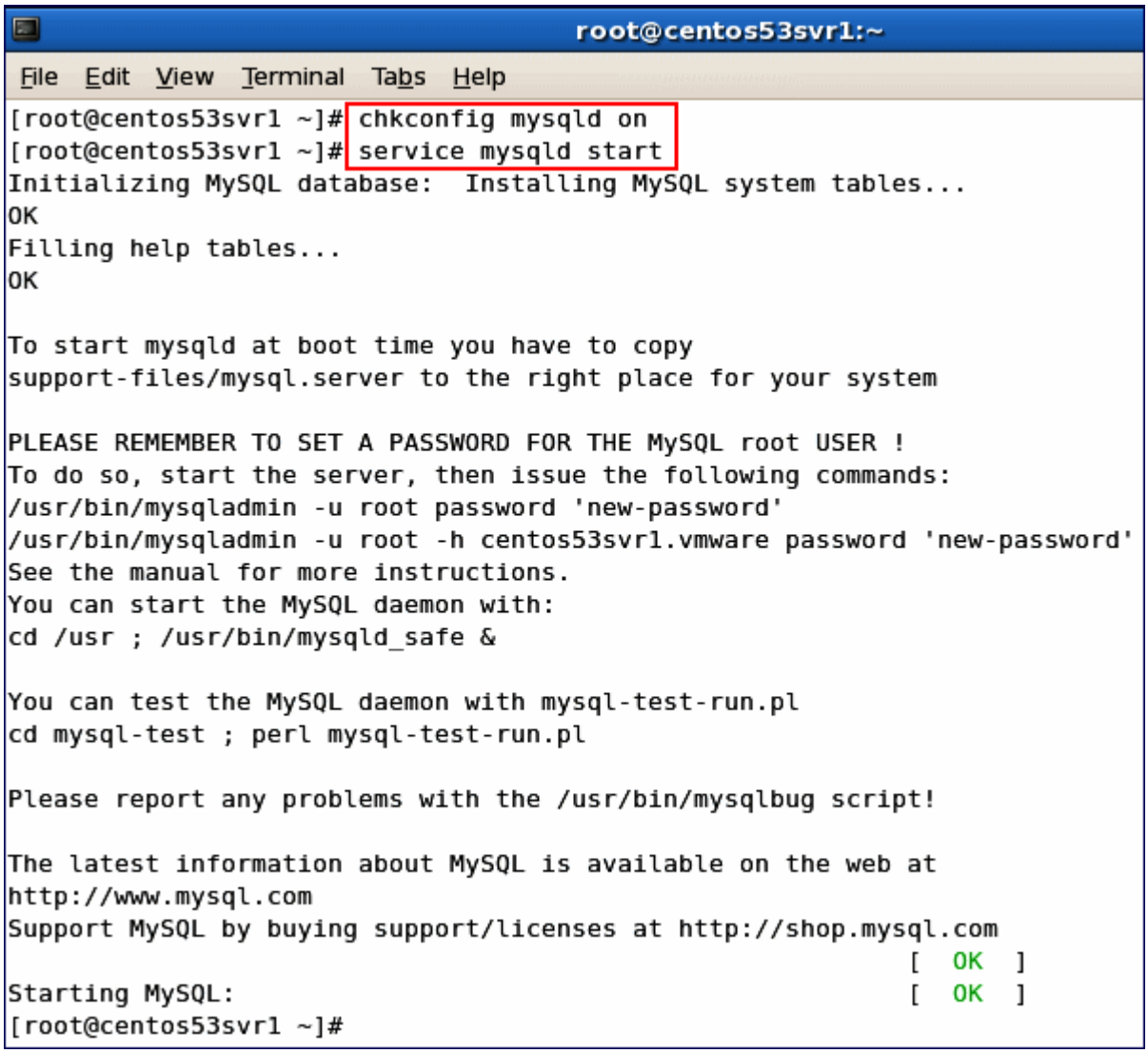
6. If not already installed, install MySQL. In the case you do not want to use MySQL now, proceed to the step # 11.


root@centos53svr1:~
File Edit View Terminal Tabs Help
[root@centos53svr3 ~]# adduser -m -c IceWarp IceWarp
[root@centos53svr3 ~]# passwd IceWarp
Changing password for user IceWarp.
New UNIX password:
Retype new UNIX password:
passwd: all authentication tokens updated successfully.
[root@centos53svr3 ~]# yum list mysql-server
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
* base: centosq2-msync-dvd.centos.org
* updates: centosq2-msync-dvd.centos.org
* addons: centosk.centos.org
* extras: centoso3.centos.org
Available Packages
mysql-server.i386 5.0.45-7.el5
[root@centos53svr3 ~]# yum install mysql-server

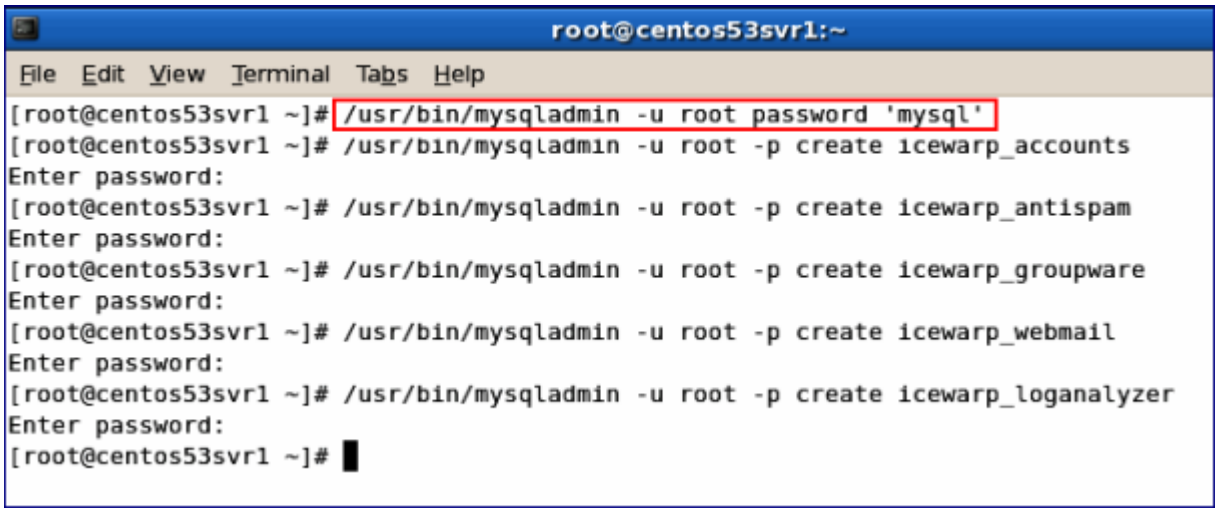

root@centos53svr1:~
File Edit View Terminal Tabs Help
Resolving Dependencies
--> Running transaction check
---> Package mysql-server.i386 0:5.0.45-7.el5 set to be updated
--> Processing Dependency: perl-DBD-MySQL for package: mysql-server
--> Running transaction check
---> Package perl-DBD-MySQL.i386 0:3.0007-2.el5 set to be updated
--> Finished Dependency Resolution
Dependencies Resolved
Package Arch Version Repository Size
Installing:
mysql-server i386 5.0.45-7.el5 base 9.7 M
Installing for dependencies:
perl-DBD-MySQL i386 3.0007-2.el5 base 148 k
Transaction Summary
Install 2 Package(s)
Update 0 Package(s)
Remove 0 Package(s)
Total download size: 9.8 M
Is this ok [y/N]: y
Downloading Packages:
(1/2): perl-DBD-MySQL-3.0007-2.el5.i386.rpm | 148 kB 00:02
(2/2): mysql-server-5.0.45-7.el (9%) 8% [=-] 112 kB/s | 800 kB 01:20 ETA



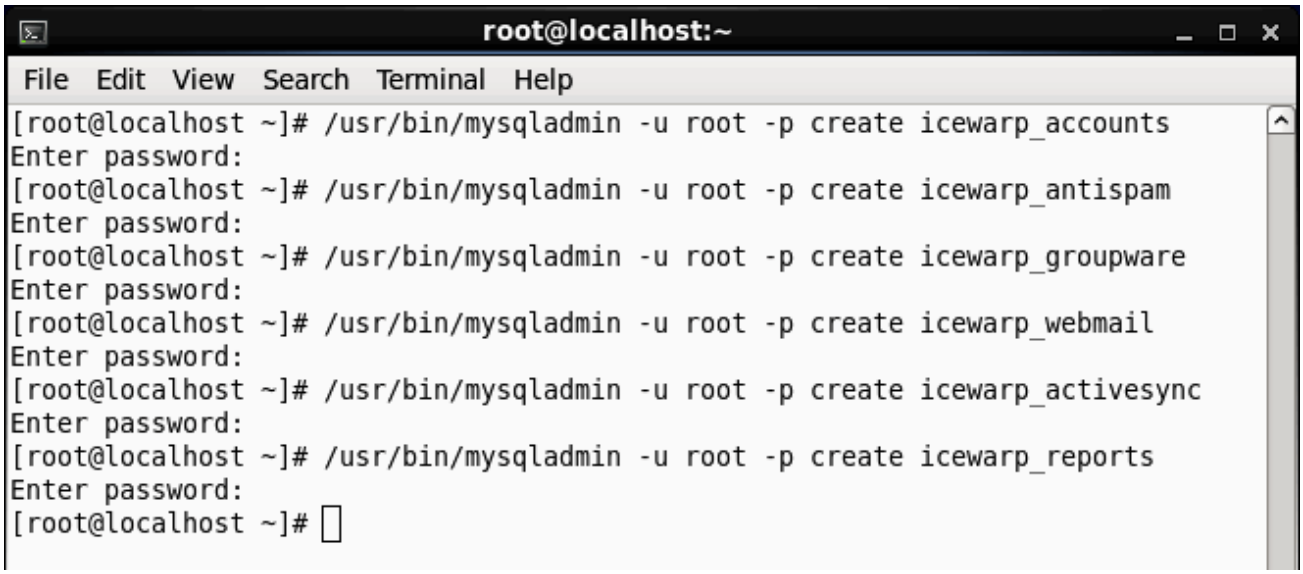
7. Set MySQL to **Auto-Start** using ***chkconfig mysqld on*** and then start the service immediately using ***service mysqld start***.



8. Set MySQL root password.



9. Create databases for IceWarp Server in MySQL.



It is recommended to add the character set option to the create command.

E. g.:

/usr/bin/mysql –u root –p create database icewarp_accounts DEFAULT CHARACTER SET utf8 COLLATE utf8_general_ci

/usr/bin/mysql –u root –p create database icewarp_antispam DEFAULT CHARACTER SET utf8 COLLATE utf8_general_ci

etc.

NOTE: You can specify the collation set for different languages. E.g. for Swedish: ***... utf8_swedish_ci***

Follow this address to verify your collation set for proper MySQL sorting:

http://www.collation-charts.org/mysql60/

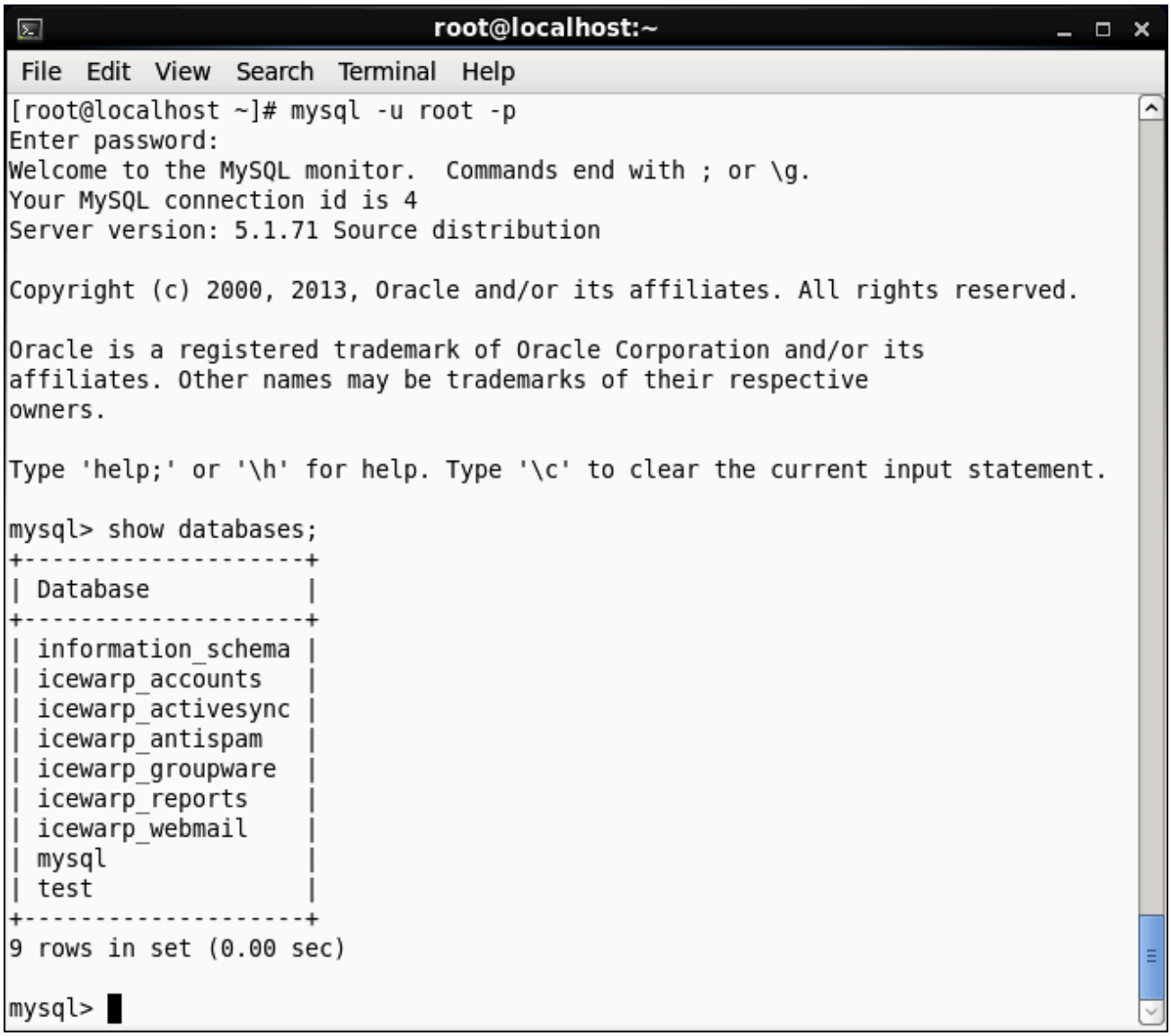
NOTE: ***InnoDB should be used as MySQL engine. This can be done by adding the following line into the /etc/my.cnf file:***

default-storage-engine=INNODB

NOTE: MySQL should be configured after installation by an experienced administrator. When MySQL will be used for WebClient cache on a big server, admin must expect, that the database will still grow and will need gigabytes of space.

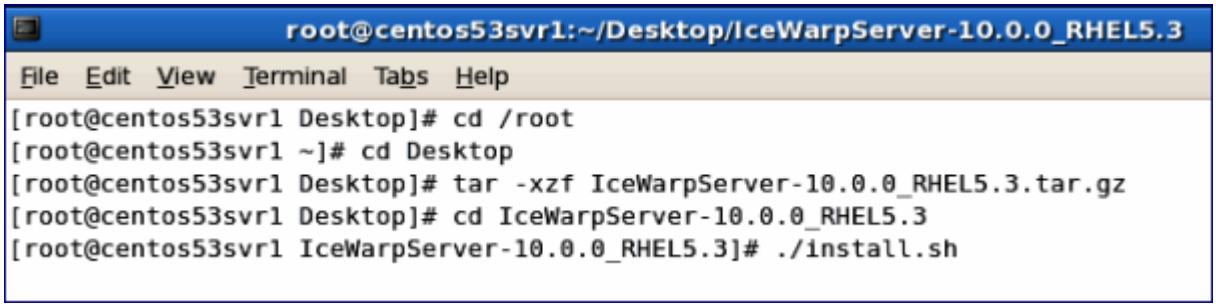
NOTE: On some distributions, old MySQL is distributed by default. On RHEL, we recommend to install a newer MySQL server for example from EPEL repository. See the ***Running CentOS with Newer MySQL Versions (5.5.x and Later)*** *chapter.*

10. Verify tables created in MySQL.



11. Begin IceWarp Server installation by running install.sh with root privileges.

NOTE: When IceWarp Server is already installed, installer will detect it and offer whether you want to upgrade. If you say no, the old installation can be reinstalled – installer will delete the old installation (whole directory) and then install the new one in this mode.



12. License Acceptation

License is displayed on the screen, but usually it scrolls out. The text can be also found in the LICENSE file within the installation package. To accept the license, press *Enter*. If you do not accept, terminate the installer by pressing *Ctrl-C*.

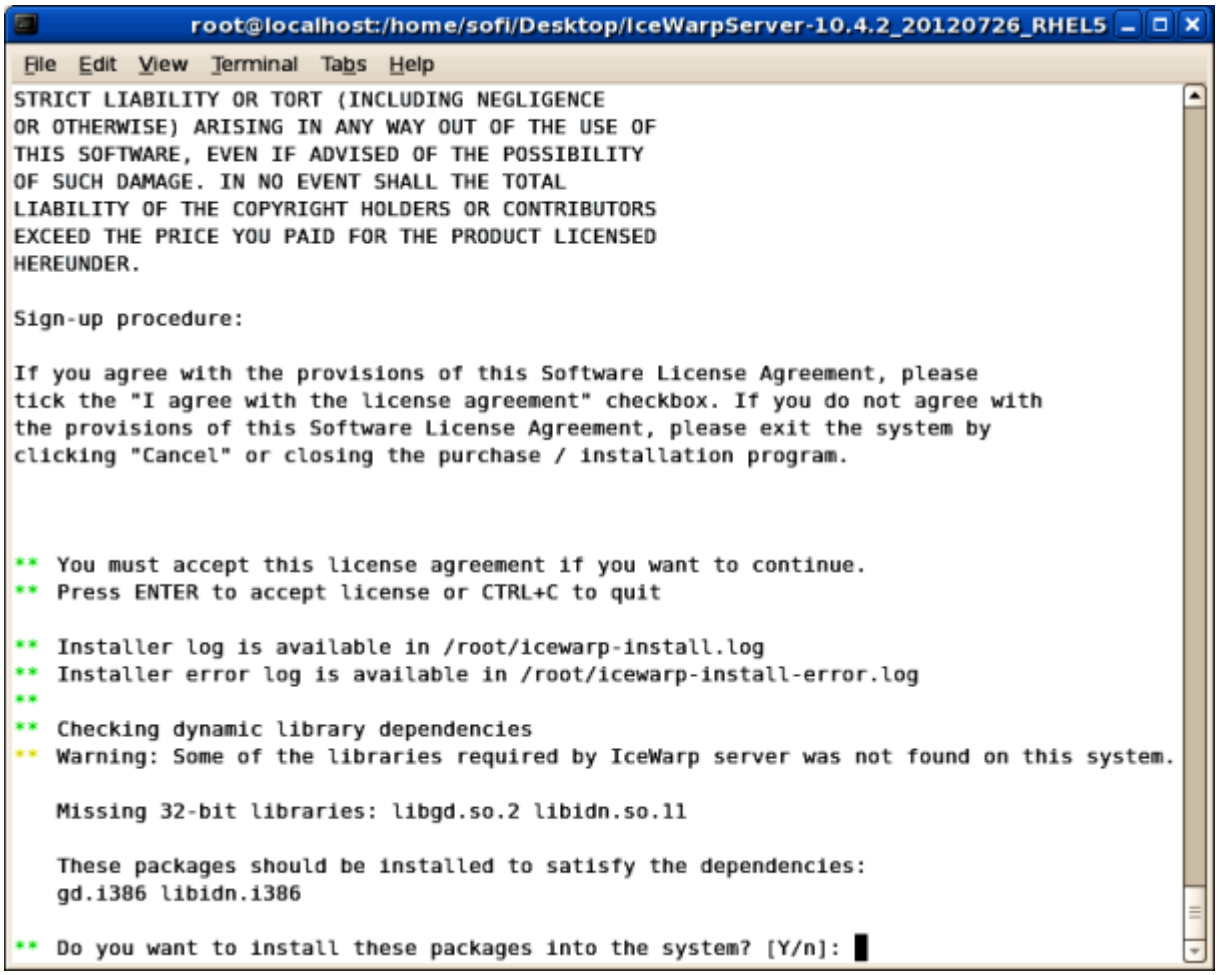
13. Dependencies Check

Dynamic library dependencies are now checked by the installer. It checks dependencies of all binaries included in IceWarp Server, i.e. IceWarp Server itself, embedded LDAP Server and all Purple plugins. When setup detects any librarie(s) are missing, it prints them out together with information, which packages contain missing libraries.

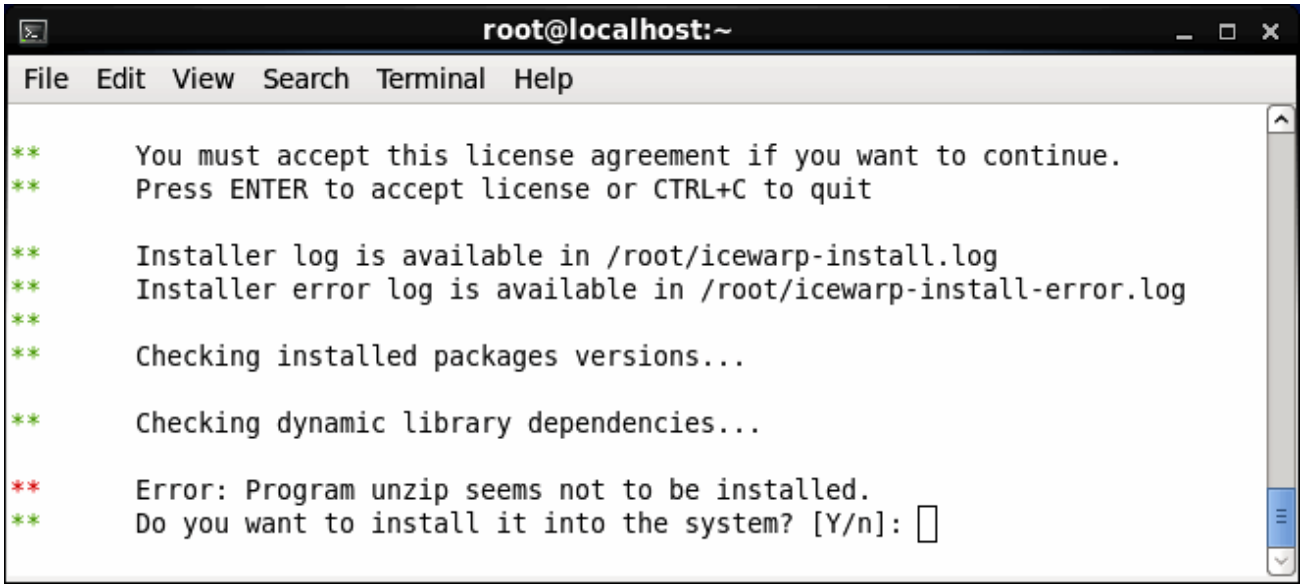
You have the possibility to let the setup run the package manager and install suggested packages. The dependencies are checked again after installation, whether they are installed or still missing.

You can also reject installation of detected dependencies and setup will continue. However, some binaries coming with IceWarp Server will not execute until you install the libraries manually.

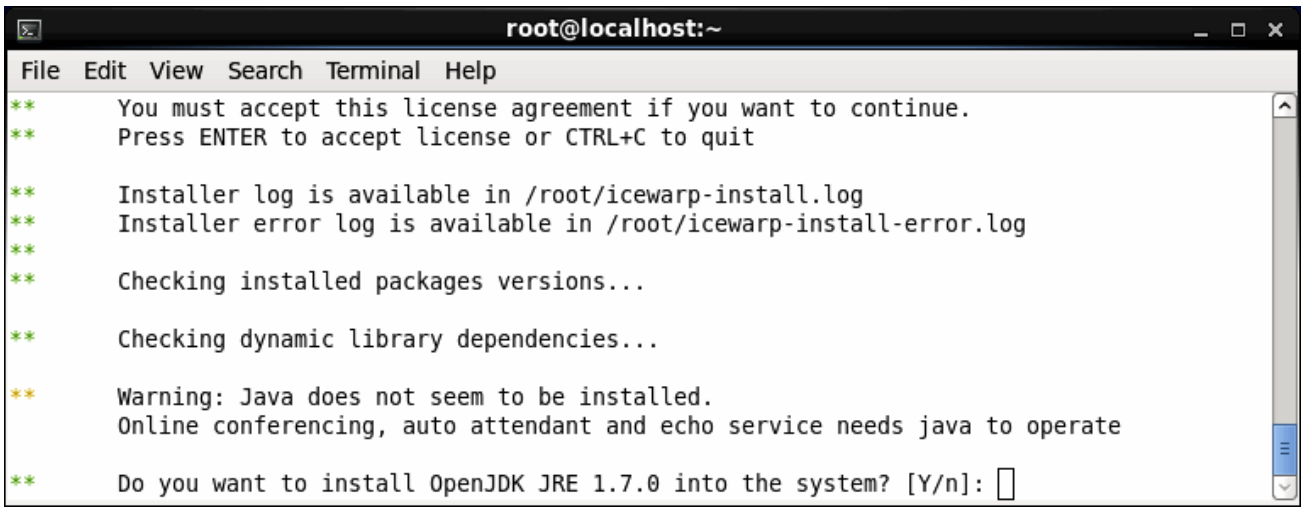
NOTE: 32bit libraries are installed, which sometimes causes a conflict with already installed 64bit libraries. System update is often the solution of this problem.



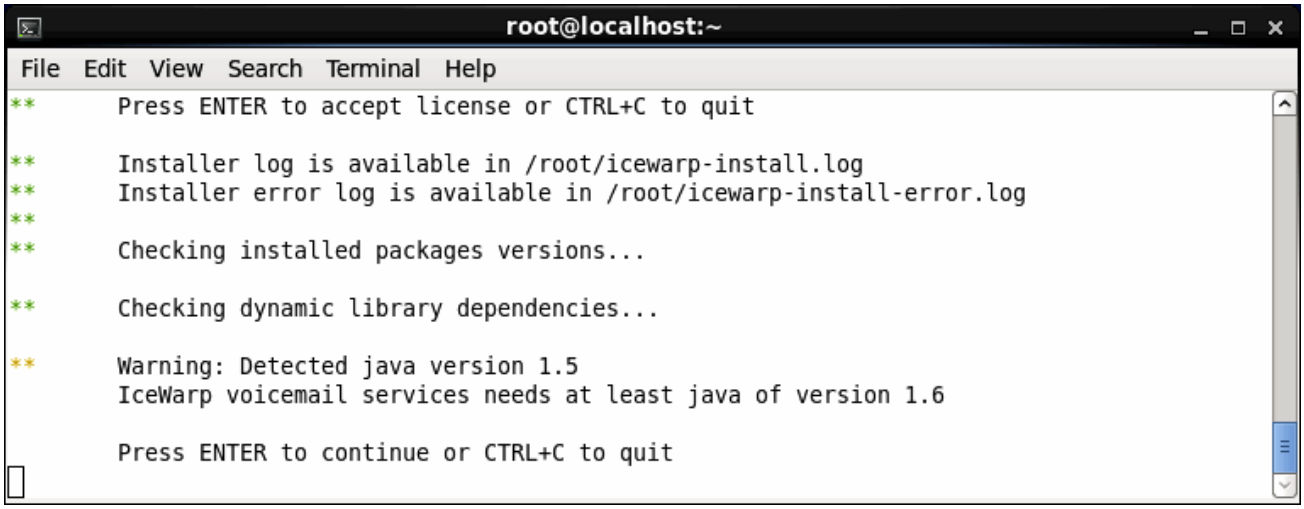
14. Unzip is now required for installation. It can be removed when installation of IceWarp server finishes.



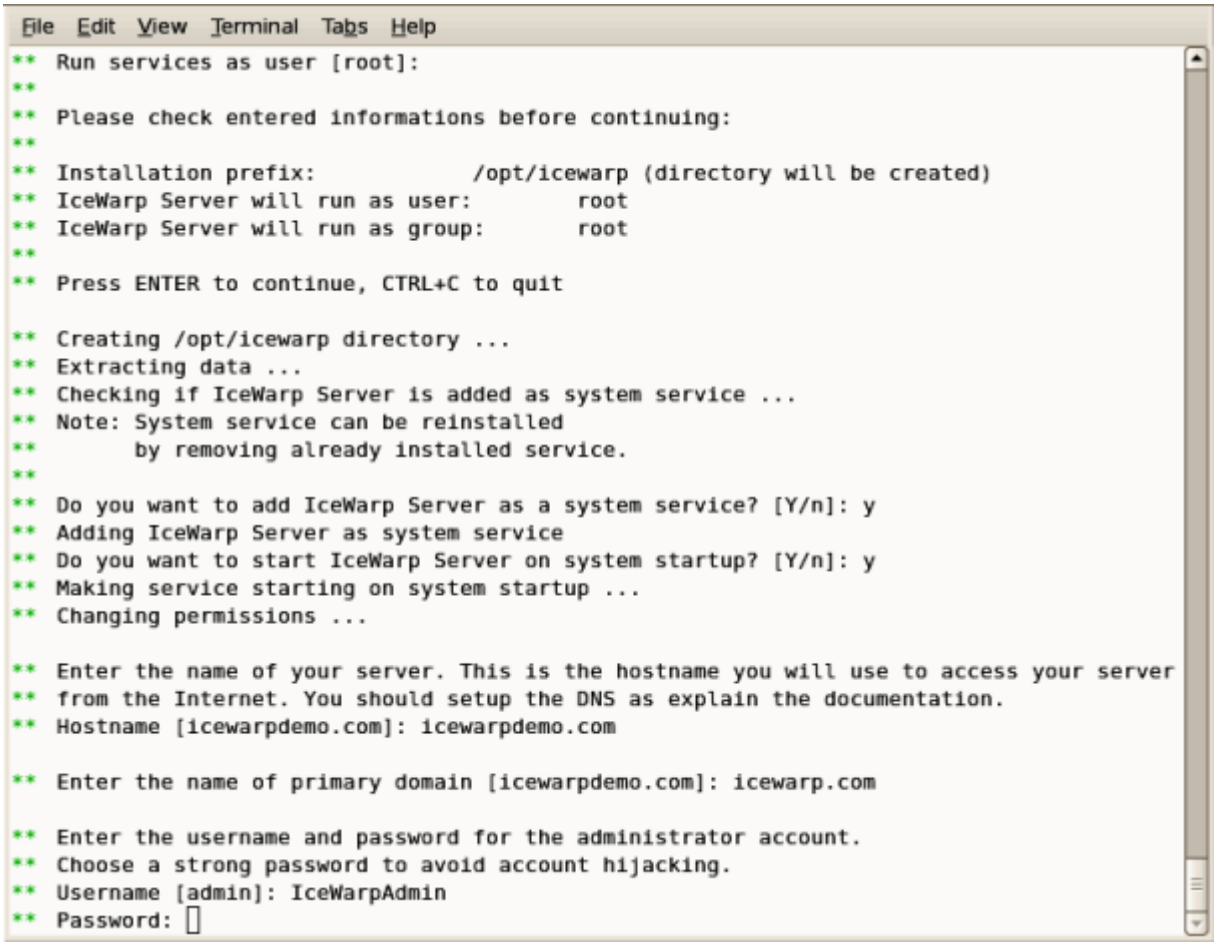
15. Java is required by voicemail services. If Java is not installed, installer allows to install compatible Java (mostly 1.7, but 1.6 will do too).



If there is installed Java < 1.6, installer warns, but will not try to upgrade Java. Administrator should break the installer using keyboard shortcut *Ctrl+C* and at least uninstall old Java. New Java will be installed then by installer.



16. Administrator Account:



Hostname: Fill in the DNS resolvable hostname, the default is taken from system. Warning – if the system hostname is not set correctly, AntiSpam Live does not work.

Domain: Primary domain name.

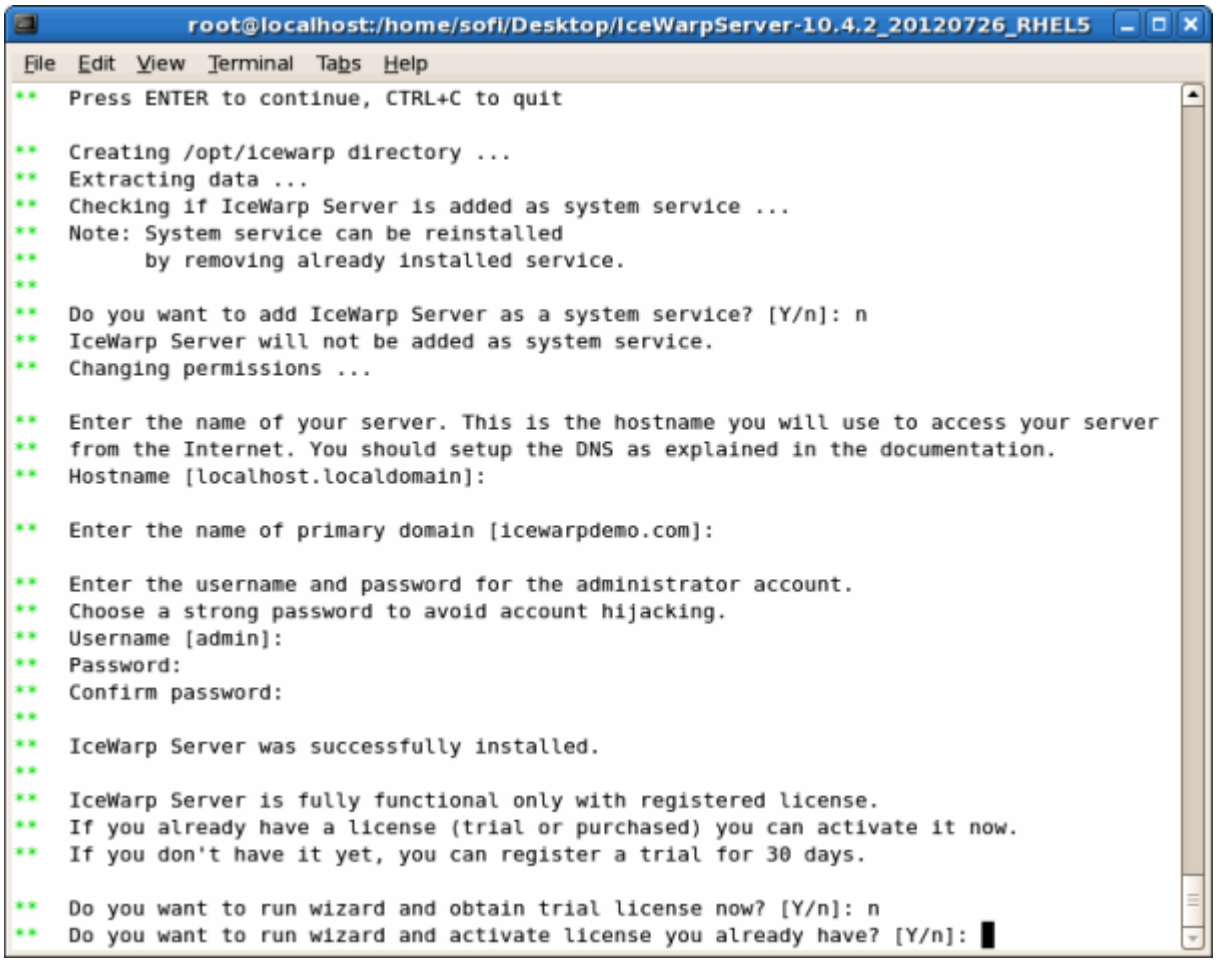
Administrator account: Username and password. Consider password policy – it is in effect. In case of any error, a user can retry or cancel the "wizard". Then they can configure the server manually using **wizard.sh** or other method.

17. License

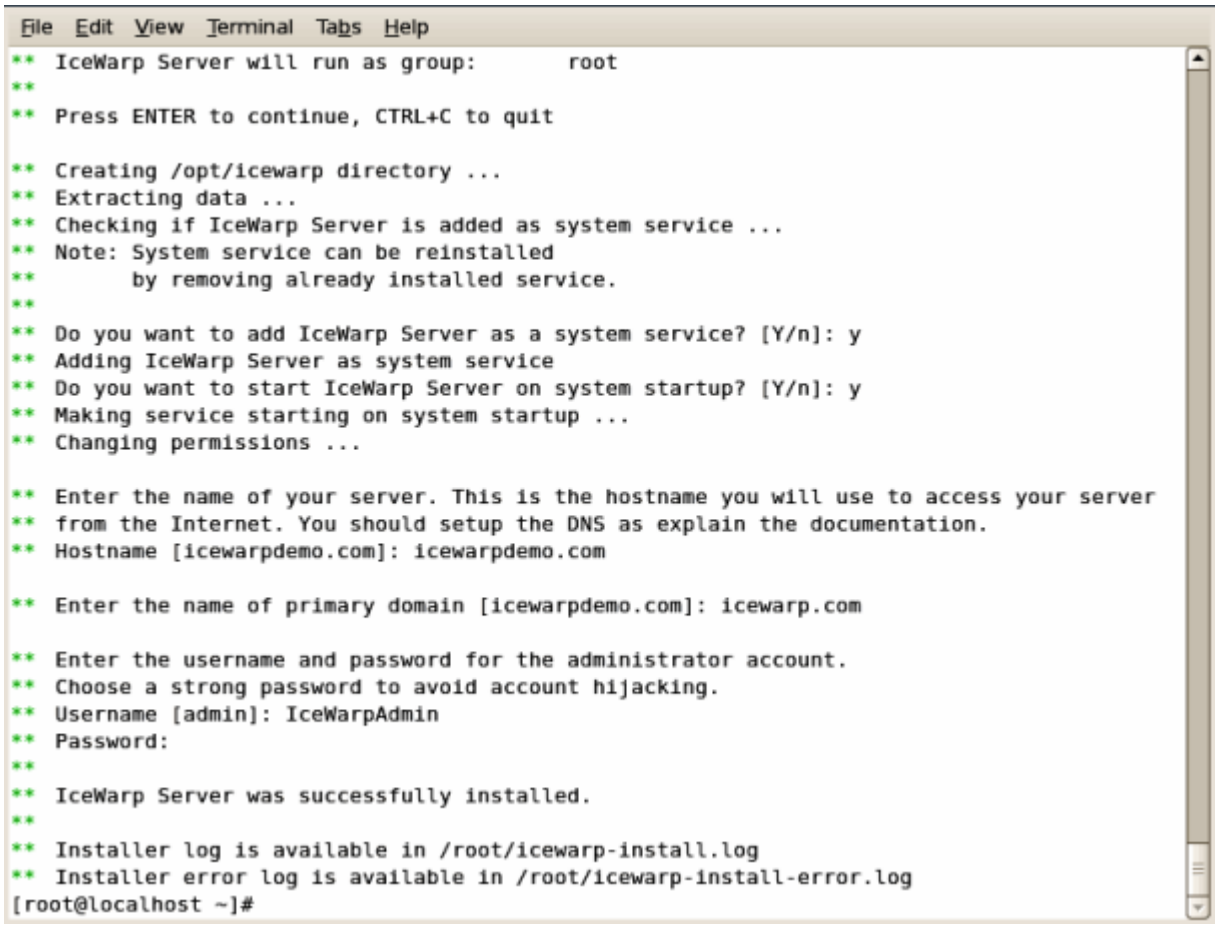
IceWarp Server needs to have registered license to be fully functional. This can be purchased license or a trial one. After installation, setup will ask whether you want to register a trial license or activate a full one that you already have (purchased or a trial obtained from web). In this case, you will need to have ready the ***Order-ID*** of your license.

If you do not register any license, some components (e.g. WebAdmin) will not be available.

For information on license registration, refer to the **New License Registration** section further in this chapter.



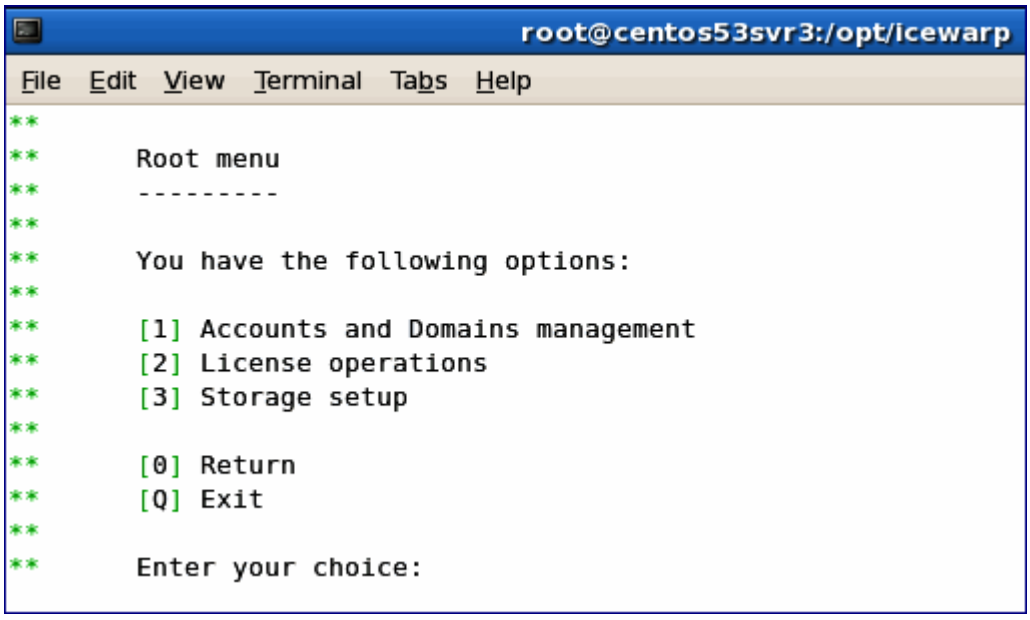
18. Installation is completed now:



19. Run the IceWarp Wizard immediately after installation or at a later stage by executing ***./wizard.sh*** from the ***/install_volume/icewarp ie. /opt/icewarp.***

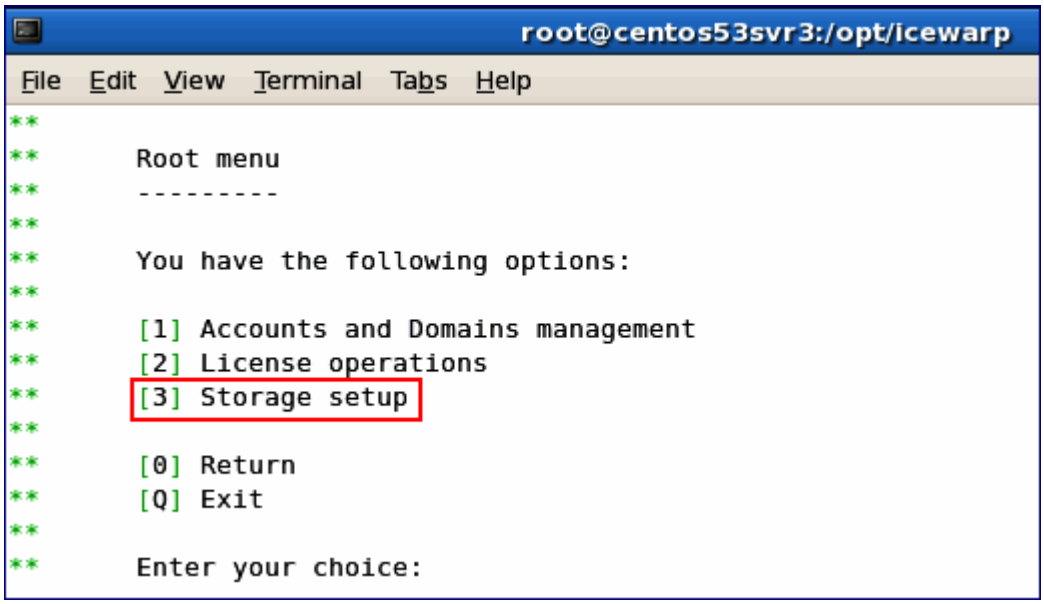
NOTE: The storage can be also configured via WebAdmin or Remote Console. Refer to their documentation for more details.

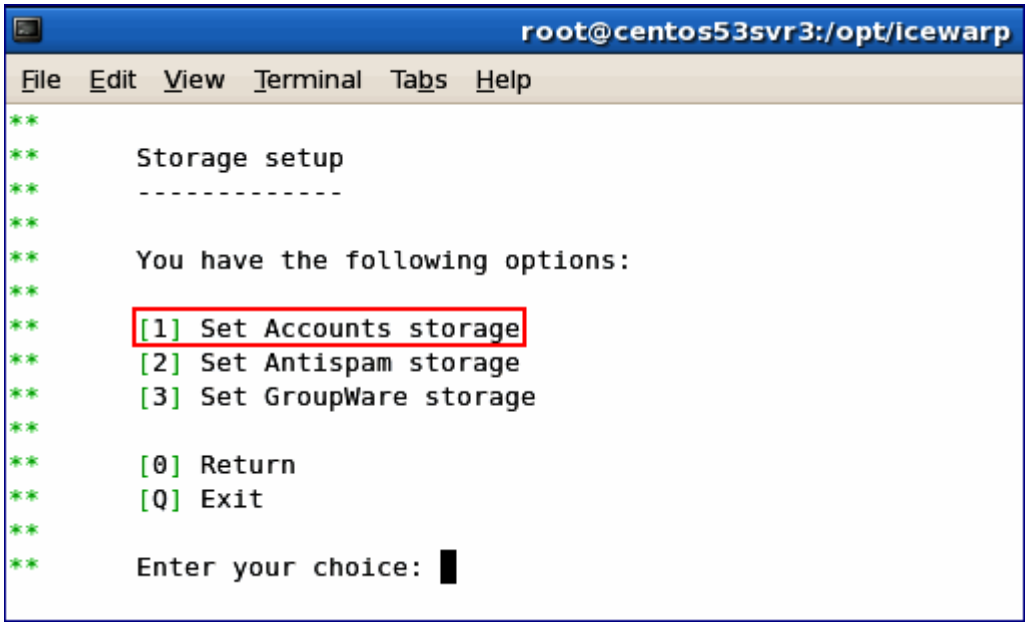
NOTE: If you want to change a groupware storage, the GW service has to be started first (see bellow, how to start the service).

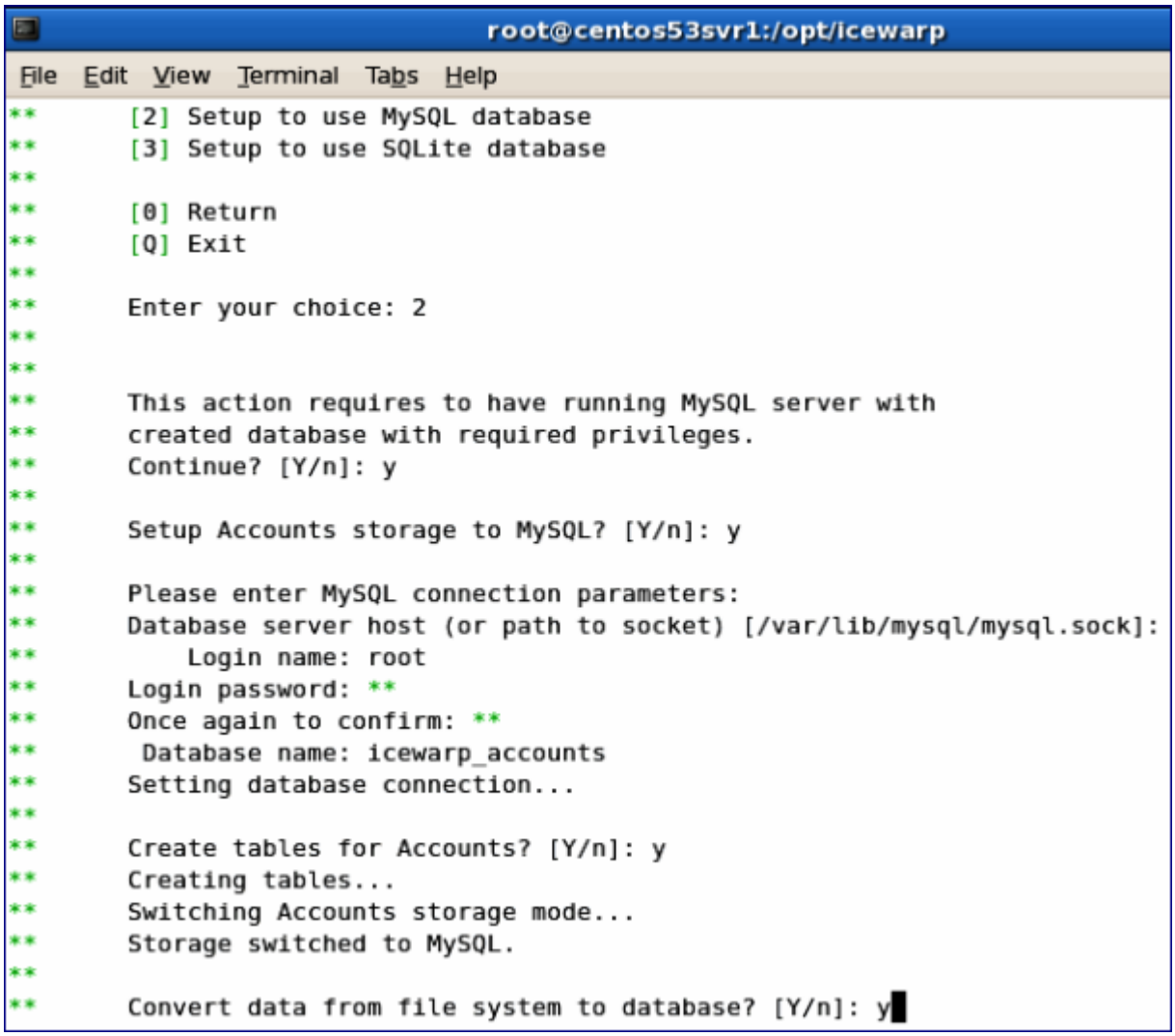


20. Change storage setup to MySQL [3] for accounts, AntiSpam and GroupWare.

NOTE: WebClient, ActiveSync and spam reports databases cannot be changed by this wizard. WebAdmin or Remote Console is needed.





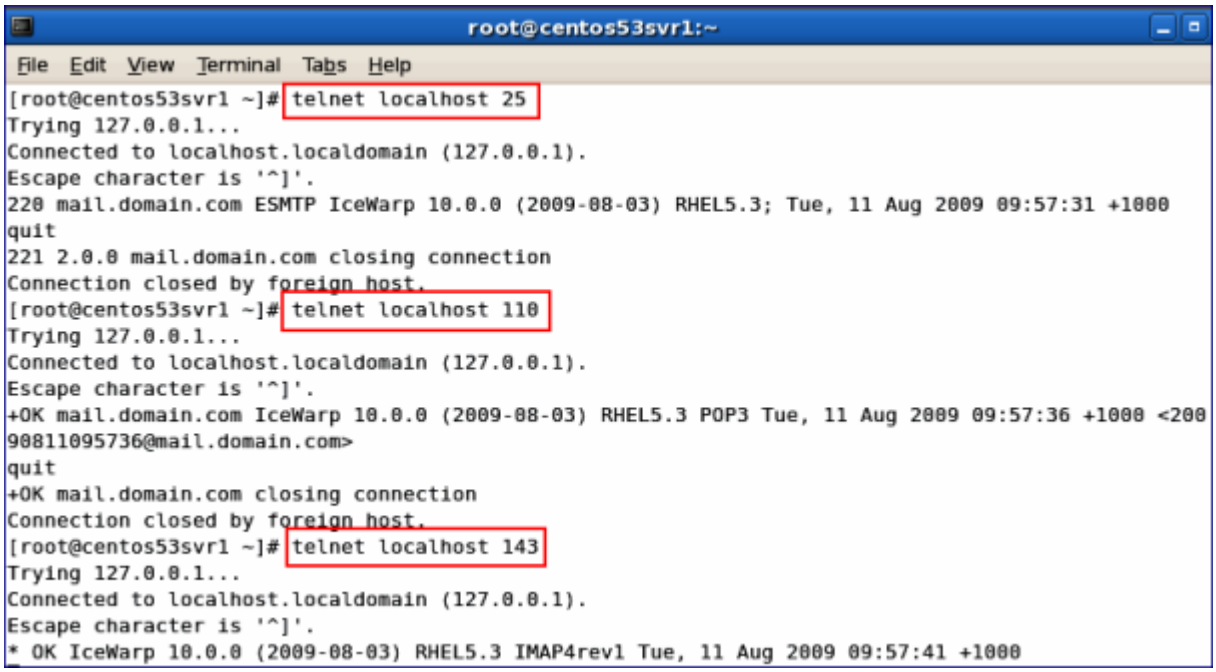


21. IceWarp Server installation done!

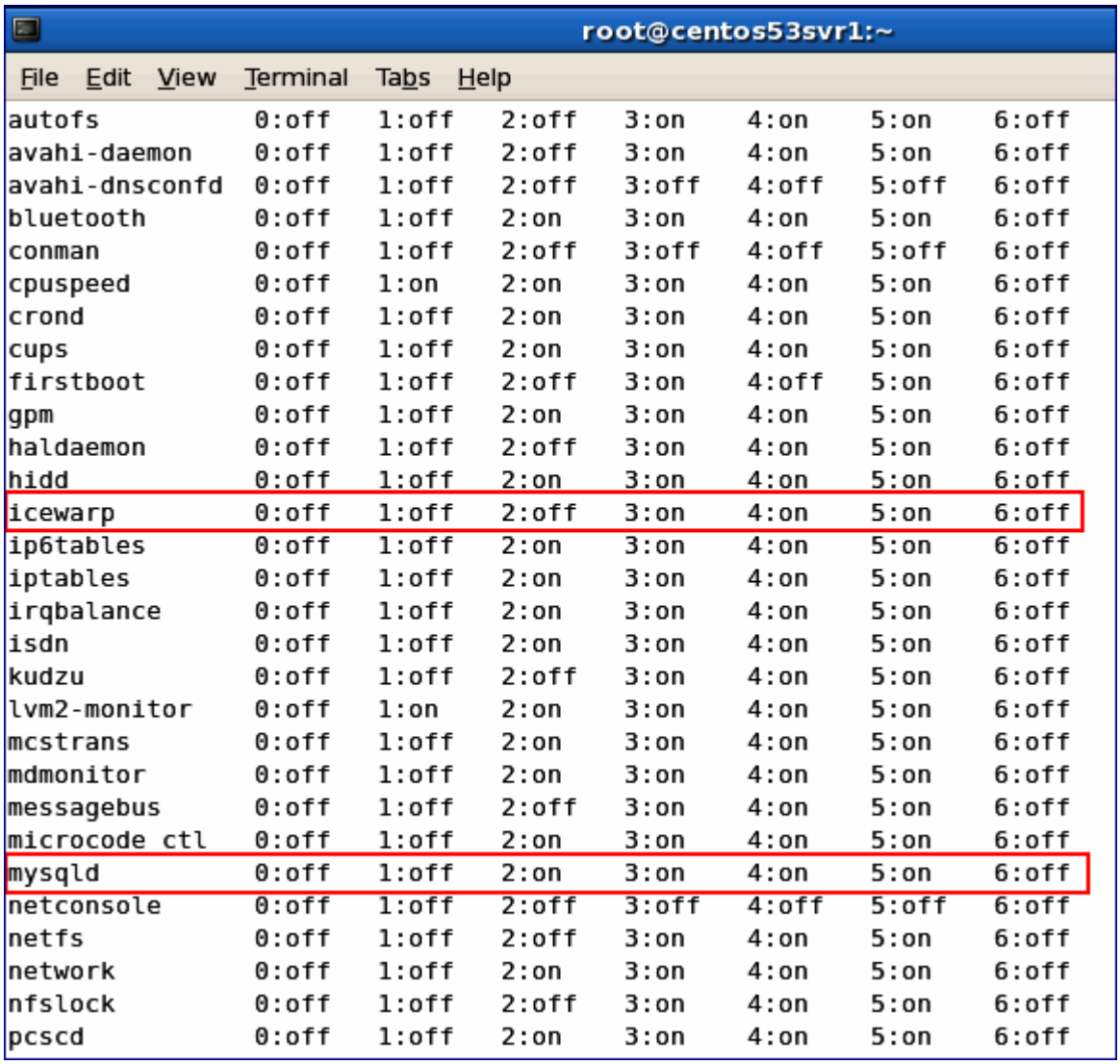
    Logs are available at ***/root/icewarp-install.log*** & ***/root/icewarp-install-error.log***.

    Run the IceWarp Services by executing ***./icewarpd.sh --start*** from the installation directory, by default ***/opt/icewarp***.

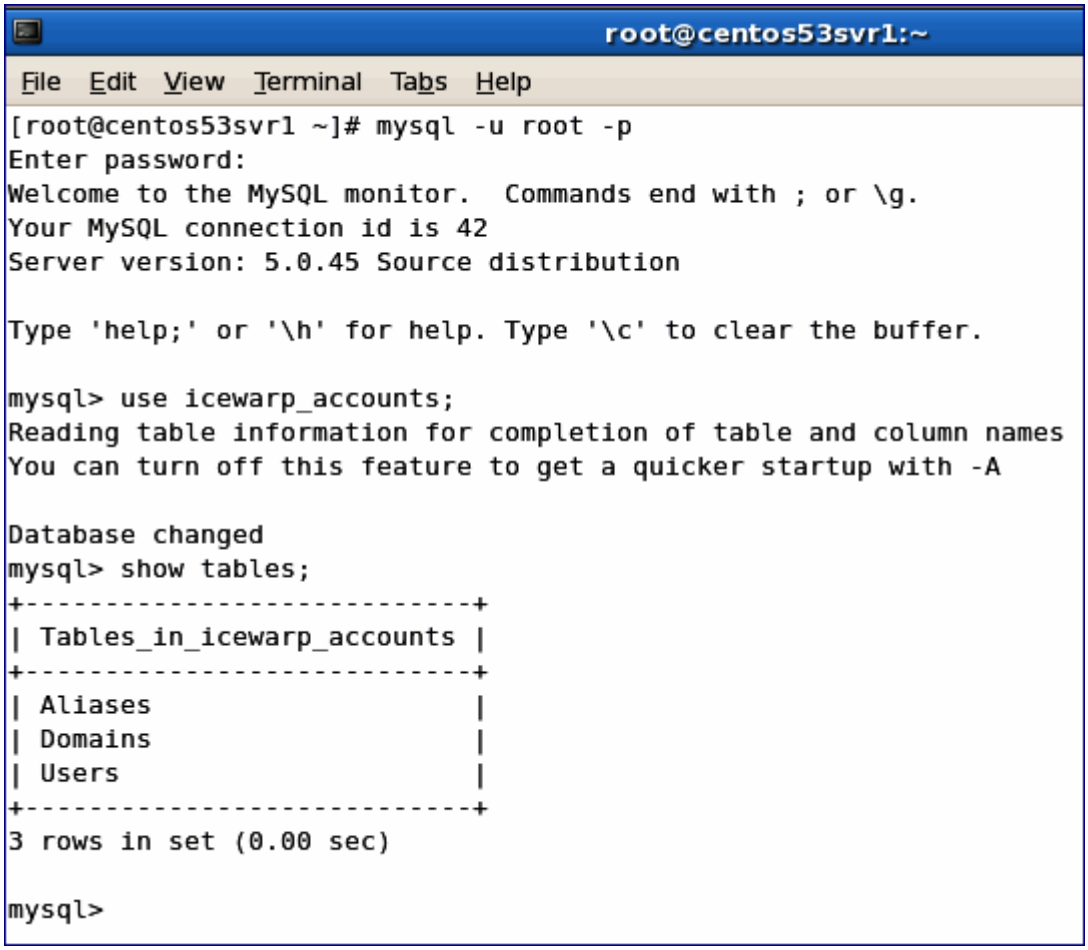
22. Next, verify that primary IceWarp Server services are operating properly.



23. Check services startup using ***chkconfig --list | grep on***.

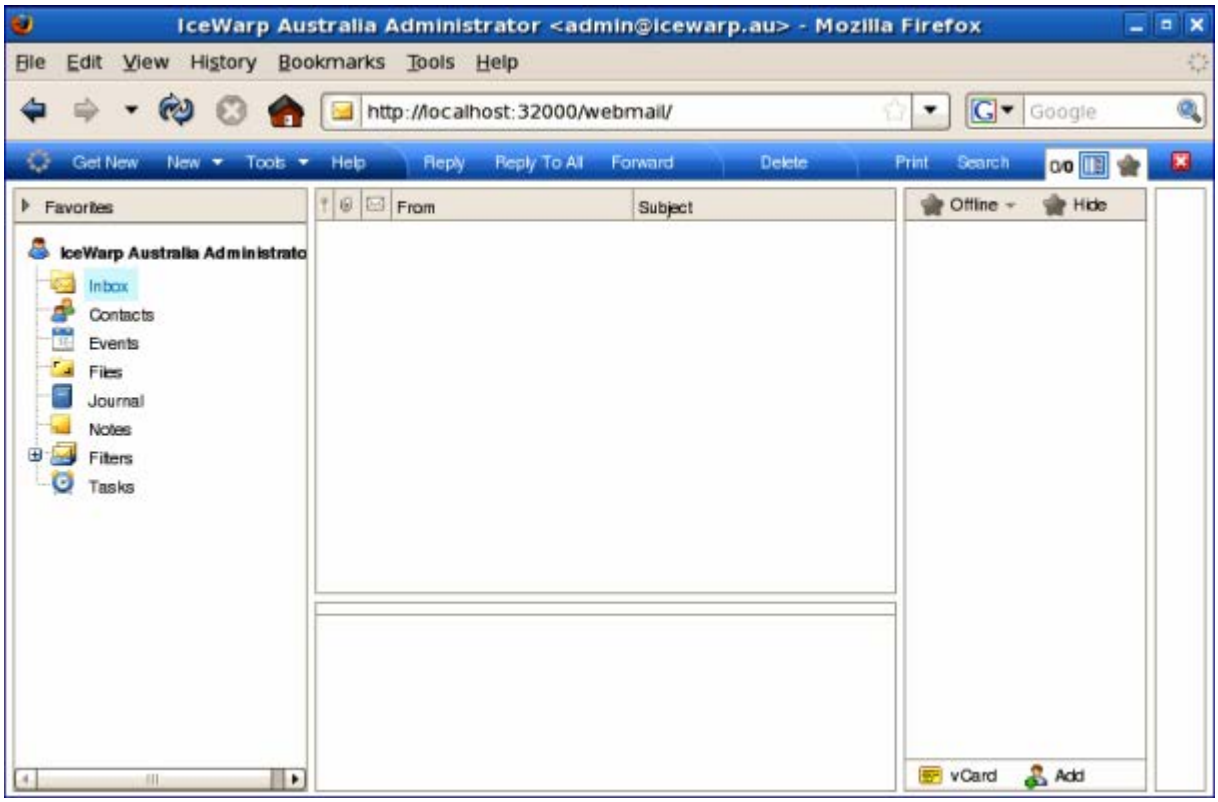


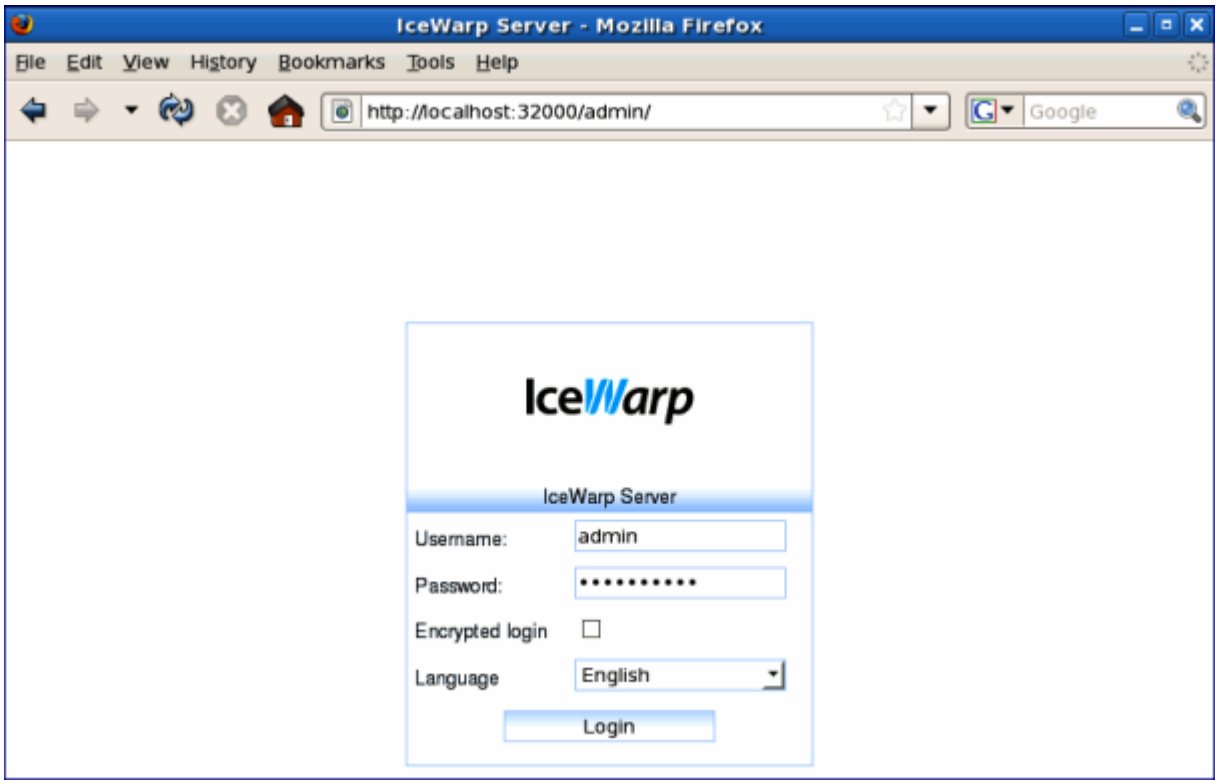
24. Check MySQL tables.

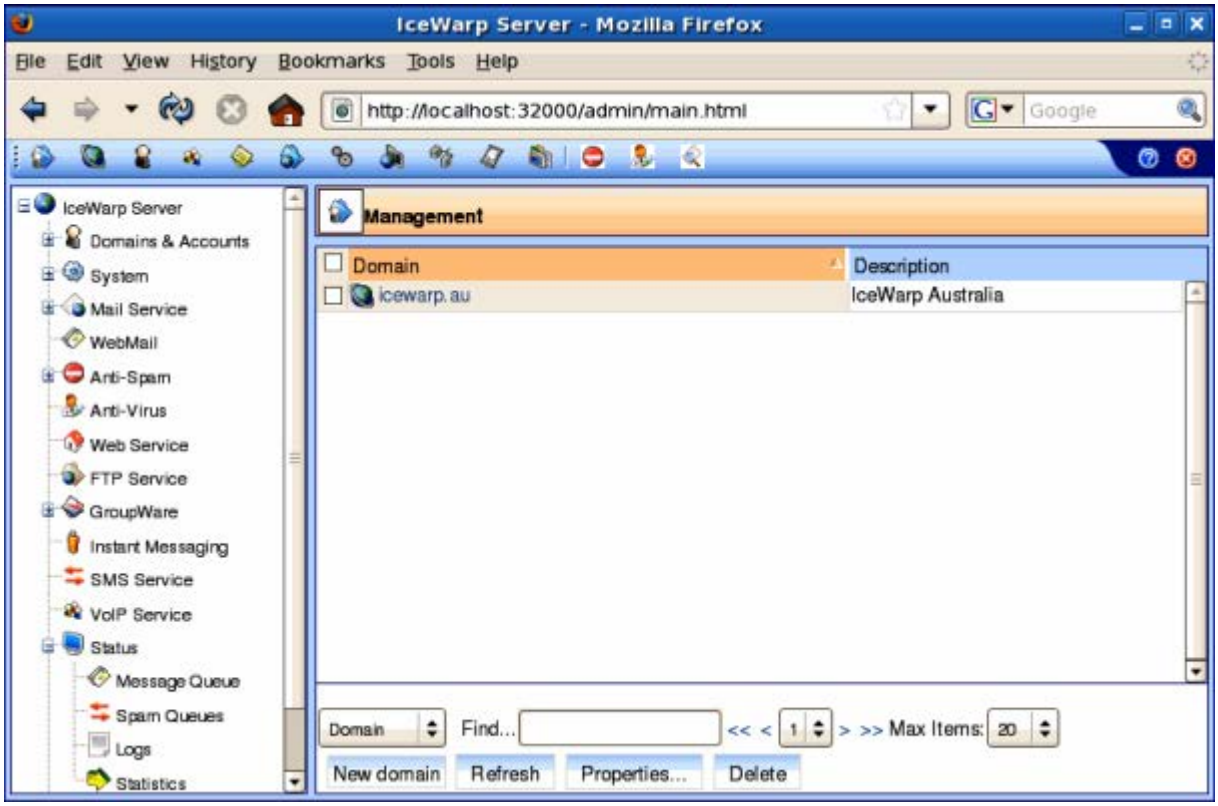


```
root@centos53svr1:~
File  Edit  View  Terminal  Tabs  Help
Your MySQL connection id is 42
Server version: 5.0.45 Source distribution

Type 'help;' or '\h' for help. Type '\c' to clear the buffer.

mysql> use icewarp_accounts;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> show tables;
+----------------------------+
| Tables_in_icewarp_accounts |
+----------------------------+
| Aliases                    |
| Domains                    |
| Users                      |
+----------------------------+
3 rows in set (0.00 sec)

mysql> select * from Aliases;
+---------+------------+----------+
| A_Alias | A_Domain   | A_UserID |
+---------+------------+----------+
| admin   | icewarp.au |        1 |
+---------+------------+----------+
1 row in set (0.00 sec)

mysql>
```

25. Check IceWarp WebClient, IceWarp WebClient Basic, WebAdmin and Remote Console login.


IceWarp Australia Administrator <admin@icewarp.au> - Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://localhost:32000/webmail/
Google
Get New New Tools Help Reply Reply To All Forward Delete Print Search
Favorites
IceWarp Australia Administrato
Inbox
Contacts
Events
Files
Journal
Notes
Filters
Tasks
From
Subject
Offline
Hide
vCard
Add


IceWarp Server - Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://localhost:32000/admin/
Google
IceWarp
IceWarp Server
Username:
admin
Password:
Encrypted login
Language
English
Login



26. Single Sign-On Multiple domain login

NOTE: Single Sign-On service name consists of two parts: vhost@ADSERVER.

vhost can be the same as long ADSERVER is the same for multiple IceWarp domains. Thus when administrator wants to have multiple SSO enabled domains connected to multiple AD domains, he has to have different vhost parts.

Silent Installation

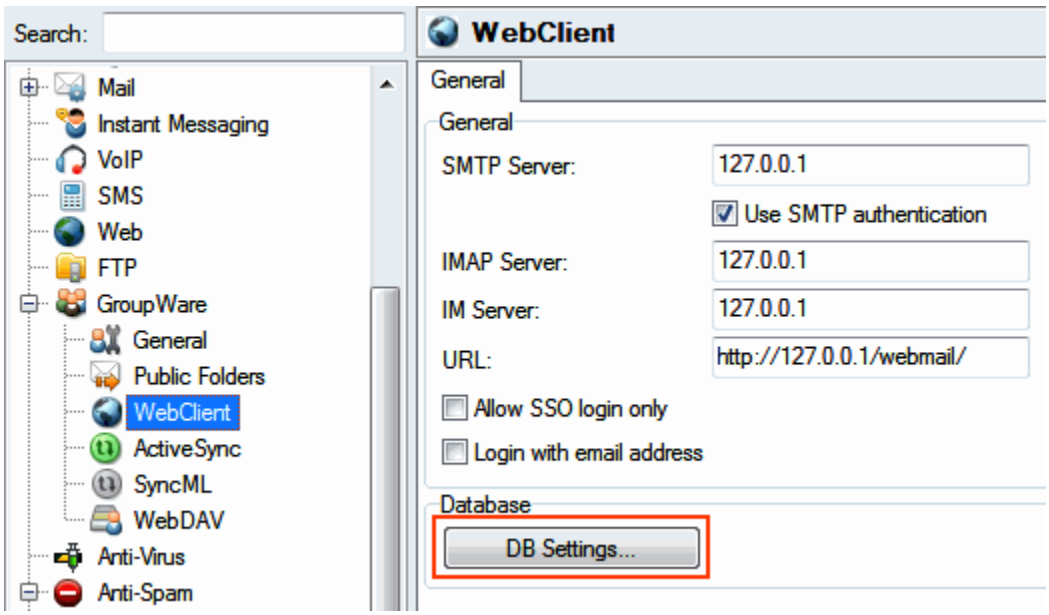
This useful feature can streamline automated upgrades. When such a silent installation is run, default values (i.e. those found before the upgrade) are used.

To run this silent installation, use the ***install.sh --auto*** command.

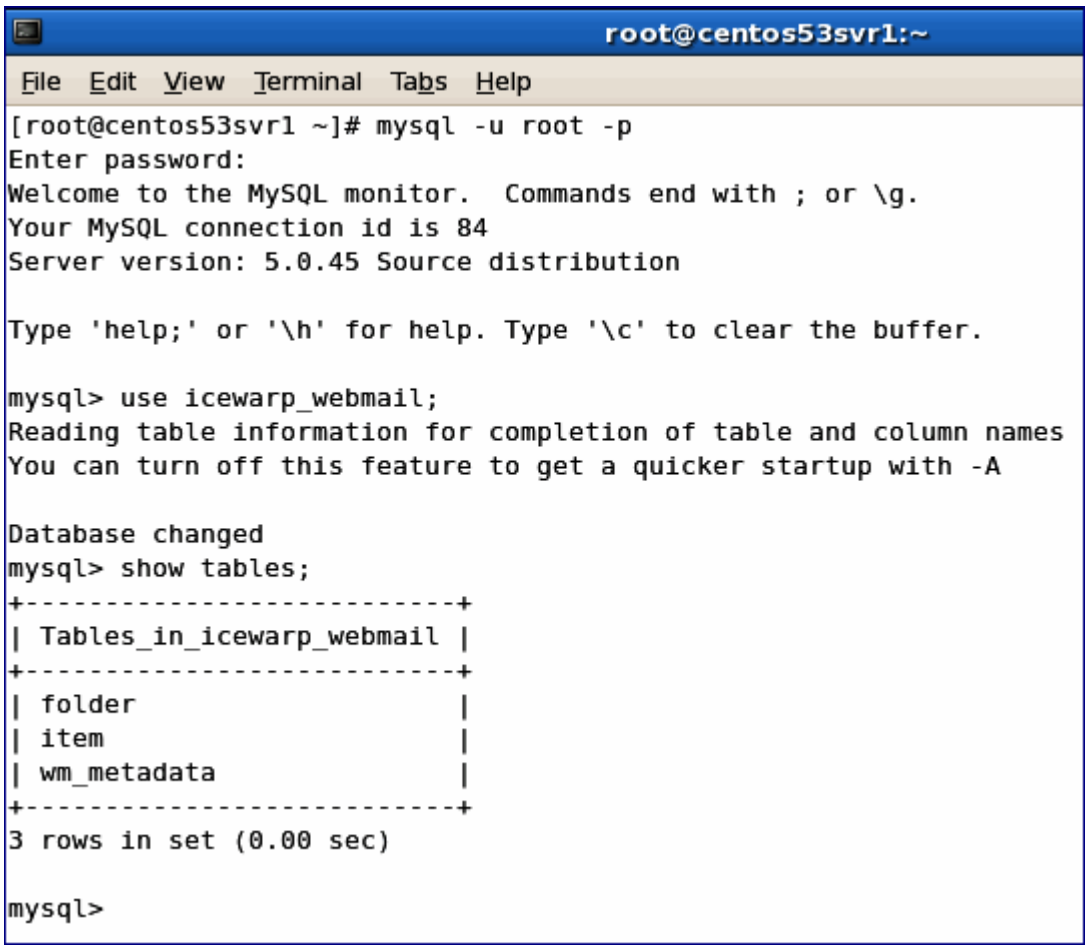
It is possible to run this command manually, or to create a custom script and incorporate the command into it.

Using MySQL Database for IceWarp WebClient

1. Change setting in IceWarp Server to use ***icewarp_webmail*** database in MySQL.



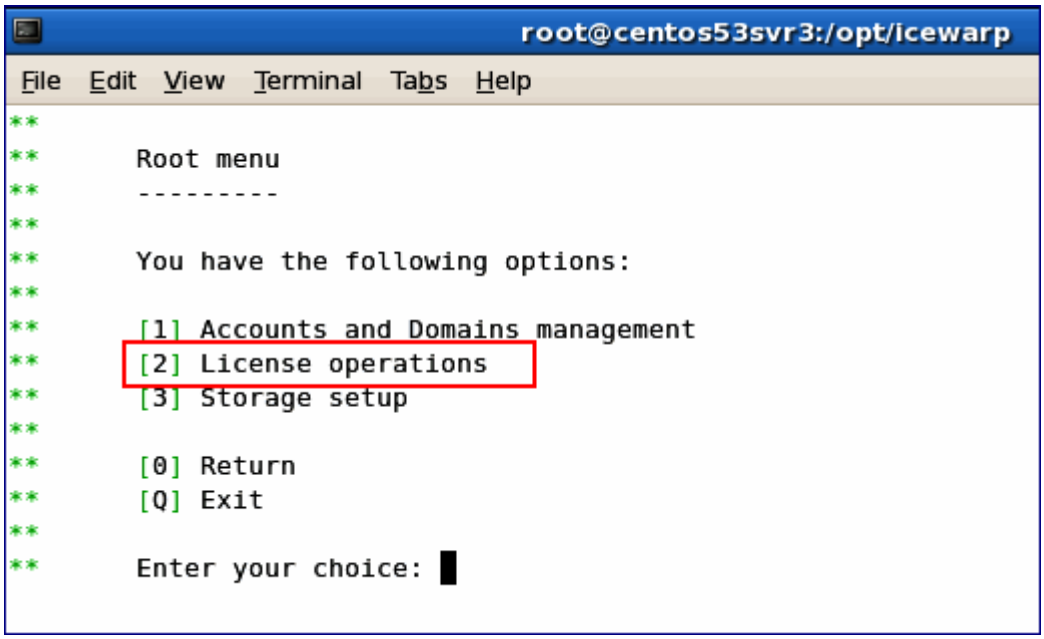
2. After logging into IceWarp WebClient, IceWarp Server will create the necessary tables …



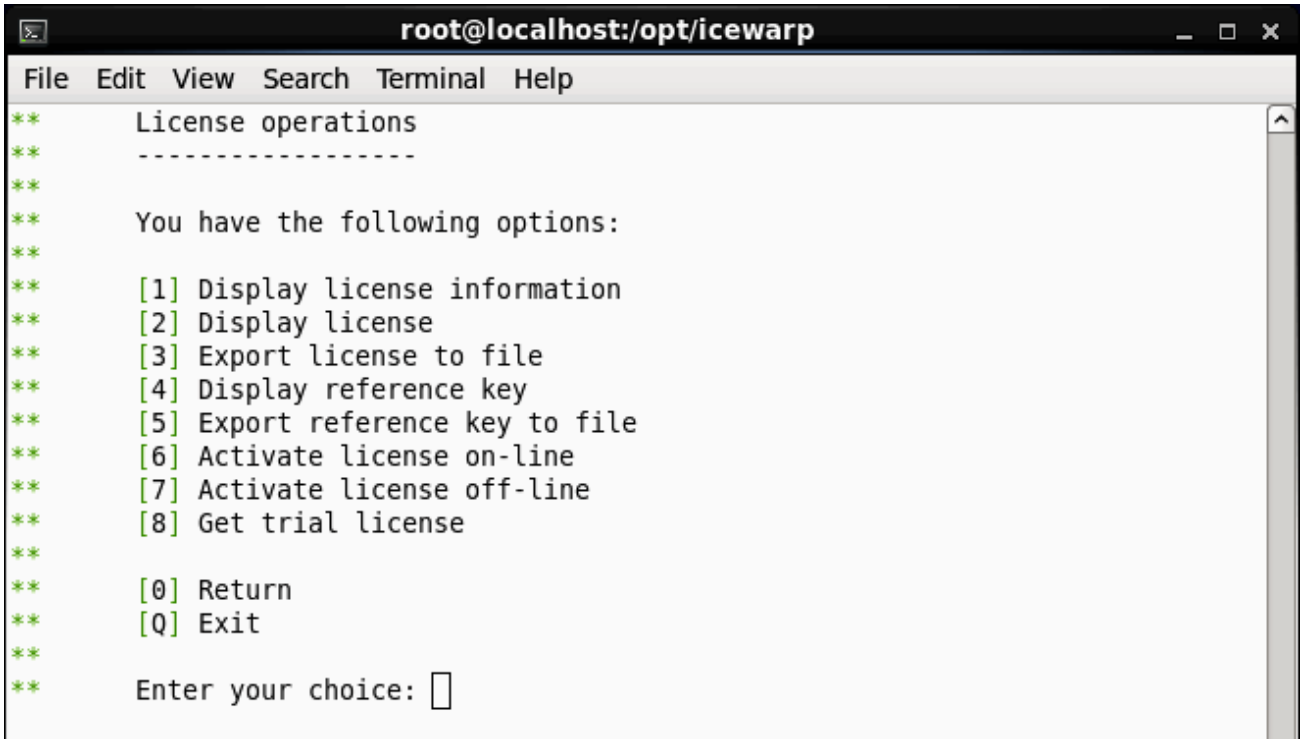
NOTE: This applies for FRESH installation, for existing installations you should rather migrate the WebClient PDO DB in System – Tools – DB Migration (or else you lose colored flags in WebClient and pure POP3 accounts read status).

New License Registration

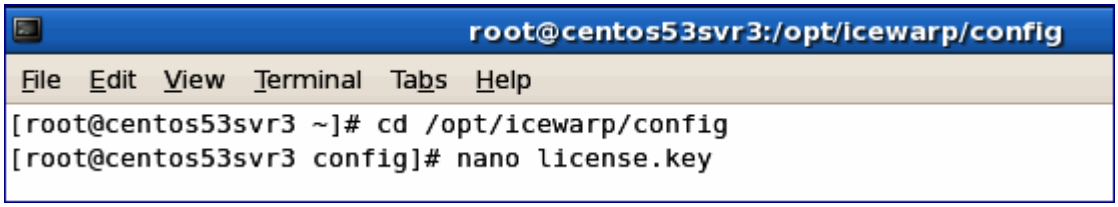
1. Start the **./wizard.sh** from **<pathtoicewarp>** and go to ***[2] License Operations***. (WebAdmin or Remote Console can be also used for this task.)

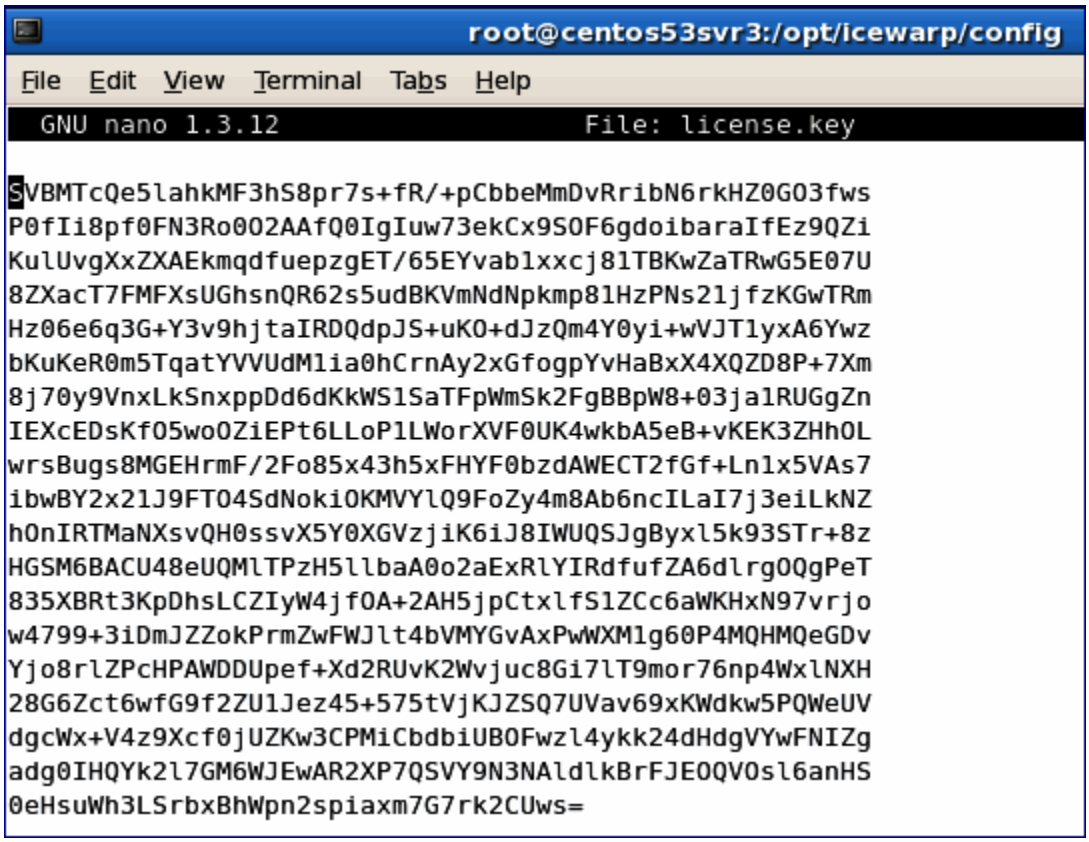


2. Select ***[5] Export reference key to file***, save the file to **<filename>.xml** and send it to your IceWarp Partner for processing of your new license key.

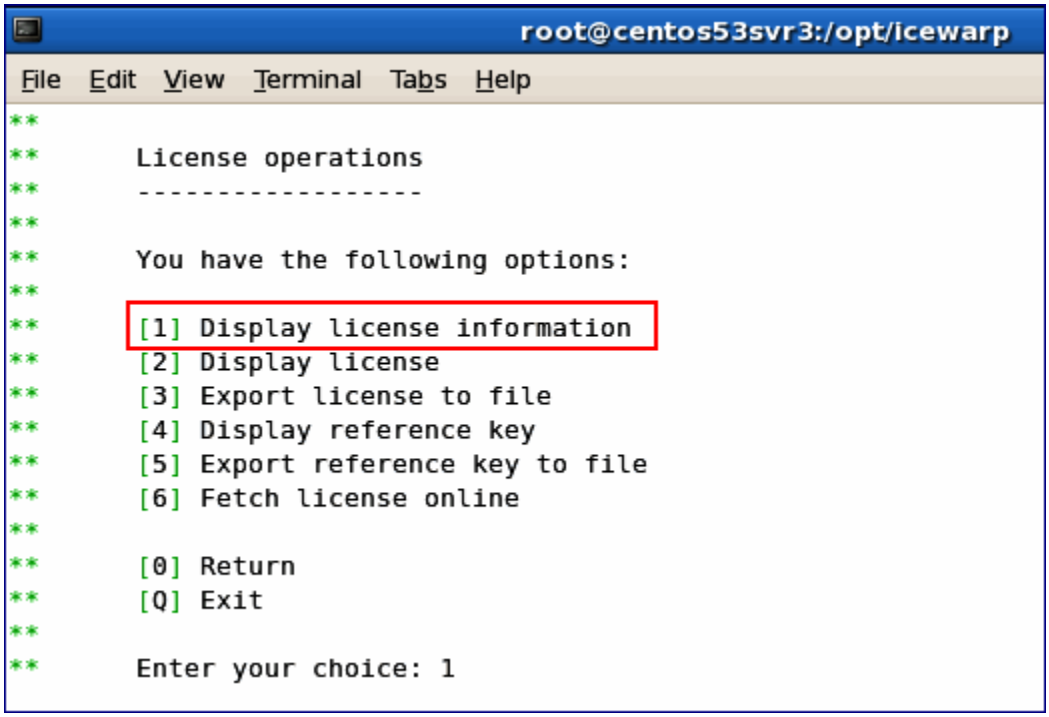


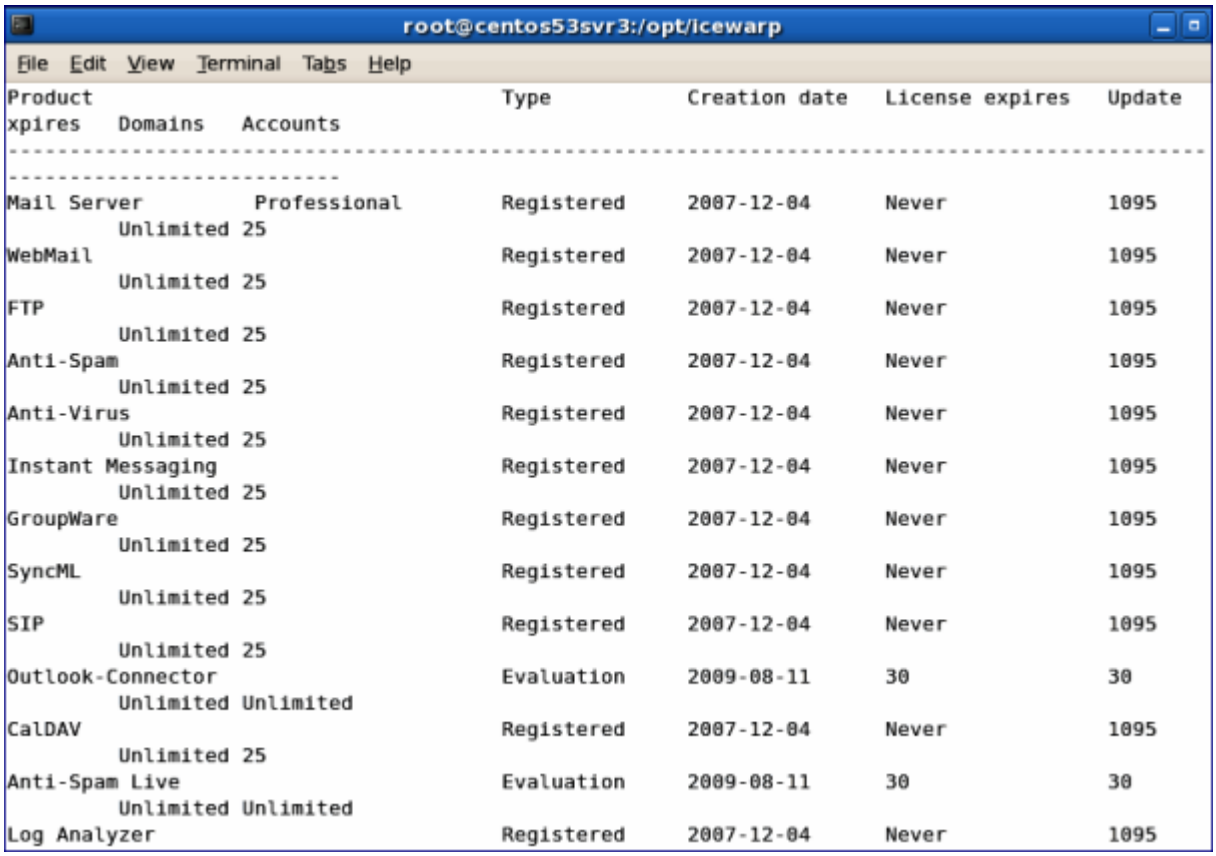
3. Once your NEW license has been processed, it will be e-mailed to you. Copy & paste the license block into **<pathtoicewarp>/config/license.key**.





4. You may then review and verify your license using the **wizard.sh*[1] Display License Information***.




root@centos53svr3:/opt/icewarp
File Edit View Terminal Tabs Help
Product Type Creation date License expires Update
xpires Domains Accounts
Mail Server Professional Registered 2007-12-04 Never 1095
Unlimited 25
WebMail Registered 2007-12-04 Never 1095
Unlimited 25
FTP Registered 2007-12-04 Never 1095
Unlimited 25
Anti-Spam Registered 2007-12-04 Never 1095
Unlimited 25
Anti-Virus Registered 2007-12-04 Never 1095
Unlimited 25
Instant Messaging Registered 2007-12-04 Never 1095
Unlimited 25
GroupWare Registered 2007-12-04 Never 1095
Unlimited 25
SyncML Registered 2007-12-04 Never 1095
Unlimited 25
SIP Registered 2007-12-04 Never 1095
Unlimited 25
Outlook-Connector Evaluation 2009-08-11 30 30
Unlimited Unlimited
CalDAV Registered 2007-12-04 Never 1095
Unlimited 25
Anti-Spam Live Evaluation 2009-08-11 30 30
Unlimited Unlimited
Log Analyzer Registered 2007-12-04 Never 1095

Migration from Windows to Linux

To migrate IceWarp Server from Windows to Linux, use IceWarp Migrator – download here: https://www.icewarp.com/downloads/tools/ (**IceWarp to IceWarp Migration Tool**).

webserver.dat Migration

webserver.dat resides in the **config** subdirectory of IceWarp server installation and in contrast to other **config** files, its Windows and Linux differences are not handled automatically by settings restore. Thus you need to do the changes manually. Linux server will not work with **webserver.dat** from Windows and vice versa. There are basically three options how to migrate **webserver.dat**:

1. The more simple way is to backup **webserver.dat** from the Linux installation and copy it back after Windows settings restore. This is recommended if user does not configure web server in any way – no pool tuning and only default web.
2. The second way is to merge **webserver.dat** from Windows and Linux. This can be best done by some merge tool. Here is a list of differences in the default webserver's dat for reference:

Windows line	Linux line
<MODULE>(fastcgi);php\php.exe</MODULE>	<MODULE>(fastcgi)var/php.socket;scripts/phpd.sh</MODULE>
<MODULE>modules\wcs.dll</MODULE>	<MODULE>(isapi)modules/libwcs.so</MODULE>
<SCRIPT>webdav\index.html</SCRIPT>	<SCRIPT>webdav/index.html</SCRIPT>
<SCRIPT>activesync\index.html</SCRIPT>	<SCRIPT>activesync/index.html</SCRIPT>
<SCRIPT>autodiscover\index.html</SCRIPT>	<SCRIPT>autodiscover/index.html</SCRIPT>
<PATH>..\install\</PATH>	<PATH>../install/</PATH>
<PATH>..\doc\</PATH>	<PATH>../doc/</PATH>

3. The third way is to rename the file – when you forget to backup the **webserver.dat** file and do not want to merge it, you can also rename **webserver.dat** and run installation of Linux server again. **webserver.dat** will be recreated. Again, this scenario is not suitable when you did some modifications of the Web server configuration.

Controlling IceWarp Server in Linux

Starting Server and/or Services

[linux]$ ./icewarpd.sh --start

– starts "icewarpd" and automatically starts all services, except PHP, which is started when first HTTP request arrives.

[linux]$ ./icewarpd.sh --start control|gw|im|pop3|smtp|all

– starts the selected service or all services.

If the control is started, it starts PHP on the first HTTP request.

Stopping Server and/or Services

[linux]$ ./icewarpd.sh --stop

– stops all running services, stops "icewarpd" and also PHP. This is the command for complete server shutdown.

[linux]$ ./icewarpd.sh --stop control|gw|im|pop3|smtp|all

– stops selected service or all services. This command causes PHP stop together with control.

Service Icewarpd Functionality

When the "icewarpd daemon" is running, it:

- checks every 10 seconds whether all started services are running. If not, service is re-started
- executes Kaspersky service and updater to run with root privileges
- kills orphaned childs of services
- on exit kills all running *kavscanner* processes by it's name. To disable this, define environment variable of *IWS_NO_KILL_KAVSCANNER*
- runs with root privileges even if server does not.

Commands Table

Action \ Platform	**RHEL 5 and RHEL 6**	**Other distributions**
Start all services and icewarpd	[pc]$ service icewarp start	[pc]$ ./icewarpd.sh --start
Stop all services and icewarpd	[pc]$ service icewarp stop	[pc]$ ./icewarpd.sh --stop
Restart all services and icewarpd	[pc]$ service icewarp restart	[pc]$ ./icewarpd.sh --restart
Start specific service	[pc]$ ./icewarpd.sh --start x	[pc]$ ./icewarpd.sh --start x
Stop specific service	[pc]$ ./icewarpd.sh --stop x	[pc]$ ./icewarpd.sh --stop x
Check specific service	[pc]$ ./icewarpd.sh --check x	[pc]$ ./icewarpd.sh --check x

Possible services are: control, gw, im, pop3, smtp, all.

IceWarp Server Administration

Windows Administration Console

- unzip remote *config* Windows executable available in installation subdirectory in your IceWarp installation, to connect to IceWarp Server remotely

Frontend administrative authorities of the Web (Web Admin).

- http:// <Your_Server>/admin/

Command Line wizard.sh

- used for quick setup and easy tasks, scriptable for more complex tasks
- can create the initial account, set up database connection, install license, register trial license
- cd /opt/IceWarp
- ./wizard.sh

Command Line tool.sh (direct API access)

- cd /opt/IceWarp
- ./tool.sh

NOTE: The Remote Administration Console and Web Admin depend on working Control service. Here are three examples where you may lose access to the Control service and how tool.sh can be used to resolve the problem.

Example 1

In case user accounts are stored in database and you modify the DB connection specifying an incorrect hostname, you lose access to WebAdmin and remote console, because users fail to authenticate with the accounts database.

*Check **/opt/IceWarp/api/delphi/APIConst.pas** and find the constant that defines the connection string:*

C_System_Storage_Accounts_ODBCConnString = $61 // ODBC Connection String

To view the current connection string, use the command:

./tool.sh display system C_System_Storage_Accounts_ODBCConnString

C_System_Storage_Accounts_ODBCConnString:icewarp_accounts;root;password@;localhost,3,2

*If DB is not on localhost, but on mysql.icewarpdemo.com, you can change the connection string via **wizard.sh** such as:*

./tool.sh modify system
C_System_Storage_Accounts_ODBCConnStringicewarp_accounts;root;password@;mysql.mydomain.com;3;2

(The above line is typed entirely on one line.)

Example 2

*You forget password of an administrator account, so you cannot access Remote Administration Console or Web Administration. You need to create a new administrator account, replacing **newpassword** with the password of choice:*

./tool.sh create account admin2@icewarpdemo.com u_password newpassword u_admin 1

Example 3

*Web service can be stopped (disabled). Enable it using tool **./tool.sh set system C_Mail_Control_Active 1***

BE AWARE: The remote console at the IceWarp site need not be the right one for the server. Always use the console from the **<install_dir>/install** subdirectory – ***remoteconfig-<version>.zip*** file. This is the console that matches.

Installation of Spell Checker Dictionaries

IceWarp Server WebClient has a built-in spell checker based on the Enchant library. Enchant is a free open source library that interfaces many spell checking dictionaries. IceWarp Server uses Hunspell dictionaries, which are the same like, for example, OpenOffice.org uses.

You can download these dictionaries (free) from **http://extensions.services.openoffice.org/dictionary/**.

To install a dictionary, use the ***./scripts/install_hunspell_dictionary.sh*** script. Use the dictionary file name as a first command line parameter and required language ID as the second one.

Example of the command for the Czech dictionary installation:

[linux]# ./scripts/install_hunspell_dictionary.sh /home/user/dicts-cs-2.0.oxt cs_CZ

After dictionary installation, this new dictionary will not be available in WebClient. To configure it, you have to add a record about this dictionary to the WebClient configuration file: **./config/_webmail/spellchecker.xml**

Add a line with your newly installed dictionary between the ***<item>*** and ***</item>*** tags. The line consists of the ***<XY>name of language</XY>*** tag, where XY is the language code of the dictionary (with optional region and variety, see the dictionary file name).

Example:

```
<spellchecker_languages>
 <item>
  <en_US>English</en_US>
  <cs>Czech</cs>
  <pt_BR>Portuguese</pt_BR>
 </item>
</spellchecker_languages>
```

*NOTE: The **<install_dir>/config/_webmail/spellchecker.xml** file is created after the first login to WebClient and after displaying of the dialog for spell checker setting. This dialog is accessible via the **Settings** menu item within the email composer window.*

Adjusting PHP

There are differences between Linux and Windows versions in adjusting PHP. The **webserver.dat** file includes some PHP directives which are not propagated into the PHP start script in Linux.

PHP is started from the **phpd.sh** script which is configured as the default handler for PHP in IceWarp Server.

Bundled PHP FastCGI manager is used. The **phpd.sh** script expects four parameters. Control passes these variables to **phpd.sh**. They are taken from these **webserver.dat** variables:

- webappmaxthreads = ***fcgi_threadpool***, this gives the number of PHP threads, that should run. When ***fcgi_threadpool*** is not specified, global thread pool size is used.
- bindip = ***fcgi_bindip***, the IP on which PHPs listen for requests, typically localhost.
- maxround = ***fcgi_maxrounds***, the number of requests, after which PHP process is respawned. This prevents memory exhaustion caused by possible leaks.
- restart500 = ***fcgi_restart500***, the number of 500 responses, after which PHP process is respawned.

It performs safety checks:

- if ***WEBAPPMAXTHREADS*** is not set, then ***PHP_FCGI_CHILDREN*** is set to 15,
- if ***WEBAPPMAXTHREADS*** is not a number, then ***PHP_FCGI_CHILDREN*** is set to 15.

How IceWarp Server determines ***WEBAPPMAXTHREADS***:

- If **webserver.dat** includes the ***FastCGIThreadPool*** variable with value greater than or equal to zero, then it is passed to configured FastCGI (defult is ***phpd.sh***) as ***WEBAPPMAXTHREADS***.
- If the above condition is not met, then API variable of ***C_WebService_AppMaxThreads*** is passed to configured FastCGI (defult is **phpd.sh**) as ***WEBAPPMAXTHREADS***.

PHP logs in IceWarp/log directory:

- **phpstartup.log** – the output of PHP start command. If PHP does not start at all, often because of missing dependency, the reason can be found here.

PHP logs in IceWarp/logs/php-fpm directory:

- **php-fpm.log** – the log of fastCGI pool manager, default error level is warning. You can find reports about PHP processes respawning here.
- **phpslow.log** – if PHP thread is running for more than 2 minutes, current thread backtrace is dumped here. This is good entry point for examining, why PHP things (e. g. WebClient) are slow.

Running CentOS with Newer MySQL Versions (5.5.x and Later)

The easiest (and recommended) way how to run the latest MySQL on IceWarp Linux Server is to use the ***dev.mysql.com's*** repository. It is the most effective solution that includes the latest version.

Example for CentOS 6.5

wget http://dev.mysql.com/get/mysql-community-release-el6-5.noarch.rpm

rpm -Uvh mysql-community-release-el6-5.noarch.rpm

yum install mysql mysql-server mysql-libs mysql-libs.i686

For more information, refer to http://dev.mysql.com/doc/mysql-repo-excerpt/5.6/en/linux-installation-yum-repo.html

Another way (used up to now)

IceWarp Server (especially WebClient) was optimized to use the InnoDB engine more efficiently (mostly the use of MySQL engine for WebClient PDO cache). This engine is improved in every MySQL release. Servers should run V5.5.x instead of V5.1.x which is included in repositories.

First, download RPM packages from ***dev.mysql.com***. The list of what you need is as follows:

MySQL-server-<version>.<architecture>.rpm

MySQL-shared-compat-<version>.<architecture>.rpm

With 64bit builds of IceWarp Server, both *x86_64* and *i686* versions of *mysql-shared-compat* RPM are needed.

Then you need to install those packages. This can be done either by the *rpm* command or with a local repo and *yum*. The first option can be done by issuing a **similar** command as:

rpm -ivh MySQL-server-5.6.17-1.el6.x86_64.rpm

However, this option has a drawback regarding dependencies. You have to solve them yourself.

The latter option incorporates *yum* and a local repo. The advantage of this solution is that *yum* will handle the installation for you (resolve dependencies or upgrades). For more information about creating a local repo, refer to the **Local Repository Creation** chapter (see further).

You may think of using repo REMI instead of creating a local one, but it seems they do not provide 32bit client library (*libmysqlclient.16.so*) that IceWarp Server requires for its php extension. However, any repo offering *MySQL-shared-compat-<version>.i686.rpm* with *libmysqlclient.16.so* included can work.

Anyway, local repo solution provides a possibility to run a newer (or latest) version of MySQL that is offered by REMI or other repos.

If older MySQL instance has been already installed, backup your databases (better safe than sorry) and remove the instance. It may be possible to perform upgrade just by updating your local repo with newer RPMs (this can work for minor version upgrades) and using the *yum* update command. In any case, be ready to remove the current MySQL instance and subsequently install a newer version (expect service outage!).

*NOTE: When installing from RPMs downloaded from **dev.mysql.com**, the service name is **mysql** (not mysqld).*

If the installation is handled by *yum*, execute the following commands to install server and libraries (otherwise use *rpm -ivh <package_name>*):

yum install mysql-server mysql-libs // 32bit OS

yum install mysql-server mysql-libs mysql-libs.i686 // 64bit OS

Then make sure the service is started on OS boot:

chkconfig --levels 235 mysqld on

Start mysql service:

service mysqld start // use mysql for dev.mysql.com's rpms

Once done, secure mysql installation by running:

mysql_secure_installation

What to answer in MySQL server hardening process (what you want to happen)?

- set new root password

- remove anonymous users

- disallow root login remotely

- remove test database

- reload privilege tables

Local Repository Creation

Step 1: Install *createrepo*

To create Custom YUM Repository, you need to install additional software called *createrepo* on your cloud server. You can install *createrepo* by running the following command from a console:

yum install createrepo

Step 2: Create Repository Directory

You need to create a new directory that will be the location of your Custom YUM Repository and will hold the desired RPM package files. Use the following command from a console (choose a different */repository1* directory name if you like):

mkdir /repository1

Step 3: Put RPM Files to the Repository Directory

If RPM package files are not yet present on your VPS, you need to transfer them to your cloud server via FTP or SSH – use software like WinSCP (free SFTP client and FTP) or similar. You can also download RPM package files directly to your system (internet connection needed) with the *wget* command from a console (change HTTP link accordingly, this is just an example, please):

wget http://mirror.lihnidos.org/CentOS/6/os/i386/Packages/NetworkManager-0.8.1-43.el6.i686.rpm

If RPM files are already present on your system, you need to copy or move these files to the newly created directory (within *Step 2*). You can move RPM files with the following command from a console (change */path/to/rpm* and */repository1* accordingly, please):

mv /path/to/rpm /repository1

You can copy RPM files with the following command from a console (change */path/to/rpm and /repository1* accordingly, please):

cp /path/to/rpm /repository1

Step 4: Run *createrepo*

The *createrepo* command reads through Custom YUM Repository directory (*Step 2*) and creates a new directory called *repodata* in it. *Repodata* directory holds the metadata information for the newly created repository. Every time You add additional RPM package files to your Custom YUM Repository, you need to re-create Repository metadata with the *createrepo* command. You can create new repository metadata by running the following command froma console (change */repository1* accordingly, please):

createrepo /repository1

Step 5: Create YUM Repository Configuration File

To start using the newly created Custom YUM Repository, you have to create the corresponding YUM Repository Configuration file with the *.repo* extension, which must be placed to the */etc/yum.repos.d/* directory. Instructions how to create the YUM Repository Configuration file are covered in the ***YUM Repository Configuration File*** section. Example of the Custom YUM Repository Configuration file: */etc/yum.repos.d/custom.repo*

[customrepo]

name=Custom Repository

baseurl=file:///repository1/

enabled=1

gpgcheck=0

You do not have to set enabled to ***1*** especially when you do not intend to have *yum check* the custom repo each time when it is searching for a package. In this use case, run *yum* with an optional parameter *--enablerepo* when you want to have custom repo included in search (i.e. *yum install --enablerepo=customrepo somecoolpackage*).

Upgrading IceWarp Server

1. Download and unpack a new version installation package.
2. Stop previous IceWarp Server. Although the installer allows to kill the server, it is always better to stop it manually (and wait when it is done).
3. Run the **install.sh** file from the unpacked installation package.
4. Follow the screen instructions, they are very similar to fresh installation. When asked, choose to upgrade.
5. At the end, you will be asked whether you want to run upgrade procedures. Answer ***yes*** in this case. You can also run upgrade procedures later for some reason. Do not use newly installed server before upgrade procedures are finished.

NOTE: The Avast antivirus is available only in the 32bit IceWarp Server version. The Kaspersky antivirus is the default now.

NOTE: When your server license is expired, it is not possible to upgrade. Moreover, services can stop very often (say every hour) in this situation.

Differences between Windows and Linux Versions

Linux version and Windows one are the same feature-to-feature, including:

- LDAP and ActiveDirectory integration
- Avast or Kaspersky Anti-Virus with AutoUpdates
- Commtouch Anti-Spam LIVE engine (ctasd)
- Mail Log Analyzer (see F1 help on how to setup cron job for importerd)
- SQLite3 database engine installed and used by default
- PHP5 with XCache, php_tidy and common libraries
- native support for MySQL, supported version depends on drivers available in distribution's repository. For newer MySQL drivers on CentOS refer to the **Running CentOS with Newer MySQL Versions** chapter.
- command line tool with direct access to API and server constants
- the same unified IceWarpServer API library (RPC, PHP, apiobjectcall)
- the documentation applies with some abstraction if using WebAdmin

There are however differences given by the platform architecture:

- Administration GUI is non-native but runs under Wine
- installation script instead of installer wizard
- UnixODBC is required for Oracle and MSSQL with appropriate driver
- Oracle driver is distributed with Oracle server installation
- As MSSQL driver, the driver from FreeTDS project can be used. Support can help with configuration.
- For FireBird, native client libraries (*libgds.so* or *libfbclient.so*, in embedded mode also others, like *libfbembed.so* etc.) have to be available for loading. I.e. they should be in the system lib directory or copied to the IceWarp lib (lib64) directory. Note that for 64bit IceWarp Server version, you need to have both 32bit and 64bit library versions installed.
- FastCGI only, no support for multi-threaded web server mode

Security Enhanced Linux

On some systems (RHEL5 for example), SELinux is enabled and configured by default in a way that prevents IceWarp Server from running at all. Now, the installer displays a warning that admins should either disable SELinux or refer to this guide.

Disabling SELinux

SELinux can be switched into one of these modes:

- ***enforcing*** – SELinux security policy is enforced
- ***permissive*** – SELinux prints warnings instead of enforcing
- ***disabled*** – no SELinux policy is loaded

IceWarp Server works when SELinux is either in disabled or permissive mode. Enforcing mode can be temporarily switched to permissive mode by the following command: *setenforce 0*

To make the change persistent (i.e. to survive reboot), SELinux configuration file needs to be modified. Commonly it is located at **/etc/selinux/config**. Change *SELINUX=* to *disabled* or *permissive* and reboot.

Configuring SELinux to Work with IceWarp Server

Shared libraries included in IceWarp Server need text relocations, which can be forbidden by SELinux. Exceptions for these libraries need to be added to the SELinux configuration. To do it, follow these steps:

1. Switch SELinux to the permissive mode and start IceWarp Server.
2. Run grep "SELinux is preventing" /var/log/messages, this will display problematic libraries.
3. Allow text relocations for these libraries executing:

   chcon -t textrel_shlib_t '<filename>'

   semanage fcontext -a -t textrel_shlib_t '<filename>'

4. Restart IceWarp Server.
5. Go to 2.

It is necessary to repeat these steps until no new libraries appear. Here is an example list of libraries that need an exception with IceWarp Server 11.2.0.0:

chcon -t textrel_shlib_t '/opt/icewarp/modules/libwcs.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/modules/libwcs.so'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/updater/libupdsdk8.so.8.5.0.47'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/updater/libupdsdk8.so.8.5.0.47'

chcon -t textrel_shlib_t '/opt/icewarp/modules/libpurple.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/modules/libpurple.so'

chcon -t textrel_shlib_t '/opt/icewarp/modules/libemail.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/modules/libemail.so'

chcon -t textrel_shlib_t '/opt/icewarp/modules/libservice.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/modules/libservice.so'

chcon -t textrel_shlib_t '/opt/icewarp/php/ext/ioncube_loader_lin_5.4.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/php/ext/ioncube_loader_lin_5.4.so'

chcon -t textrel_shlib_t '/opt/icewarp/php/ext/libicewarpphp.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/php/ext/libicewarpphp.so'

chcon -t textrel_shlib_t '/opt/icewarp/lib/libapi.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/lib/libapi.so'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/libkave8.so.8.5.0.42'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/libkave8.so.8.5.0.42'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/libkavesd.so.8.5.0.42'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/libkavesd.so.8.5.0.42'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/libipclib.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/libipclib.so'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/libkavessi.so.8.5.0.42'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/libkavessi.so.8.5.0.42'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/libkavess.so.8.5.0.42'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/libkavess.so.8.5.0.42'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/params.ppl'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/params.ppl'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/tm.ppl'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/tm.ppl'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/loader.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/loader.so'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/schedule.ppl'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/schedule.ppl'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/regmap.ppl'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/regmap.ppl'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/propmap.ppl'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/propmap.ppl'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/nfio.ppl'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/nfio.ppl'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libapp_core_legacy.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libapp_core_legacy.so'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libkl_service.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libkl_service.so'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libkey_value_storage.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libkey_value_storage.so'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libupdater_meta.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libupdater_meta.so'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libcf_server_meta.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libcf_server_meta.so'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libam_meta.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libam_meta.so'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libapp_core_meta.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libapp_core_meta.so'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libinstrumental_services.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libinstrumental_services.so'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libksn_meta.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libksn_meta.so'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libstorage.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libstorage.so'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libupdate_adaptor.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libupdate_adaptor.so'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libavs_eka.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libavs_eka.so'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libthreats_disinfection.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libthreats_disinfection.so'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libksn_facade.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libksn_facade.so'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libmd5_cache.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/ppl/libmd5_cache.so'

chcon -t textrel_shlib_t '/opt/icewarp/kaspersky/updater/libupdater.so'

semanage fcontext -a -t textrel_shlib_t '/opt/icewarp/kaspersky/updater/libupdater.so'

This list can be used as a template, however it depends on enabled services, server bitness and AntiVirus version.

Miscellaneous

Document Preview

Document conversion services performed by ***libreoffice*** (various document types –> PDF) are not avaliable on RHEL5 and DEB6 (support for DEB6 ended with 11.4.0.0 release).

PDF to image is available

On Linux document preview image is generated using ghostscript by default. It can be switched to libreoffice. To switch it, administrators needs to write ***libreoffice*** binary name (or path, when it is needed) to *{{C_System_LibreOfficeBinary}}* API variable.

Note, that libreoffice 5.0 or above is needed to successfully convert the document to image. It is admin responsibility to set libreoffice binary variable to version that is high enough.

How to Uninstall

If you want to uninstall IceWarp Server, use the **uninstall.sh** file, that is placed in the **<install_dir>/** folder.