OPEN-XCHANGE™ Whitepaper

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Open-Xchange Server

Backup Whitepaper

How to back up and restore
your Groupware Data

v1.20

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1. Introduction

1.1. A Simple Backup Procedure

Several steps are necessary to backup the data stored in the Open-Xchange server and all related configuration files. The following pages provide an outline of how to backup and restore an Open-Xchange Server. The instructions assume that a standard Open-Xchange installation is to be backed up and that it will be restored onto a newly rebuilt server. If these assumptions do not describe your situation, you may need to modify the procedures to suit your particular configuration.

1.2. Full Backup versus incremental Backup

The procedure outlined below provides a full backup of the Open-Xchange server. Unlike an incremental backup, which creates series snapshots of changes to a system over time, undertaking a full backup will produce a single set of backup files that will completely restore the entire installation.

Backup frequency is dependant on the volatility of data on a particular system and on the value of that data. If there are frequent updates or critical data is stored then it should be backed up more frequently than less volatile or less important data.

Each time the simple backup procedure described in this manual run it will create a copy of the entire data store. This is time consuming and also has the potential to use a large amount of storage space. It is possible to approximate an incremental approach using a utility such as rsync to copy only those files that have changed to a designated location, either another machine or partition, and then creating the restore files using that data.

Unlike a true incremental backup, such a procedure would *not* allow the user to restore intermediate data. Only the most recent data would be available. If such a quasi-incremental approach is desired it would be a good idea to alternate between two or more storage locations to create snapshots.

1.3. A Note on Backing up Files

In order to reduce the possibility for error in the backup and restoration process, all of the tar files generated by the procedures outlined in this guide store the absolute file path to backed up files' locations on the server's hard drive. This allows for easier system restoration, as it is not necessary to verify the locations of the target directories in order to extract the files. If more flexibility is desired (i.e. you wish to restore a backup to a different server with a different configuration from the one from which it originated—a procedure not recommended), then it is possible to do so by first changing into the directory to

be backed up and then issuing the tar command from there, rather than provide tar the absolute path of the folder to backed up. Please note that users wishing to perform such a backup will also need to modify the restoration procedure accordingly.

2. Backup Steps

2.1. Backup Step 1 – Preparing for the Backup

Shut down the Open-Xchange Server by issuing the following command at the command prompt:

```
rcopenexchange stop
```

Shut down cyrus with the following command:

```
/etc/init.d/cyrus stop
```

Assuming you are using OpenLDAP (the default directory server) with your installation of Open-Xchange, shut down LDAP with the following command:

```
/etc/init.d/ldap stop
```

2.2. Backup Step 2 – Backup the SQL database

If you are using PostgreSQL, you can use the built-in tools to dump the contents of the Open-Xchange Server database.

First log in as user "postgres":

```
su postgres
```

If you do not know the password of your "postgres" account, you can login as root and then to the "postgres" account without the need of a password.

Next, use the command line tool

```
pg_dump –U postgres –f DB_DUMP_FILE openexchange
```

to dump the SQL database to the File DB_DUMP_FILE.

Exit the postgres account and log in as root.

2.3. Backup Step 3 – Backup the Directory Server

If you are using OpenLDAP, you can execute the following to dump the LDAP database to LDAP_DUMP_FILE.

```
slapcat –l LDAP_DUMP_FILE
```

2.4. Backup Step 4 – Backup the Open-Xchange Groupware Data

The Open-Xchange groupware data, i.e. Documents, Knowledge and other Data is stored in /var/opt/openexchange.

Backup the entire directory recursively:

```
tar –cvzf oxdata.tar.gz /var/opt/openexchange/*
```

2.5. Backup Step 5 – Backup the Open-Xchange Server Configuration Files

The Open-Xchange Server's configuration files are stored in /opt/openexchange/etc

Backup the entire directory recursively:

```
tar -cvzf  oxconfigurationfiles.tar.gz /opt/openexchange/etc/* \
                                       /etc/init.d/openexchange \
                                       /etc/init.d/openexchange-daemons \
                                       /opt/openexchange/etc/*
```

Note: The backslashes (\) in the above are not part of the command; they serve to indicate that the command continues on the next line.

2.6. Backup Step 6 – Backup E-mail

Under a standard installation, the Open-Xchange Server stores e-mail in the directory /var/spool and other related files in /var/lib/imap. Archive these directories recursively:

```
tar -cvzf oxmail.tar.gz /var/spool/* /var/lib/imap/*
```

It is also a good idea to produce an ASCII dump of your mailbox list database, although it will generally not be necessary for use in a restoration.

First, su to the cyrus account like so:

```
su cyrus
```

If you are using SLES, make the database dump with the following command:

```
/usr/lib/cyrus/bin/ctl_mboxlist -d >> mailboxes.dump
```

On Red Hat, this is accomplished with the following:

```
/usr/lib/cyrus-imapd/ctl_mboxlist -d >> mailboxes.dump
```

The above commands will output a file, mailboxes.dump, which you should keep as part of your backup.

2.7. Backup Step 7 - Backup Configuration Files for Backend Services

These configuration files, templates and other files may have been modified to customize your installation. Execute the commands below to back up the configurations for each of the respective services.

Cyrus

```
tar -cvzf cyrus.tar.gz  /etc/cyrus.conf  /etc/init.d/cyrus
```

Ox Admin

```
tar -cvzf oxadmin.tar.gz \
/opt/openexchange/ox_admin_tools/openexchange-daemons/config_templates/*
```

Postfix

```
tar -cvzf postfix.tar.gz /etc/postfix/*.db \
                         /etc/postfix/*.cf \
                         /etc/init.d/postfix
```

OpenLDAP

```
tar -cvzf openldap.tar.gz /etc/openldap/* \
                          /etc/sysconfig/openldap \
                          /etc/ldap.conf
```

Apache

```
tar -cvzf apache2.tar.gz /etc/apache2/* \
                         /srv/www/cgi-bin \
                         /srv/www/htdocs \
                         /etc/sysconfig/apache2 \
                         /etc/init.d/apache2
```

Tomcat

```
tar  -cvzf tomcat.tar.gz /etc/tomcat/base/* \
                         /srv/www/tomcat/base/conf/* \
                         /etc/init.d/tomcat
```

Postgresql

```
tar  -cvzf postgres.tar.gz  /var/lib/pgsql/data/*.conf \
                            /etc/init.d/postgresql  \
                            /etc/sysconfig/postgresql
```

2.8.   Backup Step 8 - Restart the Open-Xchange Server

Bring the server and related services back online by executing the following commands:

```
/etc/init.d/ldap start
/etc/init.d/cyrus start
rcopenexchange start
```

3. Restoration

Restoring the Open-Xchange Server requires you to follow all the steps in the backup procedure in reverse. The machine that you are restoring from a backup should match the machine from which the backup was made in terms of the operating system version, the installed services, and the particulars of the configuration. Such details as the server's IP address, host name, domain name, and LDAP configuration should match the original server's setup. These are typically configured during the installation of the operating system or by modifying system preferences through a control center interface.

3.1. Restore Step 1 – Preparing for Restoration

Shut down the Open-Xchange Server by issuing the following command at the command line:

```
rcopenexchange stop
```

Shut down the LDAP and Cyrus servers by executing the following commands:

```
/etc/init.d/ldap stop
/etc/init.d/cyrus stop
```

If you are running Red Hat, execute the following to shut down Tomcat:

```
/etc/init.d/tomcat5 stop
```

Otherwise, execute the following to shut down Tomcat:

```
/etc/init.d/tomcat stop
```

Shut down PostgreSQL with the following command:

```
/etc/init.d/postgresql stop
```

3.2. Restore Step 2 – Restore the Configuration Files

Issue the following commands to restore the configuration files for the various server processes:

```
tar –C / –xvzf cyrus.tar.gz
tar –C / –xvzf oxadmin.tar.gz
tar –C / –xvzf postfix.tar.gz
tar –C / –xvzf openldap.tar.gz
tar –C / –xvzf apache2.tar.gz
tar –C / –xvzf tomcat.tar.gz
tar –C / –xvzf postgres.tar.gz
```

3.3. Restore Step 3 – Restore the SQL Database

If you are recovering a damaged installation of Open-Xchange, you will first want to delete the existing SQL database. Login as user "postgres" and enter the following command:

```
dropdb openexchange
```

If you are given the error: "database 'openexchange' is being accessed by other users," first execute the following command and then try the above again:

```
kill `ps xww | grep "postgres: openexchange" | cut -c1-5` 2>/dev/null
```

Next, recreate the database with the following command:

```
createdb -O openexchange -E UTF-8  openexchange
```

Reload the backed up database with the following command:

```
psql -U postgres openexchange < DB_DUMP_FILE
```

Replace DB_DUMP_FILE with the path and filename of the dump file you made in the backup procedure.

3.4.   Restore Step 4 – Restore the Directory Server

To recreate the LDAP directory enter on the command line:

```
slapadd -l LDAP_DUMP_FILE
```

This will fail if it encounters duplicate entries. To first remove all data from the directory server, recursively delete all LDAP files. They should be located in /var/lib/ldap/. Issue the following command at the command line to clear out the files:

```
rm -fr /var/lib/ldap/*
```

Depending on the mail server used it may be necessary to re-index or re-hash the internal database.

3.5.   Restore Step 5 – Restore Server Data

To restore your backed up Open-Xchange Server data, extract the data tar file with the following command:

```
tar -C / -xvzf oxdata.tar.gz
```

3.6.   Restore Step 6 – Restore Configuration Files

To restore the   Open-Xchange Server configuration files, extract the configuration tar file with the following command:

```
tar -C / -xvzf oxconfigurationfiles.tar.gz
```

3.7. Restore Step 7 – Restore E-mail

To restore e-mail stored on the Open-Xchange server, extract the mail tar file with the following command:

```
tar –C / –xvzf oxmail.tar.gz
```

3.8. Restore Step 8 – Restore iSpell

If you were using iSpell, it will be necessary to reinstall this application.

3.9. Restore Step 9 – Restart the Server

It is advisable to reboot the server after undertaking the restoration procedure.

4.   Example Backup Script

In order to automate the backup process you can assemble the backup procedure's commands in a script. The following code block shows an example of such a script. Please note that it has been written for SLES 9, and will not run correctly on Red Hat installations.

```sh
#!/bin/sh
# Written by Michael Ilardi as an example backup script.
# provided WITHOUT WARRANTY

echo "initiating backup procedure..."
rcopenexchange stop
/etc/init.d/cyrus stop
dt=`date +%s`
bf="ox_backup.$dt.tar"
/bin/su postgres -c "pg_dump -U postgres -f /tmp/dbdump openexchange"

/bin/su cyrus -c "/usr/lib/cyrus/bin/ctl_mboxlist -d >> \
/tmp/cyrus_mailboxes.dump"

/etc/init.d/ldap stop
slapcat -l /tmp/ldapdump

tar -cvzf oxdata.tar.gz /var/opt/openexchange/* > /dev/null 2>&1
tar -cvzf oxconfigurationfiles.tar.gz /opt/openexchange/etc/* \
    /etc/init.d/openexchange /etc/init.d/openexchange-daemons \
    /opt/openexchange/etc/* > /dev/null 2>&1
tar -cvzf oxmail.tar.gz /var/spool/* /var/lib/imap/* > /dev/null 2>&1
tar -cvzf cyrus.tar.gz /etc/cyrus.conf /etc/init.d/cyrus > /dev/null 2>&1
tar -cvzf oxadmin.tar.gz \
  /opt/openexchange/ox_admin_tools/openexchange-daemons/config_templates/* \
  > /dev/null 2>&1
tar -cvzf postfix.tar.gz /etc/postfix/*.db /etc/postfix/*.cf \
    /etc/init.d/postfix > /dev/null 2>&1
tar -cvzf openldap.tar.gz /etc/openldap/* /etc/sysconfig/openldap \
    /etc/ldap.conf > /dev/null 2>&1
tar -cvzf apache2.tar.gz /etc/apache2/* /srv/www/cgi-bin /srv/www/htdocs \
    /etc/sysconfig/apache2 /etc/init.d/apache2 > /dev/null 2>&1
tar -cvzf tomcat.tar.gz /etc/tomcat/base/* /srv/www/tomcat/base/conf/* \
    /etc/init.d/tomcat > /dev/null 2>&1
tar -cvzf postgres.tar.gz /var/lib/pgsql/data/*.conf /etc/init.d/postgresql\
    /etc/sysconfig/postgresql > /dev/null 2>&1
mv /tmp/dbdump .
mv /tmp/ldapdump .
mv /tmp/cyrus_mailboxes.dump .
echo "tarring the following backup files:"
tar -cvf $bf dbdump ldapdump oxdata.tar.gz oxdata.tar.gz \
    oxconfigurationfiles.tar.gz  oxmail.tar.gz cyrus.tar.gz \
    oxadmin.tar.gz postfix.tar.gz  openldap.tar.gz apache2.tar.gz \
    tomcat.tar.gz postgres.tar.gz cyrus_mailboxes.dump
```

```
#cleanup
/etc/init.d/ldap start
/etc/init.d/cyrus start
rcopenexchange start
rm dbdump ldapdump oxdata.tar.gz oxconfigurationfiles.tar.gz  \
     oxmail.tar.gz cyrus.tar.gz oxadmin.tar.gz postfix.tar.gz  \
     openldap.tar.gz apache2.tar.gz tomcat.tar.gz postgres.tar.gz \
     cyrus_mailboxes.dump
echo "backup complete."
echo "backup file $bf created"
```