

SLOX2OX Migration Guide

**From SUSE LINUX Openexchange Server
to OPEN-XCHANGE Server 5 using the
SLOX2OX Migration Tool**

v1.10

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1. Overview

This Migration Guide shows you how to migrate from an existing collaboration environment using SUSE LINUX Openexchange 4.1 (SLOX) to the Open Source based Open-Xchange Server (OX).

The **first section** explains the reasons **why you should perform this migration** and what the actual benefits are. This section should be read by project managers and decision makers who need to understand why such a migration is useful and to get a rough overview about the efforts involved.

The **second section** shows the differences between the SLOX user interface and the **Open-Xchange Server user interface** and explains how users can work with the new concepts and migrated objects.

The **third section** helps to **plan a migration project** including the necessary steps, resource requirements and time need. This section should be read by the migration project manager to determine the migration prerequisites and help to develop a migration plan.

The **forth section** provides **technical information** about the steps to be executed during the migration process. This section should be read by the server administrator(s) to get details about directories involved, the file names, and the sequence of migration actions to be executed.

1.1. Why migrate

Open-Xchange Server is a cost-effective collaboration server solution based on Open Source components. In addition, Open-Xchange Server also provides an open integration platform for collaboration services.

With the latest version of Open-Xchange Server you will receive

Improvements

- Server Platform Independence
- Multiple Administrators
- Backend Service Independence
- Administration Interface factored via XML-RPC
- Extended WEBDAV/XML Interface
- Documents can be locked during editing
- Improved Web Mail

New Features

- OXTenders available
- Shared Folder Concept

- New Contact Module
- Attachments for Objects
- Objects can be linked for quick Retrieval
- Multi Language Support

New Concepts

- OXtender Concept
- Open-Xchange Server is Open Source

... and by the way: Novell has announced that "as of Dec. 31 this year, SUSE LINUX Openexchange will no longer be sold." So by switching to Open-Xchange Server you will be assured of future support.

The following sections describe the differences in more detail.

1.2. Feature Comparison SLOX 4.1 / OX 5

1.2.1. Configurable Enterprise Server Components

SLOX was designed as an out-of-the box solution which was strongly bound to the backend services provided by a specific server distribution (SLES8). This caused limitations since it was not possible to use a newer or alternative directory service, database service, or e-mail service. Open-Xchange Server comes with an open architecture to provide a maximum of flexibility. With its modular concept Open-Xchange Server can now be customized to connect to alternative server components e.g. newer Postfix versions, 3rd party LDAP implementations or alternative databases.

1.2.2. Flexible Administration Accounts

Under SLOX, server administration was limited to a single administrator. Open-Exchange Server allows administration tasks, such as mail server administration, to be delegated to sub-groups. This is especially useful for larger groups and also for distributed environments with multiple locations.

1.2.3. Database Service Flexibility Prepared

SLOX4/SLES8 was a package that provided a great out-of-the-box solution for smaller user groups. However, in most corporate environments one finds existing database installations that need be used to comply with corporate standards. The open architecture of Open-Xchange Server generally permits use of alternative databases. Depending on the particular database this might require individual customization efforts or may be supported through future OXtenders.

1.2.4. Directory Service Flexibility Prepared

SLOX4/SLES8 was a package that provided a great out-of-the-box solution for smaller user groups. However, in most corporate environments one finds existing corporate wide directory service implementations for user authentication and authorisation. The open architecture of Open-Xchange Server generally permits use of this directory services. Depending on the particular database this might require individual customization efforts or may be supported through future Oxtenders.

The interface to the e-mail service follows the same modular concept. This flexibility means Open-Xchange Server can serve as a real integration platform for collaboration needs in corporate environments.

1.2.5. Administration Interface Factored

In SLOX 4.1 the administration interface was an integral part of the server. In Open-Xchange Server the administration interface has been made into a separate, modular component that accesses the collaboration server through a standardized XML-RPC interface. The standardized XML-RPC interface provides an open API which now allows the development of custom administration functions.

1.2.6. Improved Web Mail

The Web Mail component of Open-Xchange Server also provides many improvements:

- Spell Checking for more than 40 languages (ispell Dictionaries)
- Attachments can be exported to the Documents area

1.2.7. Shared Folder Concept

Open-Xchange Server implements a shared folder concept for Calendar, Tasks, and Contact Managements, that becomes especially useful when connecting MS Outlook clients as a front-end to the Open-Xchange Server.

1.2.8. Objects can be Linked for quick Retrieval

With the new linkage concept documents can be linked to forums, documents can be linked to addresses, relations can be set between arbitrary contacts - all to save you time when retrieving information from a large data base.

1.2.9. Multi-Language Support

The Open-Xchange Server user interface currently uses English or German. French and Spanish will be integrated in the fourth quarter of 2005. With the i18n project the Open-Xchange Server user interface can be customized for any other language.

1.2.10. OXtender Concept

The OXtender concept underlines the integration idea of Open-Xchange. Open-Xchange Server provides interfaces to develop your custom OXtender. Commercial OXtenders are already available from us for Outlook and Palm Systems. Under the SynchML project more OXtenders are being prepared to support mobile devices.

The open OXtender architecture enables customers, partner companies and the open source community to develop their own extensions and to make Open-Xchange Server the integration platform of choice.

1.2.11. Open-Xchange Server is Open Source

Like the underlying Linux platforms, Open-Xchange Server incorporates both professional product development and numerous contributions from the world-class developers who make up the Open Source community. The positive effect of the openness is already remarkable, e.g. the number of languages available and the custom OXtenders being developed.

2. Open-Xchange 5 for SLOX Users

2.1. Overview

Open-Xchange has been re-designed so that not only browser users but also Outlook users can easily make use of the Open-Xchange Server features. Former SLOX users will profit from these extensions in many ways. New user defined fields, for example, give users access to more professional contact management. The following sections describe these differences and explain how both the functions and the user interface will change.

2.2. General Concepts

2.2.1. Folder Concept

Open-Xchange Server now provides a more flexible shared folder concept. Whereas SLOX only had public folders, Open-Xchange Server now offers

- Public Folders,
- Private Folders,
- Shared Folders, and
- System Folders

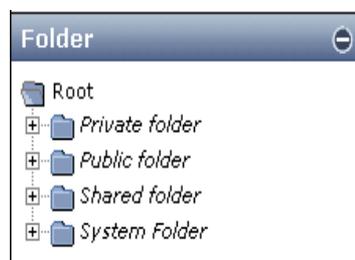


Figure 2-1: Open-Xchange Folders

This shared folder concept permits much more flexible separation of private and public information related to your

- Calendar,
- Contacts, and
- Tasks

Public Folders

Open-Xchange public folders work like public folders did in SLOX. Typically all shared corporate information like commonly used contacts, calendar entries, meetings, appointments, and shared tasks are stored in public folders.

Information stored in public folders can be made available to all users or specific groups of the same Open-Xchange Server.

Private Folders

Private Folders can be used to store personal information which should not be visible to the whole user base. Details of private appointments are not visible, though you will be shown "blocked" for that time period, when it comes to planning group meetings etc.

The owner of a particular private folder can elect to share its contents with specific users as needed, perhaps to allow for task coverage during vacation or other absence, or a department manager may open his personal calendar to his assistant for appointment scheduling purposes.

In the calendar view you can show both your private appointments and your publicly listed appointments on one screen.

Note: Using the web interface, clicking on the graphic buttons in the upper menu bar always leads you to your private contact, calendar, or task folder.

Shared Folders

Under Shared Folders in the folders list at the side of the groupware portal page you can see a list of folders which other users have chosen to share with you.

System Folders

System Folders contain information provided by the system administrator, e.g. contact entries of all users that have been set up on this Open-Xchange Server, e.g. global address book available to all users.

Context Menus on Folders

The folder list now has context menus which can be reached by clicking the right mouse button (RMB) on the folder name.

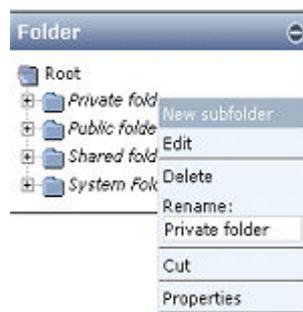


Figure 2-2: Folder Context Menu

2.2.2. Permission Concept

In SLOX user permissions were always allocated to single objects, i.e. permissions were separately assigned for each contact, for each appointment, and for each task. In Open-Xchange permissions for the three modules **calendar entries**, **contacts**, and **tasks** are assigned on folder level. The benefit of this change is clear when permissions need to be changed for a number of objects. Access rights can now be changed on folder level and individual objects need not be modified separately.

Access rights can be defined for 5 categories:

1. General: User / Administrator
2. Folder rights: No rights / create objects / create folders / admin
3. Object read rights: No rights / read own objects / read all objects / admin
4. Object edit rights: No rights / edit own objects / edit all objects / admin
5. Object delete rights: No rights / delete own objects / delete all objects / admin

Permissions for the Projects, Documents, Knowledge, Pinboard, Forums, and Bookmarks modules are still defined on a per-object basis. Permission patterns for these objects can be predefined using permission drafts as can be done in SLOX.

2.3. Portal Page

Apart from color changes and new icons, the general look and function of the portal page remains unchanged.

2.4. Contacts

Contact Fields

In SLOX a Contact had a maximum of 30 fields. Open-Xchange offers more than 60 fields leaving almost no categorization requirements left open. The defined field names use the same name as the corresponding field in MS Outlook. For further customization there are 20 dynamic fields whose field names can be specified by the administrator.

Folders

- In Open-Xchange Server 5 all contacts must be stored in a dedicated folder (public or private). There are no more single contacts. The new method of folder based storage makes it much easier to define access rights for whole sets of contacts.
- Migration: Contacts in SLOX that were not assigned to a folder will not be lost during the migration. The SLOX2OX Migration OXtender takes all contacts with the same access profile and collects them in a numbered folder whose number is automatically generated by the migration program. You may then move contacts from the numbered folders to a public or a private folder of your choice.

Note: Before creating a new contact, make sure you select the folder where you want the new contact to be created and stored.

Company / Employee Relationships

- In SLOX there was a contact type called "Company" and individual contacts were assigned to companies in a hierarchical relationship. In Open-Xchange Server all contact types, companies, and individuals are on the same level. Instead of the rigid hierarchical structure used in SLOX, Open-Xchange Server provides Links that allow you to create arbitrary (not just hierarchical) relationships between contacts. E.g. spouses or relatives can be linked together.
- Migration: The SLOX2OX Migration OXtender will replace the hierarchical relationships used by the SLOX server with Links. To view the results of this change follow the link for an individual to the company record. From the company record you will see all of the company employees listed as links.

Distribution Lists

Distributions lists serve as meta-contact for a collection of contacts to be reached by email. When sending mail to a distribution list all members of the list will be pasted visibly into the recipient field (to:, cc:, or bcc:) of your email. This

functionality differs from using an email alias where the email program resolves the member list internally and only the alias name is shown in the recipient field.

To create a distribution list

- Create a new contact, 'Sales Distribution List,' for example.
- Tip: if you enter the name of the distribution list as the contact first name and 'Distribution List' as the last name then you can sort all your lists.
- **Save** the contact before continuing.

- Reopen the contact,
- Click on the "Distribution list" tab
- Select and assign all members to the list.

2.5. Calendar

The SUSE Magic Bar has been replaced by Extended Search which allows more powerful retrieval of calendar entries.

2.6. Tasks

Task Views

SLOX provided very rigid categories for tasks: "public" / "project-related" / "delegated". Open-Xchange includes these types of tasks but now all kinds of tasks can be shown in the same view and tasks are not limited to those categories.

User defined Task Categories

Tasks still follow the familiar SLOX permissions structure, where access rights are assigned on a per-item basis. In SLOX the categories for tasks were preset by the administrator. In Open-Xchange each user can define his own categories in addition to those that have been defined globally.

Recurring Tasks

In Open-Xchange tasks can be specified as recurring, i.e. you can define time periods after which a task will be repeated.

Note: Task scheduling differs from the scheduling of appointment sequences; recurring tasks are not scheduled ahead of time. The new task will only be scheduled after the current task has been finished.

Status Change via Task List

In Open-Xchange Server the status of tasks can be changed directly using the task overview. This is an improvement over the prior method where each task had to be opened separately to record a status change.

2.6.1. Permissions for Tasks

Tasks now follow the new folder concept, where permissions can be assigned on a per folder basis and do not have to be assigned for each single task separately.

2.7. Projects

Projects still follow the existing SLOX logic, where access rights are assigned on a per-project basis. The functionality of the project module basically remains the same in Open-Xchange.

2.8. Documents

Documents still follow the basic SLOX logic where access rights are assigned on a per-object basis. A new feature has been added to the Web Mail module so that mail attachments now can be directly exported to the Documents area thereby avoiding the intermediate steps of exporting the file to your hard disk.

Locking of Documents

Documents can now be locked to avoid data corruption due to conflicting write operations. This feature is useful to avoid simultaneous editing when multiple users have write rights to a document. An author can temporarily lock the document while editing it (without having to change user rights) to prevent loss of synchronization should another user attempt to change the document while it is being edited.

2.9. Forums

Forum entries still follow the old SLOX logic, where access rights are assigned on a per-object basis.

2.10. Knowledge

Knowledge base entries still follow the old SLOX logic, where access rights are assigned on a per-object basis.

2.11. Bookmarks

Bookmarks still follow the old SLOX logic, where access rights are assigned on a per-object basis.

2.12. Links

For linking arbitrary objects Open-Xchange maintains a linking repository which works very much like an extended clipboard. The repository can hold multiple links. This not only allows links between two objects of the same type, it also permits links between a number of different objects.

2.13. Web Mail

Extended Search

In SLOX you could search individual mail folders using the Magic Bar. Open-Xchange now offers extended search mechanisms. Those can be used to search folders recursively or to search the whole mail repository.

Also the search criteria now can be specified almost arbitrarily, allowing a more efficient search

Use of Distribution Lists

The new Open-Xchange contact module allows each user to specify a distribution list which can be created according to his own needs. In Web Mail these distribution lists can be used as recipients for sending mail to multiple addresses. This complements the use of system wide mail aliases which can only be defined by the mail administrator.

Type ahead

When entering the recipient's address in a new email, the type-ahead feature saves time and effort. Open-Xchange Web Mail stores the last 20 addresses used, no matter whether the contacts were stored in the database or entered individually. If you need to store a stack of more than 20 addresses, your administrator can increase that value.

Export of Mail Attachments

As with every serious email system Open-Xchange lets you save attachments onto your disk or else open them directly. Since Open-Xchange is an integrated system, mail attachments can now be exported to the Documents area directly as well.

Sharing of Mail Folders

Personal mail folder can now be made visible to other users.

Export of Mail Folders

In Open-Xchange a mail folder can be exported as a file in mbox format.

3. Planning the Migration

3.1. Migration Steps

The Migration is done in the following phases

- Preparations, including backup
- Phase 1 - On the original system: Export of the SLOX Data into XML
- Phase 2 - On the target system: Import of the exported data into the OX Server

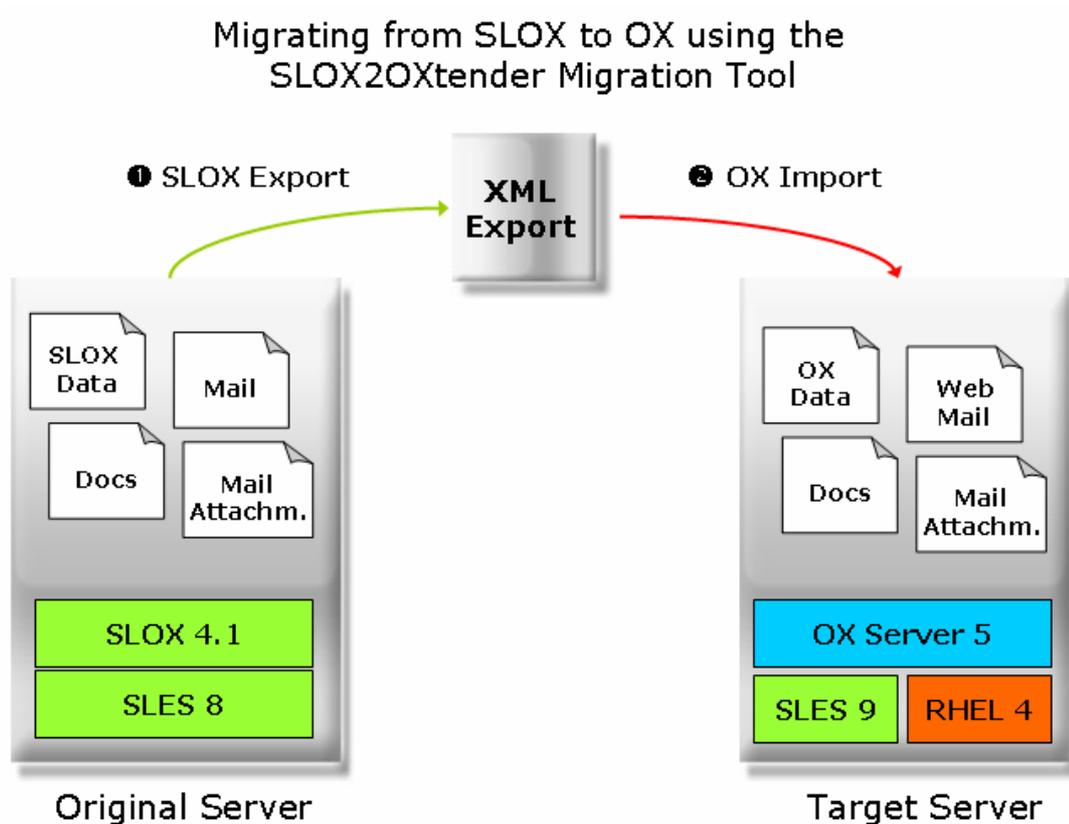


Figure 3-1: SLOX2OX Migration Diagram

The details of these phases will be described in section 2 and 3 of this guideline

3.2. Migration of Function Sets

The SLOX2OX Migration Tool will cover the migration of the following Groupware and Web Mail features:

- Users
- User Groups
- Aliases
- Resources
- Resource groups
- Shared folders
- Rights for the shared folders
- Mail domains
- Mail
- Mail signatures
- Mail folder settings for users
- Appointments
- Contacts and addresses
- Tasks
- Projects
- Documents
- Knowledge
- Bookmarks
- Forums
- Pinboard
- Links
- Notes

3.3. Limitations

Since SLOX was a vendor specific solution the integrated administration frontend contained a mix of features that not only manipulated groupware configuration parameters but that also manipulated portions of the underlying operating and network systems.

To maintain platform independence and for a better reuse of system features (e.g. YaST) some of those administrative features had to be factored out as Operating System specific or Groupware specific functionality, some aspects of which are currently unavailable in the Open-Xchange toolset. Therefore the SLOX2OX Migration Tool cannot recreate certain network server specific configurations:

- DNS
- DHCP
- Samba PDC
- Fetchmail
- LDAP Browser

DNS and DHCP

With SLOX you were not able to modify the underlying DNS services e.g. changing the IP-Address of the groupware server would break the whole system. Under Open-Xchange this can be handled more flexibly.

To carry over existing DNS and DHCP configurations from SLES 8 to SLES 9 the "Update"-option of SLES 9 could be used to prepare the server. However, a note

of warning, in beta testing we occasionally encountered cases where LDAP configurations were not properly migrated.

We strongly recommend installing Open-Xchange on a completely fresh machine and setting up DNS and DHCP manually.

Samba PDC

The SLOX2OX migration tool covers the migration of the SLOX Groupware and Web Mail. Samba PDC was an add-on feature for the SUSE LINUX Enterprise Server 8 (SLES 8). Since then Samba has gone through major changes. Newer Samba versions have become part of the SLES 9 distribution and are comfortably covered by YaST tools.

In addition Open-Xchange Inc. is currently working with a partner to provide a SAMBA OXtender for the Open-Xchange Server. When released, this tool will be useful for migrating Samba configurations. It is expected to be available in the fourth quarter of 2005.

Fetchmail

A way to migrate Fetchmail jobs into postfix would be to setup cron-based fetchmail jobs which inject the downloaded emails into the local mta/postfix.

LDAP Browser

To migrate from an existing LDAP browser you may either use

- `gq`, which is included in SLES9, or
- `ldapbrowser`, which can be downloaded as freeware from <http://www-unix.mcs.anl.gov/~gawor/ldap/>

Holidays and Private Anniversaries *

Since the current version of Open-Xchange does not support the administration of common holidays and anniversaries, the migration tool cannot migrate this type of calendar entry. This feature will be available in a future version of Open-Xchange Server.

Recovery of deleted Contacts, Tasks, and Calendar Entries *

The current version of Open-Xchange does not support the recovery of deleted objects. This feature will be available in a future version of Open-Xchange Server.

Restriction of User Access for Contact Fields

In SLOX the administrator was able to limit the fields a user could manipulate in his own user record (ACI). For compatibility reasons this limitation has been removed because not all directory servers support ACIs in a standardized way.

Permissions for Projects *

SLOX offered various user permissions for the project area. Under Open-Xchange user rights are not restricted and every user can manipulate projects. This will be changed in a future version of Open-Xchange to make the projects area consistent with the folder-based permission system now in effect for tasks.

* **Will be covered in a future version of Open-Xchange Server, planned for the fourth quarter 2005.**

3.4. Space required

The amount of data to be transferred can be determined from the following directories of your original server:

Contents	Directories	Space consumed
E-Mails	/var/lib/imap	GB
E-Mail Attachments	/var/spool/imap	GB
Documents	/var/opt/comfire/filespool	GB
SLOX Files	/var/lib/sieve	GB
Total		GB

For the migration you should reserve twice the total amount of hard drive space used on the SLOX system on your target system.

3.5. Time needed

The time taken for the migration will depend largely on the amount of data accumulated in your SLOX system and on the method used to transport the data to the new system.

Example:

20 Users / 25 GB Mail / 20 GB other documents

Copying a 25GB IMAP mail directory across a network will take about 4-5 hours when rsync is used. Copying a 20 GB file spool (documents) across a network will take another 4-5 hours. Copying the actual SLOX data of 15-20 Users will take ½ hour. In this example the total of 50 GB for 20 Users could be migrated in about 8-10 hours

If an extra hard drive is available that is compatible with both server machines, the exported data can be copied to that hard drive in the SLOX server. And later the same hard drive can be used for import in the target system. Using this mechanism, the migrated data is available on the extra hard drive and several migration runs can be tested. The migration itself may take significantly longer than using the network copy, because the data needs to be copied twice – to the extra harddisk on SLOX and back to the system on the Open-Xchange Server.

3.6. Fallback Solutions

1. As with any major data conversion, you should perform a complete system backup of your SUSE LINUX Server before proceeding with the migration. Make sure that the system backup was successful (verify)

2. Backup all of your SLOX data before proceeding with the migration. This should include the backup of all mails, mail attachments and document folders.

Should the migration stall at any point, restore the SLOX data from your backup. Should this not lead to a correctly running system then perform a complete system restore.

3.7. Sample Migration

Prior to running the migration on a production system it is recommended that you test the migration process on a secondary or test system. This way you can keep your original system running while testing the migration results in a non-production environment. You can verify offline whether all your migration parameters are correct and complete. You can also familiarize yourself with the new system functions without affecting production data. In short, doing a sample migration first will increase your, and your manager's, confidence and will reduce the downtime of your collaboration environment during the actual migration.

3.8. Information for Users

Prior to the actual migration all users should be informed about the new organization and features of the Open-Xchange Server. Details can be found in the Open-Xchange Server User Manual. A demo server that shows the new user functions is accessible through <http://www.open-xchange.com>

Section 2 of this manual which describes the changes from a user perspective will also be available for separate download. You may print this section and distribute it to your users.

You may also want to inform your user base about any expected downtime.

4. Migrating using the SLOX2OX Migration Tool

4.1. Overview

After the preparation steps the Migration will be executed in two major phases:

Phase 1: Existing data from the original SLOX server will be collected and stored to XML. This phase also includes the collection of mail data and attachments (IMAP) and the documents from the file spool.

Phase 2: All data will be moved and converted to the target OX Server. During the migration the migration tool will insert all data that is stored in XML into the new server. This includes rebuilding the IMAP directory for the mail services.

Prior to entering the actual migration phases please

- make sure that the following requirements are met and
- prepare your system

4.2. Requirements

4.2.1. Original System

On your original system you need to have **SLOX v4.1** and the latest patches running.

Note: The SLOX2OX Migration Tool will not be able to perform a proper migration from SLOX versions earlier than 4.1

4.2.2. Target System – Software installed

The target system should already be setup with a SLES 9 or RHEL 4 Server installation and Open-Xchange Server running. To determine the currently running Open-Xchange Server version consult the Linux System information. The files of Open-Xchange Server should be of the latest version available on the Open-Xchange Maintenance portal:

- open-exchange-0.8.0-<x>
- openexchange-adminweb-1.0.0-<x>
- openexchange-daemons-1.0.0-<x>

where <x> stands for the latest version number. Please visit the Open-Xchange Maintenance Portal <http://portal.openexchange.com> and verify that you have downloaded the most recent version.

4.2.3. Target System – Hard Disk Space

Please determine the total amount of data to be transferred (mail, file spool, and SLOX files). On the target system you will need at least twice of the total amount of the of free disk space to allow for future storage.

4.2.4. Software – Files of the SLOX2OX Migration Tool

You should have the SLOX2OX software ready which consists of two archive files:

- SLOXExport-<version>-<server>.tar.gz exports the SLOX data into XML format
- OXImport-<version>-<server>.tar.gz imports XML data on the new OX Server

where <server> denotes the target server, either "sles9" or "rhel4".

4.2.5. Separate Server Systems recommended

Although the migration could theoretically be accomplished on one computer it is recommended that you use two separate systems, the original SLOX system and a target server. This way the original system can remain unchanged as a backup and can always be reactivated should any of the migration steps fail.

4.2.6. Extra Hard Drive recommended

For data security reasons it is recommended to have an extra hard drive which will work in both of the server machines. The extra hard drive can be used to accelerate the data transfer rather than transferring all data across a slow network.

4.3. Preparations

This section describes the preparation to be done on both systems.

On the original server

- Backup your system
- Update your system to the latest version
- Install the Export component of the SLOX2OX Migration Tool
- Customize the Export configuration file

On the target server

- Install the Import component of the SLOX2OX Migration Tool
- Customize the Import configuration file

4.3.1. Backup your Original System

Even if you will keep your original system essentially unmodified we recommend that you backup your existing SLES/SLOX server before beginning the migration. There are two alternatives:

- ❑ Run a complete backup of the SLES/SLOX Server, or
- ❑ Backup your SLOX data following the advice on the SUSE-portal:
http://portal.suse.com/sdb/en/2002/12/rsimai_slox4_backup.html
(Should this information not be accessible please contact SUSE support on advice how to backup your existing SUSE LINUX Openexchange)

Note: You are solely responsible for backing up your system. Open-Xchange Inc. will not be liable for any loss of data during the migration.

4.3.2. Update your SLOX Configuration if necessary

On your original system you need to have **SLOX v4.1** and the latest patches running.

Note: The SLOX2OX Migration Tool will not be able to perform a proper migration from earlier SLOX versions

Case 1 – You have a maintenance agreement with SUSE

Use YOU (YaST Online Update) to perform a complete update for SLOX. This is the preferred update mechanism for your existing server. Especially if you would like to do a sample migration, your SLOX system can be used continuously.

Case 2 - You do not have a current maintenance agreement with SUSE

On the Open-Xchange maintenance portal you will find two files that need to be installed on your original SLOX system prior to the export phase:

```
comfire-intranet-2.4999-0.i386.rpm  
comfire-webmail-2.4999-2.i386.rpm
```

Note: These rpm files are for migration purposes only. After installing the rpm files you will not be able to update your SLOX system using the YOU mechanism (YaST Online Update).

To prepare your original SLOX system for export:

- 1) Install these two files on your SLOX system using the rpm command
`rpm -Uvh <packetname>.rpm`

- 2) Restart the server modules by entering the following two commands on the command line

```
rcgroupware restart
rcwebmail restart
```
- 3) Verify the successful update by checking the log-files in the following two directories

```
/var/log/groupware
/var/log/webmail
```

The last lines of according Log files will say
"... System-Build: 4999"

4.3.3. Set up the Export Tool on the Original Server

The file for the export is named `SLOXExport-sles9-1.0.1.tar.gz`

- Copy this archive to the root-directory of your SLOX server and unpack it.

Example:

```
cp /media/cdrom/SLOXExport-<version>-<server>.tar.gz /
tar -xvzf SLOXExport-<version>-<server>.tar.gz
```

- Print and read the "SLOX2OX Export Readme" file to find recent information about exporting SLOX data from your original system.

4.3.4. Customize the Export Configuration File

After unpacking the SLOXExport file you will find the file `slox.conf` in your `/SLOXExport/etc` directory.

- Edit the `/SLOXExport/etc/slox.conf` file and change the configuration so that it matches your current configuration. One of the most important steps is to configure the setting for how object permissions will be transferred. Please refer to Appendix 1 of this guide where you will find an example copy of a typical `slox.conf` file. The highlighted areas show the parameters to be customized.

4.3.5. Set up the Import Tool on the Target System

The file for the import is named `OXImport-<version>-<server>.tar.gz`

- Copy this archive to the root directory of the target server and unpack it.

Example:

```
cp /media/cdrom/OXImport-<version>-<server>.tar.gz /
tar -xvzf OXImport-<version>-<server>.tar.gz
```

This will create a new directory named `/OXImport` with the subdirectories `/OXImport/etc` and `/OXImport/sbin`

- ❑ Please print and read the "SLOX2OX Import Readme" file contained in that newly created directory to find recent information for importing data.

4.3.6. Customize the Import Configuration File

After unpacking the OXImport file you will find a file called `oximport.properties` in the directory `/OXImport/etc`

- ❑ Edit the file `etc/oximport.properties` and change the parameters according to your requirements. Please refer to Appendix 2 of this guide where you will find an example copy of the `oximport.properties` file. The highlighted areas explain the parameters to be customized.

4.3.7. Install rsync

- ❑ Make sure that rsync is installed on both systems. If not install it from your server distribution, eg. using YAST.

4.4. Migrating using an extra Hard Disk

Note: If you prefer to migrate over a network please continue reading the next section of this chapter "Migrating over a Network".

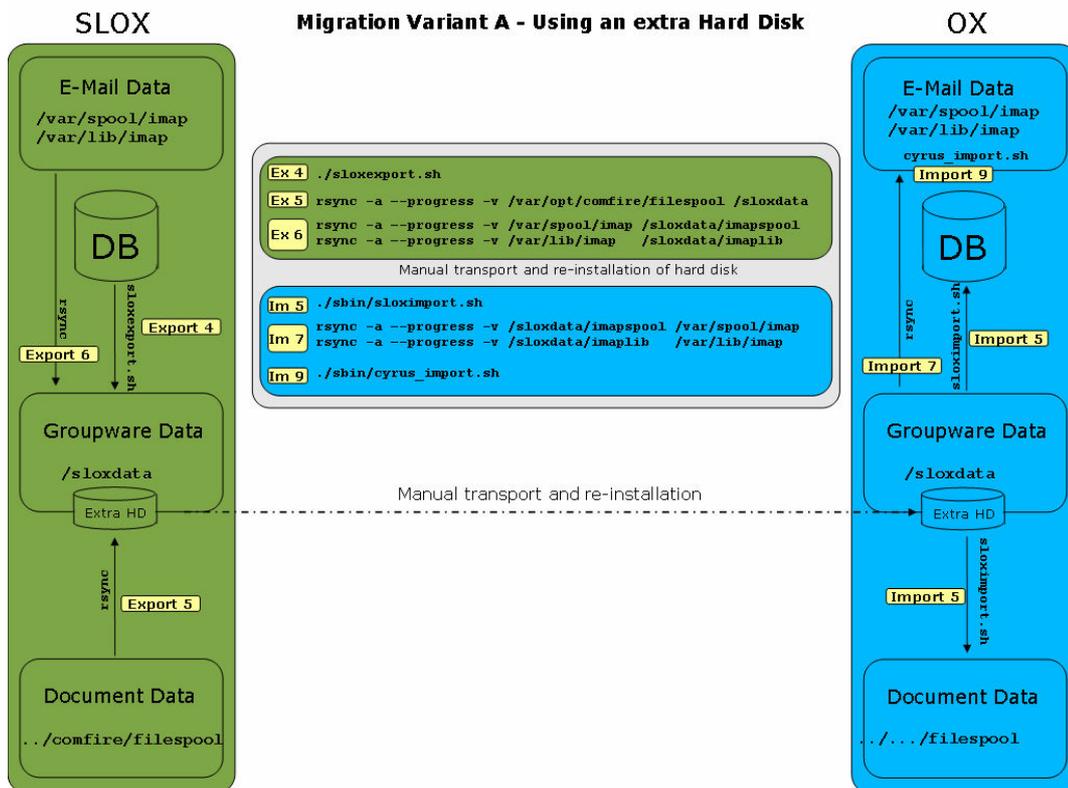


Figure 4-1: Migrating using an extra Hard Disk

4.4.1. Exporting Data from your SLOX Server (Hard Disk)

Export Step 1 - Logon to the Original Server

- Logon to the SLOX system as the "root"-user

Export Step 2 - Stop all SLOX Server related Services

All server services that are related to the SLOX server need to be stopped prior to exporting. A running SLOX system might lock files or might overwrite existing data leading to inconsistent export files.

- ❑ Stop all mail and SLOX daemons by entering the following commands on the command line:

```
/etc/init.d/postfix stop
/etc/init.d/cyrus stop
/etc/init.d/webmail stop
/etc/init.d/groupware stop
/etc/init.d/sessiond stop
```

Export Step 3 – Verify the Export Parameters

- ❑ The file `/SLOXExport/etc/slox.conf` contains all parameters required for the export. Please verify all parameter values in this file. (See Appendix 1)

Export Step 4 - Export SLOX-Data to XML-Format (Hard Disk)

- ❑ Go to the directory `/SLOXExport`
- ❑ Call the script `sloxexport.sh` which is stored in the root directory

```
./sloxexport.sh
```

This script will ask you to enter the following information:

- Export path (e.g. `/sloxdata`, mandatory parameter, no default,)
- IMAP data path (default: `/var/lib/imap`)
- IMAP admin (default: `cyrus`)

Note: If the directory you specify as Export Path already exists, it will be deleted!

Export Step 5 - Copy existing SLOX Data (Hard Disk)

- ❑ Use `rsync` to copy the SLOX data to the `/sloxdata` directory

```
rsync -a --progress -v /var/opt/comfire/filespool /sloxdata
```

Export Step 6 - Copy Mail Data (Hard Disk)

- ❑ Use `rsync` to copy the mail data to the `/sloxdata` directory

```
rsync -a --progress -v /var/spool/imap /sloxdata/imapspool
rsync -a --progress -v /var/lib/imap /sloxdata/imaplib
```

Export Step 7 - Backup the exported Data

After the SLOX data collection all data will be written to the directory that you specified in Step 5, e.g. /sloxddata

- Copy this directory to the backup server or to the extra hard drive.

4.4.2. Importing Data into the Open-Xchange Server (Hard Disk)

Import Step 1 - Logon to the Open-Xchange Server

- Install the hard drive into your Open-Xchange Server
- Log on to the target system as the root user

Import Step 2 – Create a new Database Table named "mapping"

The import script which will be called later requires a temporary table named "mapping".

- Add a new table named "mapping" to your database by entering the following command on the command line:

```
psql -h localhost -U openexchange < setup/oximport.sql
```

- When asked for a password enter

```
secret
```

Import Step 3 – Create a User named "migration"

The import script which will be called later relies on an Open-Xchange user named "migration" who is Write-enabled for the global address book. This user needs to be created now.

- Login to the Open-Xchange Server as an Administrator (e.g.mailadmin)
- Add the user "migration" to your system with the same default password you specified in the file /OXImport/etc/oximport.properties and set his Write-permissions.

Import Step 4 – Verify the Import Parameters

The file /OXImport/etc/oximport.properties contains the parameters required for the import conversion. Please verify all parameter values. (See Appendix 2)

Import Step 5 – Import the OX Server Data from XML

To import the Open-Xchange Server data

- ❑ Go to the directory `/OXImport`
- ❑ Run the import script from the directory `/OXImport`

```
./sbin/oximport.sh
```

Note: Failures running the import script are most likely to be caused by mistaken settings in the properties file. In that case just correct the parameter in the properties file and run the import script again.

Import Step 6 - Stop all OX Server related Services

A running OX Server could overwrite the data being imported. That would create an inconsistent configuration and would lead to the loss of data.

- ❑ To stop all mail and OX Server daemons enter the following commands on the command line:

```
/etc/init.d/postfix stop  
/etc/init.d/cyrus stop  
/etc/init.d/openexchange stop  
/etc/init.d/openexchange-daemons stop
```

Import Step 7 - Copy all Mail Files (Hard Disk)

- ❑ For safety reasons retain a backup of the current mail and attachment files:

```
mv /var/lib/imap /var/lib/imap.old  
mv /var/spool/imap /var/spool/imap.old
```

- ❑ Now copy the mail and attachment trees exported from the SLOX server to the current server mail directories:

```
rsync -a --progress -v /sloxddata/imapspool /var/spool/imap  
rsync -a --progress -v /sloxddata/imaplib /var/lib/imap
```

Import Step 8 – Run the Mail Import Script (Hard Disk)

- ❑ Call the mail import script `cyrus_import.sh` as follows

```
./sbin/cyrus_import.sh
```

Import Step 9 - Restart all Mail and OX Daemons

- ❑ To restart the Mail and Open-Xchange Server services enter the following commands on the command line:

```
/etc/init.d/postfix start  
/etc/init.d/cyrus start  
/etc/init.d/openexchange start  
/etc/init.d/openexchange-daemons start
```

Please continue reading the section "Finalizing the Migration"

4.5. Migrating over a Network

This migration variant describes the steps to be performed when your original SLOX system and your new OX system are connected over a network.

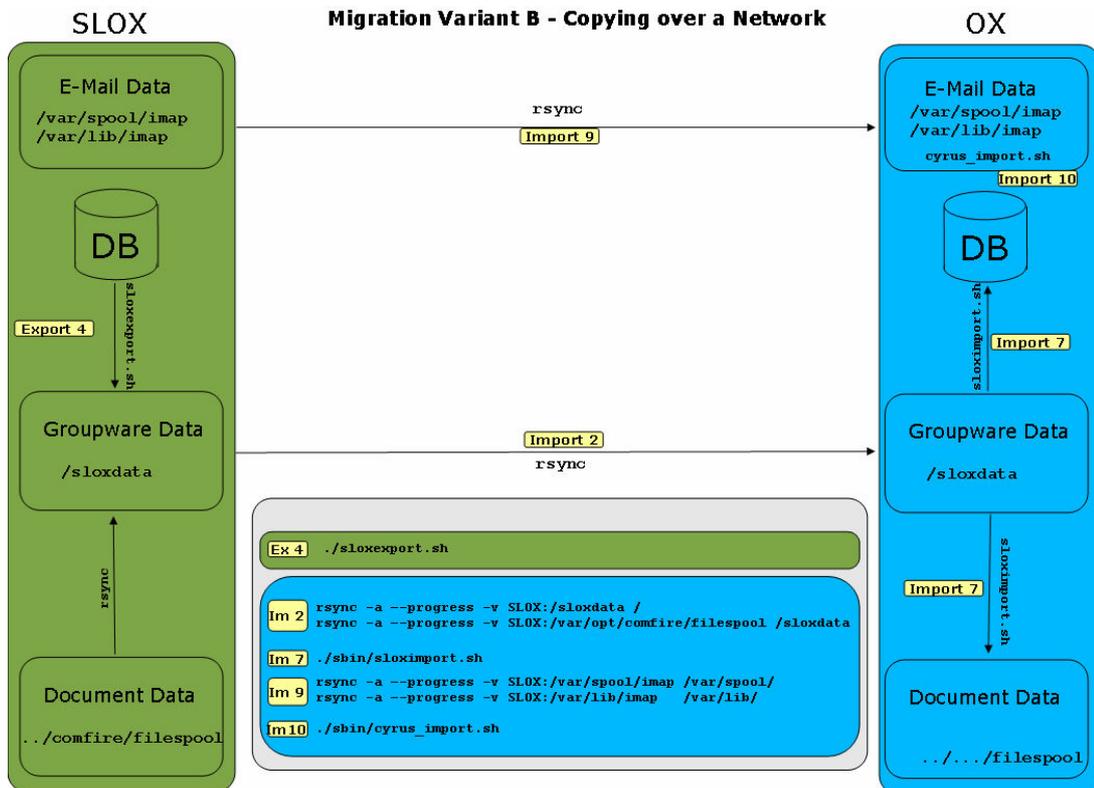


Figure 4-2: Migrating over a Network

4.5.1. Exporting Data from your SLOX Server (Network)

Export Step 1 - Logon to the Original Server

- ❑ Logon to the SLOX system as the "root"-user

Export Step 2 - Stop all SLOX Server related Services

All server services that are related to the SLOX server need to be stopped prior to exporting. A running SLOX system might lock files or might overwrite existing data leading to inconsistent export files.

- ❑ Stop all mail and SLOX daemons by entering the following commands on the command line:

```
/etc/init.d/postfix stop
/etc/init.d/cyrus stop
/etc/init.d/webmail stop
/etc/init.d/groupware stop
/etc/init.d/sessiond stop
```

Export Step 3 – Verify the Export Parameters

The file `/SLOXExport/etc/slox.conf` contains all parameters required for the export. Please verify all parameter values in this file. (See Appendix 1)

Export Step 4 - Export SLOX-Data to XML-Format (Network)

- Go to the directory `/SLOXExport`
- Call the script `sloxexport.sh` which is stored in the root directory

```
./sloxexport.sh
```

This script will ask you to enter the following information:

- Export path (e.g. `/sloxdata`, mandatory parameter, no default,)
- IMAP data path (default: `/var/lib/imap`)
- IMAP admin (default: `cyrus`)

Note: If the directory you specify as Export Path already exists, it will be deleted!

4.5.2. Importing Data into the Open-Xchange Server (Network)

Import Step 1 - Logon to the Open-Xchange Server

- Log on to the target system as the "root" user

Import Step 2 - Copy the `/sloxdata` contents and filespool Data to the Target Server (Network)

- Use `rsync` to receive the contents of the `/sloxdata` directory

```
rsync -a --progress -v SLOX:/sloxdata /
rsync -a --progress -v SLOX:/var/opt/comfire/filespool /sloxdata
```

Import Step 3 – Create a new Database Table named "mapping"

The import script which will be called later requires a temporary table named "mapping".

- ❑ Add a new table named "mapping" to your database by entering the following command on the command line:

```
psql -h localhost -U openexchange < setup/oximport.sql
```

- ❑ When asked for a password enter

```
secret
```

Import Step 4 – Create a User named "migration"

The import script which will be called later relies on an Open-Xchange user named "migration" who is Write-enabled for the global address book. This user needs to be created now.

- ❑ Login to the Open-Xchange Server as an Administrator (e.g.mailadmin)
- ❑ Add the user "migration" to your system with the same default password you specified in the file `/OXImport/etc/oximport.properties` and set his Write-permissions.

Import Step 6 – Verify the Import Parameters

The file `/OXImport/etc/oximport.properties` contains the parameters required for the import conversion. Please verify all parameter values. (See Appendix 2)

Import Step 7 – Import the OX Server Data from XML (Network)

To import the Open-Xchange Server data

- ❑ Go to the directory `/OXImport`
- ❑ Run the import script from the directory `/OXImport`

```
./sbin/oximport.sh
```

Note: Failures running the import script are most likely to be caused by mistaken settings in the properties file. In that case just correct the parameter in the properties file and run the import script again.

Import Step 8 - Stop all OX Server related Services

A running OX Server could overwrite the data being imported. That would create an inconsistent configuration and would lead to the loss of data.

- ❑ To stop all mail and OX daemons enter the following commands on the command line:

```
/etc/init.d/postfix stop
/etc/init.d/cyrus stop
/etc/init.d/openexchange stop
/etc/init.d/openexchange-daemons stop
```

Import Step 9 - Copy all Mail Files (Network)

- ❑ For safety reasons retain a backup of the current mail and attachment files:

```
mv /var/lib/imap /var/lib/imap.old
mv /var/spool/imap /var/spool/imap.old
```

- ❑ Now copy the mail and attachment trees exported from the SLOX server to the current server mail directories:

```
rsync -a --progress -v SLOX:/var/spool/imap OX:/var/spool/
rsync -a --progress -v SLOX:/var/lib/imap OX:/var/lib/
```

Import Step 10 – Run the Mail Import Script (Network)

- ❑ Call the mail import script `cyrus_import.sh` as follows

```
./sbin/cyrus_import.sh
```

Import Step 11 - Restart all Mail and OX Daemons

- ❑ To restart the Mail and Open-Xchange Server services enter the following commands on the command line:

```
/etc/init.d/postfix start
/etc/init.d/cyrus start
/etc/init.d/openexchange start
/etc/init.d/openexchange-daemons start
```

4.6. Finalizing the Migration

Congratulations, you are now almost finished with the migration. There are two final steps you should perform to wrap up:

1. Verify the migration results
2. Recover the user password

4.6.1. Verifying the Migration results

During the import process consistency checks are performed and the results are recorded in a log file: `oximport.log`

The log file informs you which steps have been performed and if any errors have been found. Some typical errors are

- contacts with wrong e-mail addresses
- calendar entries with an end date earlier than the start date
- erroneous sieve scripts

Errors resulting from Contacts

To avoid LDAP errors, contacts with syntactically incorrect e-mail-addresses will not be migrated. The log file will show you which contacts were affected. In this case you can correct the contact's e-mail address on your source system and repeat the migration. Alternatively you may choose to re-create such contacts manually on the target system.

Errors resulting from Calendar Entries

Calendar entries where the start date is later than its end date will not be migrated. The log file will show you which entries were affected. In this case you can correct the calendar entry on your source system and repeat the migration. Alternatively such calendar entries can be re-created manually.

Verification by Users

After the (test) migration the users can verify the results of the migration for their own data. During the migration all user passwords were overwritten by a standard password specified in the import configuration file `oximport.properties`. To enable users to test their data please provide them with the standard password.

Based on the user feedback repeat the migration if necessary.

4.6.2. Recovering original Passwords

To enable the migration, the password of all users had to be changed to a default password. To continue operation on the new system those user passwords need to be restored after the migration is completed. This can be achieved by calling a script that has been prepared in the `sbin`-directory of your target system.

Note: Until now the migration could always be repeated if any results were not correct. The recovery of the passwords will block unauthorized access to the user accounts and thus will inhibit further repetitions of the migration.

To change the user passwords back call the following script on the command line

```
restore-passwords.sh
```

Congratulations!

5. Glossary

RHEL – Red Hat Enterprise Linux

RHAPS - Red Hat Application Server

SLES – SUSE LINUX Enterprise Server

SLOX – SUSE LINUX Openexchange Server

OX Server – Open-Xchange Server

SLOX2OX – An Open-Xchange Server extension (OXtender) that helps with migration from SLOX to Open-Xchange Server i.e. The Migration Tool.

6. Appendix 1 – Export Configuration File

File name: /etc/slox.conf

```
# SLOX LDAP CONFIGURATION
ldapservers=127.0.0.1
ldapadmin=uid=cyrus
ldapadminpassword=secret
basedn=dc=example,dc=org

# SLOX DB CONFIGURATION
dbaddress=127.0.0.1
dbname=comfire
dbuser=comfire
dbpassword=comfire

# Handling of appointments, contacts and tasks that are
# not bound to a folder and have custom rights. You can
# choose two options how to store these objects:
# 0 = Store object in owners private folder
# 1 = Create a public folder for the rights of the object,
#     and store it in that folder. When different objects
#     have the same rights, the objects will be saved
#     in the same public folder.
unbound_appointment_storage=0
unbound_contact_storage=1
unbound_task_storage=0
```

7. Appendix 2 – Import Configuration File

File name: /etc/oximport.properties

```
# OXImportTool property file
#
# don't touch already created object
# can get the value 'update' to update created objects

LANGUAGE="DE"

UPDATEOBJECT="no"

BASEDIR="/tmp/sloxdata"

FILESPOOL_SRC="/tmp/sloxdata/filespool"
FILESPOOL_TARGET="/var/opt/openexchange/filespool"

MAILADMIN="mailadmin"
MAILPASSWORD="secret"

DEFAULTPASSWORD="6h63g5"

DB_DRIVER="org.postgresql.Driver"
DB_URL="jdbc:postgresql://127.0.0.1/openexchange"
DB_USER="openexchange"
DB_PASSWORD=""

LDAP_HOST="127.0.0.1"
LDAP_BASEDN="dc=domain,dc=org"

IMAP_HOST="127.0.0.1"
IMAP_PORT="143"

XMLRPC_HOST="127.0.0.1"
XMLRPC_PORT="5900"

MIGRATIONUSER="migration"

ENABLETLS="yes"
```