ZopeFax Quick Installation Guide

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ZopeFax Quick Installation Guide
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Revision History

Revision Version 1.0   01.04.2004   Revised by: jschieri
28.04.2004

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Die vorliegende Dokumentation (Version 1.0 vom 01.04.2004) kann als PDF-Dokument heruntergeladen werden: fax-quick-install.pdf

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Chapter 2. Quick Installation Guide

Notice

This document represents a short reference for installing the Zope Applicaction Server, the HylaFax Server, the Zope-Product ZopeFax and some special tools required by ZopeFax. This reference implies, that there is a host system available, where the following components are installed and configured:

- Linux operating system
- Apache Webserver

ZopeFax is an Open Source Project, that was developed on a system running RedHat Linux 7.3, Zope 2.6.1 and Python 2.2. This documentation deals with the several steps of installation and configuration that has been caried out on the described system. Installing this components on another type of host systen can lead to problems.

Another precondition for a successful installation and configuration is the availability of an LDAP Server, that is used for handling authorisation. This LDAP Server must contain a usergroup *faxmanger* an some users assigned to this group. The users assigned to this group will be informed about incomming fax by a Perl script named *faxrcvd*. Also the implemented user management checks if some user is assigned to this group. If some user is member of the group *faxmanger* he/she will access another enviroment as a normal user (who is not member of group *faxmanger*).

As mentioned before this is only a quick installation guide. If you need more detailed informations please read the ZopeFax-Dokumentation (sadly it is only available in german language - sorry).

Installation

Installation of required tools

Install the following tools on your system:

- python2.1
- install/check availability of Python modules **after** installing Zope Application Server:
  - ldap
  - os
  - gzip
  - PIL - Python Imaging Library
  - re
  - StringIO
  - string
  - sys
  - time
  - traceback
  - ZODB
  - Zope

- Perl
- Perl modules:
  - perl-MIME-Base64
  - perl-libwww-perl-5.63-9
  - perl-libnet-1.0901-17
  - perl-URI-1.17-16
  - perl-Sendmail
  - perl-ldap
  - perl-Convert-ASN1
- libtiff-3.5.7-2
- ghostscript-6.52-9.5
- tiff2png-0.91

Installation of Zope Application Servers

Notice: Zope is shipped with an own Python interpreter an several libraries. This interpreter is (after installing Zope) responsible for interpreting python scripts. Python 2.1 interpreter is only used for installation purpose.

Installing Zope 2.6.1

1. extract tarbal of Zope-2.6.1 to /usr/local/
2. start installing by calling *./install* located in Zope directory
3. create initial user by calling *python2.1 zpasswd.py access*
4. run a *chmod o+t* on directory /usr/local/Zope*/var
5. create system user *zope* by running *adduser zope*
6. pass UID of user zope to *z2.py*
7. link directory *site-packages* of python2.1 to /usr/local/Zope*/lib/python2.1/ (for example *ln -s /usr/lib/python2.1/site-packages /usr/local/zope/lib/python2.1/site-packages*)
8. create user faxuploader in Zope

Configure Apache Webserver

1. change directory to */usr/local/Zope/pcgi/* and call commands *./configure, make, make install*
2. link */usr/local/Zope-2.6.1-x/Zope.cgi* to */var/www/cgi-bin/Zope*
3. Add the folowing RewriteRule to your Apache config file

   Our RewriteRules in httpd.conf:

   ```
   RewriteEngine on
   RewriteRule ^/static/(.*) /var/www/html/$1 [l]
   RewriteRule ^/cgi-bin/(.*) /var/www/cgi-bin/$1
   [e=HTTP_CGI_AUTHORIZATION:%1,t=application/x-httpd-cgi,l]
   RewriteCond %{HTTP:Authorization} ^(.*)
   RewriteRule ^/(.*) /var/www/cgi-bin/Zope/FaxDB/Fax/$1
   ```

```
[e=HTTP_CGI_AUTHORIZATION:%1,t=application/x-httpd-cgi,l]
```

Installation and configuration of HylaFax Server

The installation is done as described by the HylaFax HowTos, that can be found at the HylaFax hoempage (http://www.hylafax.org).

1. installing Hylafax-RPM - we are using HylaFax-4.1.7 (take a look at the pakage dependencies)
2. run*/usr/sbin/faxsetup* (take a look at HylaFax-HowTo)
3. run*/usr/sbin/faxaddmodem*
4. place the line '*mo:2345:respawn:/usr/sbin/faxgetty ttySx*' in */etc/inittab*
5. create user 'fax'

After this general installation steps you have to configure your modem. Search for a valid configuration file for your modem and customize the configuration (for example customize dial string)

After finishing installation and configuration of HylaFax and you modem you have to copy the file *faxrcvd* (shipped with ZopeFax) to */var/spool/hylafax/bin/faxrcvd*. After copying the file you have to customize the content of *faxrcvd*. Customizing means to assign the variables for Zope Server (FQDN), Mail Server, LDAP Server and Base DN, addresses of sender and recipient of e-mail and the password for Zopeuser faxuploader to the correct values. After configuring *faxrcvd*, the script will perform the following actions if a fax is received by the HylaFax Server:

- send e-mail to specified address if a fax is not received completely
- convert fax to required formats
- create fax object and its properties on Zope-Server by transferring files via ftp
- notify faxmanager (LDAP group) via e-mail about new fax

Installation of Zope Product ZopeFax

Before importing ZopeFax check availability of following Zope Products:

- DBTab - optional
- Xron
- LDAPUserFolder (Used for LDAP authentication)

The products Xron and LDAPUserFolder have to be installed. DBTab is optional.

Now you can install the product ZopeFax.

1. Import ZopeFax (XML-File) to Zope - **Attention!:** Remove existing version of ZopeFax **Product** (not Instance) before importing the new Product

2. create directory *faxTemp/* in directory /usr/local/Zope*/var with read and write permissions for user zope (used for temporary read and write processes)

3. copy external Zope-Scripts (rotateFax.py, faxRecover.py, libRotate.py, searchLDAP_sort.py) to */usr/local/Zope*/Extensions* (user *zope* must have permissions to execute these scripts)

4. check Xron-Scheduler Catalog - it could be possible, that the import leads to replication of a Xron Object (included in Zopefax) in the scheduler, so that the scheduler includes one or more Xron Objects. Delete these objects or try "update catalog" to clear the scheduler. The Xron Objects are only used by an instance of the ZopeFax but not by the product.

Create an instance of ZopeFax

Before creating a new instance, you have to do some configuration tasks. You can configure ZopeFax by editing the *Propertysheets* of the product. Please check the if all values are set correctly.

1. Create a new instance using the Drop Down Box situated in the upper left corner of the window - choose*Fax-Instanz* and click *Add*

2. Change to ZopeFax instance and customize Xron Object *faxAge*:

   - set current date and time for *Execute at* to let faxAge check for old fax (for example 2003/11/28 01:00:00 GMT+1)

   - customize *Reschedule Interval* (for example 1.0 means once per day)

3. check settings of LDAPUserFolder object *acl_users* in the top level directory of ZopeFax instance

   - set correct User Base DN - LDAP Directoy of users

   - set correct Groups Base DN - LDAP Directory of groups

   - in Tab "LDAP Schema" check following mappings:

     - LDAP Attribut *mail* has to exist, which represents email addresses of an users

     - LDAP Attribut *uid* has to exist, which represents the user id

     - LDAP Attribut *cn* has to exist, which represents the Canonical User Name of an user

     - LDAP Attribut *sn* has to exist, which represents the Last Name of an user

Chapter 3. Quick Installation Guide - Deutsch

Bemerkung

Bei dieser stark verkürzten Installationsanleitung wird davon ausgegangen, dass auf dem verwendeten Host bereits Linux und ein funktionstüchtiger Apache Webserver installiert sind. Ist dies nicht der Fall, so sollten Sie die Installationsanweisungen zum Linuxbetriebssystem den zu ihrer Linux-Distribution mitgelieferten Handbüchern entnehmen. Das hier betrachtete Open-Source Zope-Produkt ZopeFax wurde unter RedHat Linux 7.3, Zope 2.6.1 und Python 2.2 entwickelt und getestet. Die folgende Dokumentation bezieht sich hierbei auf die unter diesen Rahmenbedingungen ausgeführten Installationsschritte. Es wird an dieser Stelle ausdrücklich darauf hingewiesen, dass bei anderen Linux-Distributionen, Zope- und Python-Versionen die Installationsabfolge von der hier beschriebenen abweichen kann.

Des Weiteren wird vorausgesetzt, dass ein LDAP-Server zur Verfügung steht, in dem Nutzer der Gruppe *faxmanager* zugeordnet sind. Diese Nutzer der Gruppe *faxmanager* werden durch das Perl-Skript *faxrcvd* über den Eingang neuer Faxe benachrichtigt. Außerdem erfolgt bei dem späteren Login in die Instanz des ZopeFax-Produktes eine Überprüfung der Nutzer anhand eines LDAP-Servers. Dabei wird ebenfalls die Zugehörigkeit der Nutzer zu einer Gruppe *faxmanager* überprüft. Je nach Ergebnis der Überprüfung wird der Nutzer eine entsprechende Fax-Umgebung vorfinden.

Benötigen Sie detailliertere Informationen zu dem ZopeFax-Produkt, so informieren Sie sich bitte in den weiteren Kapiteln dieser Dokumentation.

Installationsanweisung

Installation benötigter Tools

- Installation von python2.1
- Installation/Überprüfen folgender Python-Module nach der Installation des Zope Servers:
  - ldap
  - os
  - gzip
  - PIL - Python Imaging Library (nachträglich zu installieren)
  - re
  - StringIO
  - string
  - sys
  - time
  - traceback
  - ZODB
  - Zope
- Installation von Perl
- Perl-Module installieren:
  - perl-MIME-Base64

- perl-libwww-perl-5.63-9
- perl-libnet-1.0901-17
- perl-URI-1.17-16
- perl-Sendmail
- perl-ldap
- perl-Convert-ASN1

- Installation von libtiff-3.5.7-2
- Installation von ghostscript-6.52-9.5
- Installation von tiff2png-0.91

Installation des Zope Application Servers

Bemerkung: Zope bringt einen eigenen Python-Interpreter und die dazugehörigen Bibliotheken mit. Dieser neue Interpreter ist dann für die Bearbeitung der Python-Skripte in Zope zuständig. Der Python2.1-Interpreter wird hauptsächlich für die Installation von Zope benötigt.

Grundinstallation von Zope 2.6.1

1. Entpacken von Zope-2.6.1 nach /usr/local/
2. Starten der Installation durch Aufruf *./install* im Zope-Verzeichnis
3. Initialnutzer anlegen durch das Ausführen von *python2.1 zpasswd.py access*
4. Ausführen von *chmod o+t* auf das Verzeichnis /usr/local/Zope*/var
5. Anlegen des Nutzers *zope* durch Aufruf *adduser zope*
6. UID des Nutzers zope in *z2.py* hinterlegen
7. Verzeichnis *site-packages* von python2.1 nach /usr/local/Zope*/lib/python2.1/ verlinken (z.B. *ln -s /usr/lib/python2.1/site-packages /usr/local/zope/lib/python2.1/site-packages*)
8. Anlegen des Nutzers faxuploader in Zope

Anpassung des Apache-Webservers

1. innerhalb von */usr/local/Zope/pcgi/* die Befehle *./configure, make, make install* ausführen
2. Datei von */usr/local/Zope-2.6.1-x/Zope.cgi* nach */var/www/cgi-bin/Zope* verlinken
3. Hinterlegen der benötigten RewriteRules in der Apache-Config-Datei

   Unsere RewriteRules in httpd.conf:

   ```
   RewriteEngine on
   RewriteRule ^/static/(.*) /var/www/html/$1 [l]
   RewriteRule ^/cgi-bin/(.*) /var/www/cgi-bin/$1
   [e=HTTP_CGI_AUTHORIZATION:%1,t=application/x-httpd-cgi,l]
   RewriteCond %{HTTP:Authorization} ^(.*)
   RewriteRule ^/(.*) /var/www/cgi-bin/Zope/FaxDB/Fax/$1
   [e=HTTP_CGI_AUTHORIZATION:%1,t=application/x-httpd-cgi,l]
   ```

Installation und Konfiguration des HylaFax-Server

Die Installation des HylaFax-Servers erfolgte nach den HowTos, die auf der Hersteller-Seite des HylaFax-Servers zu finden sind (http://www.hylafax.org). Es wurde dabei wie folgt vorgegangen.

1. Installieren von Hylafax-RPM - in unserem Fall HylaFax-4.1.7 (Packetabhängigkeiten beachten)
2. Ausführen von */usr/sbin/faxsetup* (siehe HylaFax-HowTo)
3. Ausführen von */usr/sbin/faxaddmoden*
4. Den Eintrag '*mo:2345:respawn:/usr/sbin/faxgetty ttySx*' in die Datei */etc/inittab* einfügen
5. Anlegen des Nutzers 'fax'

Nach dieser Grundinstallation sind noch weitere Vorkehrungen zu treffen. Es muss für das jeweilig verwendete Modem eine gültige Konfigurationsdatei vorliegen, die eventuell an die spezifischen Gegebenheiten angepasst werden muss (z.B. Dialstring anpassen).

Nach der Installation und Konfiguration des Fax-Servers und des Modems ist die mitgelieferte Datei *faxrcvd* nach */var/spool/hylafax/bin/faxrcvd* zu kopieren. Danach muss das Skript konfiguriert werden, indem spezielle Variablen im Skript mit aktuellen Werten belegt werden. Es müssen u.a. Angaben zum Namen des Zope-Servers (FQDN), des Mail-Servers, des LDAP-Servers und dessen Base DN gemacht werden sowie die Angabe von Absender- und Empfängeradressen für automatisch generierte Mails (durch faxrcvd) und die Angabe des Zope-FTP-Users faxuploader sowie dessen Passwort. Wurden alle benötigten Informationen eingetragen, so führt dieses Skript bei dem Empfang von Faxen folgende Aktionen durch:

- bei fehlerhaftem Empfang spezielle E-Mail-Adresse anschreiben
- Fax wird in alle notwendigen Formate konvertieren
- durch den Einsatz der Perl-Module Net::FTP und HTTP::Request wird das Faxobjekt bzw. dessen Properties auf dem Zope-Server angelegt und die Dateien übertragen
- Benachrichtigung der Faxmanager (LDAP-Gruppe) per Email über Faxeingang

Diese Installation und Konfiguration ermöglicht den Fax-Empfang über den jeweiligen Server. Für das Versenden von Faxen ist eine spezielle Client-Applikation unter Microsoft Windows vorgesehen - der *Windows HylaFax Client (WHFC)*. Um Clients das Versenden von Faxen über HylaFax zu ermöglichen, muss die Datei *$hylafax/etc/hosts.hfaxd* dahingehend verändert werden, dass beispielsweise Clients einer bestimmten Domain Faxe versenden dürfen.

Installation des ZopeFax-Produktes

Vor der Installation bzw. des Imports des ZopeFax-Produktes müssen zusätzlich folgende Zope-Produkte installiert/importiert werden:

- DBTab - optional (z.B. zur Erstellung einer eigenen Zope-DB zur Trennung der Daten einer Fax-Instanz von der Zope-DB)

- Xron

- LDAPUserFolder (Konfiguration der LDAP-Parameter)

Nach der Installation dieser Produkte kann die Installation des ZopeFax-Produktes vorgenommen werden.

1. Import des Fax-Produktes (als XML-File) in Zope-Umgebung - **Achtung!:** Bereits vorhandene Version des **Fax-Produktes** (nicht Instanzen) vor dem Import löschen

2. Anlegen eines Verzeichnises *faxTemp/* im Verzeichnis /usr/local/Zope*/var mit Lese- und Schreibrechten für den Nutzer zope(benötigt für temporäre Lese-/Schreibprozesse des Fax-Produktes)

3. Kopieren der benötigten Zope-externen Skripte (rotateFax.py, faxRecover.py, libRotate.py, searchLDAP_sort.py) in das Verzeichnis */usr/local/Zope*/Extensions* (User *zope* muss zur Ausführung der Skripte berechtigt sein)

4. Überprüfen des Xron-Scheduler Catalog - im Fax-Produkt gibt es ein Xron-Objekt, das durch den Import im Scheduler auftaucht und sich dort repliziert, obwohl es deaktiviert ist -> "update catalog" oder explizites Löschen des Xron-Objektes

Erzeugen der Faxinstanz

Vor dem Erzeugen der neuen Faxinstanz sollten noch bestimmte Konfigurationsangaben in dem Faxprodukt überprüft werden. Diese Angaben sind in den Propertysheets des Fax-Produktes enthalten. Bitte vergewissern Sie sich, dass die Angaben in den Propertysheets korrekt sind oder passen Sie diese eventuell auf Ihre Bedürfnisse an.

1. Anlegen einer neuen Fax-Instanz über die Drop-Down-Box im oberen rechten Fensterbereich des Zope-Management-Interfaces - *Fax-Instanz* auswählen und *Add* klicken (bei Bedarf über fstab als Unterverzeichnis einer eigenen Zope-Datenbank)

2. Wechsel in die Fax-Instanz (in oberste Verzeichnisebene) und Anpassung des Xron-Objektes *faxAge*:

   - aktuelles Datum und Zeitangabe für *Execute at* setzen zur Ausführung der Überprüfung auf veraltete Faxe (z.B. 2003/11/28 01:00:00 GMT+1)

   - Wert setzen für *Reschedule Interval* als Angabe für Periodizität der Überprüfung (z.B. 1.0 bedeutet einmalige Ausführung pro Tag)

3. Überprüfen der Einstellungen im LDAPUserFolder-Objekt *acl_users* auf der obersten Verzeichnisebene der Fax-Instanz auf

   - Korrekte User Base DN - Verzeichnis der Nutzer im LDAP

   - Korrekte Groups Base DN - Verzeichnis der Gruppen im LDAP

- Unter Tab "LDAP Schema" Mappings kontrollieren:

  - LDAP Attribut *mail* muss vorhanden sein, unter dem E-Mail-Adressen zu finden sind

  - LDAP Attribut *uid* muss vorhanden sein, unter dem Nutzer-ID zu finden ist

  - LDAP Attribut *cn* muss vorhanden sein, unter dem Canonical User Name zu finden ist

  - LDAP Attribut *sn* muss vorhanden sein, unter dem Last Name des Users zu finden ist