Zimbra Collaboration Suite™ Administrator’s Guide

ZCS 3.0
Open Source Edition
February 2006

Building Better Products within the Open Source Community

Zimbra Collaboration Suite leverages many great technologies from the open source community: MySQL, OpenLDAP, Postfix, SpamAssassin, and Apache. Zimbra believes that great products come from contributing to and leveraging open source technologies. We are thankful for the great contributions that led to the creation of MySQL, OpenLDAP, Postfix, SpamAssassin, and Apache.

Trademark and Licensing

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Chapter 1 Introduction

Zimbra™ Collaboration Suite is a full-featured mail system offering reliable high-performance service and advanced mail features including advanced search capability, mail sorted by conversations, calendar, and tags, as well as standard mail features such as contacts, user-defined folders, and user-defined filters.

Intended Audience

This guide is intended for systems administrators responsible for installing, maintaining, and supporting the server deployment of Zimbra.

Readers of this guide should already possess the following recommended knowledge and skill sets:

- Familiarity with the associated technologies and standards, including Red Hat® Enterprise Linux® operating system and open source concepts
- Industry practices for mail system management

Available Documentation

Zimbra includes the following documentation:

- *Installation Guide*s. Installation guides for single server and multi-server installation, include system requirements and server configuration instructions.
- *Administrator Guide*. This guide provides a comprehensive product overview, including architecture, server functionality, administration tasks, configuration options, and monitoring. This guide is provided in PDF format and is available from the administration console.
- *Zimbra Migration Wizard Guide*. This guide provides instructions for running the Migration Wizard to migrate accounts from a Microsoft Exchange server.
- *Zimbra administration console Help*. Describes how to use the system administration console.
- *Zimbra Web Client Help*. Describes how to use the end-user interface.

- *Release Notes*. Late-breaking news for product releases and upgrade instructions are contained in Release Notes.

Support for Recommended Third-Party Components

Where possible, Zimbra adheres to existing industry standards and open source implementations for backup management, user authentications, operating platform, and database management. However, Zimbra only supports the specific implementations described in the Zimbra Collaboration Suite architecture overview in the Product Overview chapter as officially tested and certified for the Zimbra Collaboration Suite. This document may occasionally note when other tools are available in the marketplace, but such mention does not constitute an endorsement or certification.

Support and Contact Information

Visit **www.zimbra.com** to join the community and to be a part of building the best open source messaging solution. We appreciate your feedback and suggestions.

- Contact sales@zimbra.com to purchase Zimbra Collaboration Suite
- Network Edition customers can contact support at support@zimbra.com
- Explore the Zimbra Forums for answers to installation or configurations problems
- Join the Zimbra Community Forum, to participate and learn more about the Zimbra Collaboration Suite.
- Send an email to feedback@zimbra.com to let us know what you like about the product and what you would like to see in the product. Or, if you prefer, post your ideas to the Zimbra Forum.

If you encounter problems with this software, go to http://bugzilla.zimbra.com to submit a bug report. Make sure to provide enough detail so that the bug can be easily duplicated.

Chapter 2 Product Overview

This chapter describes the Zimbra application architecture, integration points, and information flow.

The Zimbra Collaboration Suite is designed to provide an end-to-end mail solution that is scalable and highly reliable. The messaging architecture is built with well-known open-system technology and standards and is composed of a mail server application and a client interface.

The architecture includes the following core advantages:

- **Open source integrations**. Linux®, Apache Tomcat, Postfix, MySQL®, OpenLDAP®.
- **Uses industry standard open protocols**. SMTP, LMTP, SOAP, XML, IMAP, POP.
- **Modern technology design**. Java, JavaScript thin client, DHTML.
- **Horizontal scalability**. Because each mailbox server includes its own data store, message store, and set mailbox accounts, you don't change anything on existing servers in order to scale the system. To scale for additional mail accounts, add more servers.
- Browser based client interface.
- Administration console to manage accounts and servers.

Core Functionality

The Zimbra Collaboration Suite offers a robust set of features. The core functionality within the Suite is as follows:

- Mail delivery and storage
- Indexing of mail messages upon delivery
- Mailbox server logging
- IMAP and POP support
- Mail delivery and routing
- Directory services
- Anti-spam protection

- Anti-virus protection

Administrators can easily manage domains, servers, and accounts from the browser based administration console.

- Import Microsoft Exchange user accounts
- Add accounts and domains
- Set account restrictions either for an individual account or by COS
- Manage distribution lists
- Manage servers
- Monitor usage

The Zimbra Web Client mail features include the ability to:

- Compose, read, reply, forward, and use other standard mail features
- View mail by conversation threads
- Tag mail to easily group messages for quick reference
- Use Search Builder to perform advanced searches
- Save searches
- Use the Calendar to schedule appointments
- Share your calendar with others
- Create a personal contacts list
- Set mailbox usage preferences, including defining mail filtering options

Zimbra Components

Zimbra architecture includes open-source integrations using industry standard protocols. The third-party software listed below is bundled with Zimbra software and installed as part of the installation process. These components have been tested and configured to work with the software.

- Apache Tomcat, the web application server that Zimbra software runs in.
- Postfix, an open source message transfer agent (MTA) that routes mail messages to the appropriate Zimbra server.
- OpenLDAP software, an open source implementation of the Lightweight Directory Access Protocol (LDAP) that provides user authentication.
- MySQL database software.
- Lucene, an open-source full featured text index and search engine.
- Anti-virus and anti-spam open source components including:
    - ClamAV, an anti-virus scanner that protects against malicious files.
    - SpamAssassin, a mail filter that attempts to identify spam.

  - Amavisd-new, which interfaces between the MTA and one or more content checkers.
- James/Sieve filtering, used to create filters for email.

System Architecture

Figure 1 shows the Zimbra Collaboration Suite architectural design, including the open-source software bundled with the Suite and other recommended third-party applications.

The Zimbra Collaboration Suite includes the following application packages.

Zimbra Core

The Zimbra Core package includes the libraries, utilities, monitoring tools, and basic configuration files.

Zimbra LDAP

The Zimbra Collaboration Suite uses the OpenLDAP software, an open source LDAP directory server. User authentication is provided through OpenLDAP. Each account on the Zimbra server has an unique mailbox ID that is the primary point of reference to identify the account.

The OpenLDAP schema has been customized for the Zimbra Collaboration Suite.

Zimbra MTA (mail routing server)

Postfix is the open source mail transfer agent (MTA) that receives email via SMTP and routes each message to the appropriate Zimbra mailbox server using Local Mail Transfer Protocol (LMTP). The Zimbra MTA also includes the anti-virus and anti-spam components.

Zimbra Store (Zimbra server)

The Zimbra store package installs the components for the mailbox server, including Apache Tomcat, which is the servlet container the Zimbra software runs within. Each account is configured on one mailbox server, and this account is associated with a mailbox that contains all the mail messages and file attachments for that mail account.

The mailbox server includes the following components:

- Data store
- Message store
- Index store

Each Zimbra server has its own standalone data store, message store and index store for the mailboxes on that server.

As each mail arrives, the Zimbra server schedules a thread to have the message indexed (index store).

Data store. The **data store** is a MySQL database where internal mailbox IDs are linked with user accounts. The data store maps the mailbox IDs to users’ OpenLDAP accounts. This database contains each user’s set of tag definitions, folders, and contacts, as well as the status of each mail message - read, unread, tags associated to message, and folder the message resides in.

Message store. The **message store** is where all email messages and file attachments reside. Messages are stored in MIME format. A message that is sent to multiple recipients who have accounts on one mailbox server are stored only once in the file system.

Index store. Index and search technology is provided through Lucene. Index files are maintained for each mailbox.

Zimbra-SNMP

Installing the Zimbra-SNMP package is optional. If you choose to install Zimbra-SNMP for monitoring, the package should be run on every server (Zimbra server, Zimbra LDAP, Zimbra MTA) that is part of the Zimbra configuration. Zimbra uses swatch to watch the syslog output to generate SNMP traps.

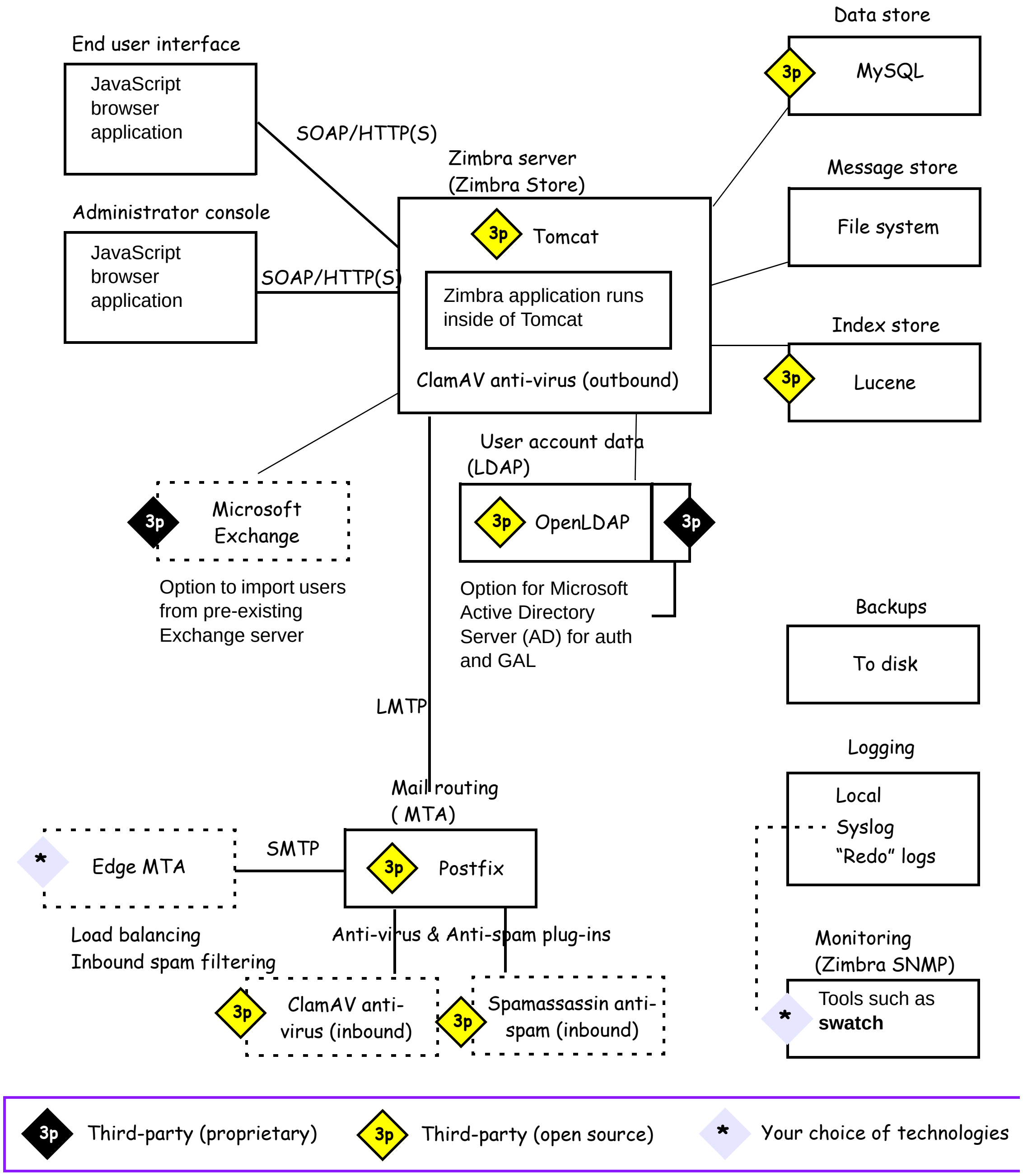
Zimbra Logger

Installing the Zimbra Logger package is optional and is installed on one mailbox server. The Zimbra logger installs tools for syslog aggregation, reporting, and message tracing. If you do not install Logger, you cannot use the message trace feature. In addition, the server statistics are not captured, and the server statistics section of the administration console will not display.

Zimbra Spell

Installing the Zimbra Spell package is optional. Aspell is the open source spell checker used on the Zimbra Web Client. When Zimbra-spell is installed, the Zimbra-apache package is also installed.

Figure 1: Zimbra Collaboration Suite System Architecture


End user interface
JavaScript browser application
SOAP/HTTP(S)
Administrator console
JavaScript browser application
SOAP/HTTP(S)
Zimbra server (Zimbra Store)
3p
Tomcat
Zimbra application runs inside of Tomcat
ClamAV anti-virus (outbound)
Data store
3p
MySQL
Message store
File system
Index store
3p
Lucene
User account data (LDAP)
3p
OpenLDAP
3p
Option for Microsoft Active Directory Server (AD) for auth and GAL
3p
Microsoft Exchange
Option to import users from pre-existing Exchange server
Backups
To disk
LMTP
Logging
Local
Syslog
"Redo" logs
Mail routing (MTA)
*
Edge MTA
SMTP
3p
Postfix
Load balancing
Inbound spam filtering
Anti-virus & Anti-spam plug-ins
3p
ClamAV anti-virus (inbound)
3p
Spamassassin anti-spam (inbound)
Monitoring (Zimbra SNMP)
*
Tools such as swatch
3p
Third-party (proprietary)
3p
Third-party (open source)
*
Your choice of technologies

Zimbra System Directory Tree

Table 1 lists the main directories created by the Zimbra installation packages.

Note: *The directory organization is the same for any server in the Zimbra Collaboration Suite, installing under* ***/opt/zimbra****.*

Table 1 Directory Structure for Zimbra Components

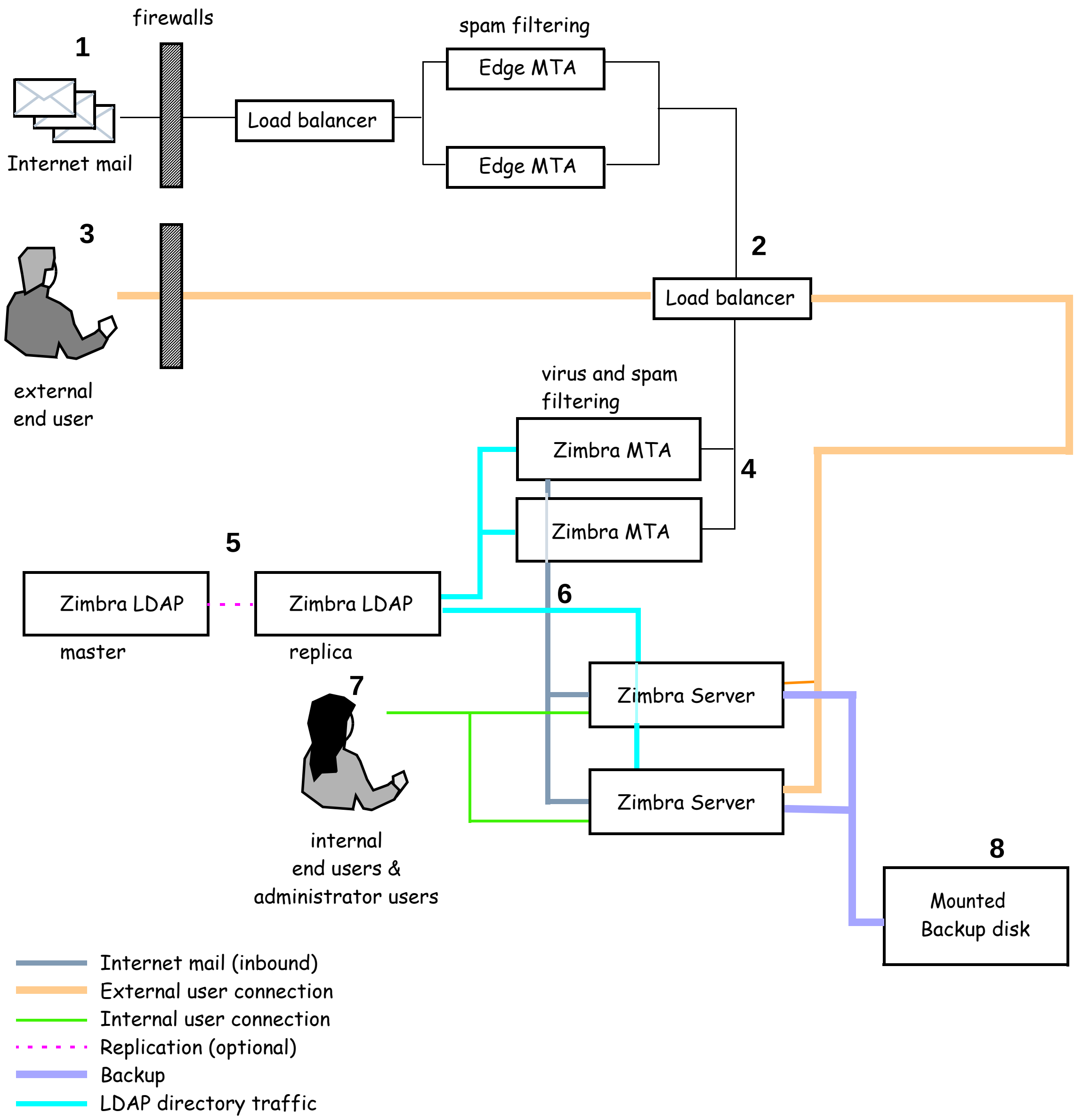
Parent	Directory	Description
/opt/ zimbra/		Created by all Zimbra installation packages
	bin/	Zimbra application files, including the command-line utilities described in Appendix B, Command - Line Utilities.
	conf/	Configuration information
	db/	Data Store
	doc/	Zimbra documentation and readme files
	index/	Index Store
	java/	Contains Java application files
	lib/	Libraries
	libexec/	Internally used executables
	log/	Local logs for Zimbra server application
	logger/	MySQL data files for logger services mysql instance
	mysql/	MySQL database files
	redolog/	Contains current transaction logs for the Zimbra server
	openldap/	OpenLDAP server installation, pre-configured to work with Zimbra
	postfix/	Postfix server installation, pre-configured to work with Zimbra
	sleepycat/	Berkeley DB
	snmp/	SNMP monitoring files
	ssl/	Certificates
	store/	Message Store
	tomcat/	Tomcat application server instance
	zimbramon/	Contains the control scripts and Perl modules

Example of a Typical Multi-Server Configuration

The exact configuration for each deployment is highly dependent on variables including the number of mailboxes, mailbox quotas, performance requirements, existing network infrastructure, IT policies, security methodologies, spam filtering requirements, and so forth.

Figure 2 shows a typical configuration with incoming traffic and user connection. Alternate ways of configuring at many points within the network are possible.

Figure 2: Typical Configuration with Incoming Traffic and User Connections



Explanation of Figure 2 follows.

1 Inbound Internet mail goes through a firewall and load balancing to the edge MTA for spam filtering.

2 The filtered mail then goes through a second load balancer.

3 An external user connecting to the messaging server also goes through a firewall to the second load balancer.

4 The inbound Internet mail goes to any of the Zimbra MTA servers and goes through spam and virus filtering.

5 The designated Zimbra MTA server looks up the addressee’s directory information from the Zimbra LDAP replica server.

6 After obtaining the user’s information from the Zimbra LDAP server, the MTA server sends the mail to the appropriate Zimbra server.

7 Internal end-user connections are made directly to any Zimbra server which then obtains the user’s directory information from Zimbra LDAP and redirects the user as needed.

8 Zimbra servers’ backups are processed to this mounted disk.

Chapter 3 Using the Administration Console

The Zimbra administration console is the browser-based user interface used to centrally manage all Zimbra servers and mailbox accounts.

When you install the Zimbra Collaboration Suite, the administrator's user name and password are configured during installation and an admin account is configured. you can log on to the console immediately after the installation is complete.

Administrator Accounts

Only accounts designated as administrator can log into the administration console to manage accounts and server configurations. One administrator account is initially created when the software is installed. Additional administrator accounts can be created. All administrator accounts have equal privileges.

To give administrator privileges to an account, check the Administrator box on the General tab in the user's account.

Logging on

To start the console in a typical installation, use the following URL pattern.

https://server.domain.com:7071/

Where **server.domain.com** is the current running Zimbra server name or IP address and **default** HTTP listen port is 7071.

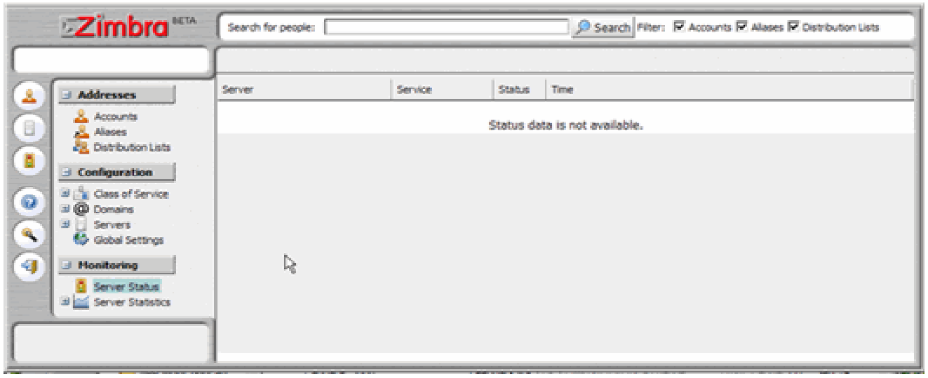
Enter the complete administrator address, as **adminname@domain.com**, and then enter the password. Click **Log On**.

Changing Administrator Passwords

The administrator password is created when the Zimbra software is installed. The password can be changed at any time from the **Accounts** toolbar. Select the administrator account and click change password.

About the Administration Console

When you open the admin console, the right pane is the Server Status page. and the navigation pane, on the left, displays the functions exposed through the console.



Filter: ☑ Accounts ☑ Aliases ☑ Distribution Lists

Status data is not available.

The left navigation pane includes the following folders:

- **Accounts**. Lists all accounts. In the **Accounts** folder, you create and manage end-user accounts, setting options, class of service, passwords and aliases for an account.
- **Aliases**. Lists all aliases that have been created in Accounts. You can use the **Move Alias** feature from the toolbar to move an alias from on account to another.
- **Distribution Lists**. Lists all distribution lists. You can create new distribution lists and add or delete members of a distribution list.
- **Class of Service**. Lists classes of services (COS) that have been created. As a minimum, the default COS is displayed. You can create, edit, or delete COS definitions.
- **Domains**. Lists the domain in the Zimbra environment. You can create and manage domains, configure GAL, and configure the authentication mechanism to use for that domain.
- **Servers**. Lists the servers, the host name and description. You can configure services, MTA, SMTP, IMAP, and POP features for servers.
- **Global Settings**. From the Global Settings folder, you set the global defaults rules for GAL search results, acceptance of incoming attachments, for MTA, POP, IMAP, anti-spam and anti-virus configuration. These default settings are used when personal options and COS settings are not set.
- **Server Status**. Shows the current status, either **On** or **Off,** for all servers that are running Zimbra MTA, Zimbra LDAP, Zimbra Store, SNMP, and the anti-virus service.

- **Server Statistics**. Shows both system-wide and server specific data about the inbound message volume, inbound message count, and disk usage for messages processed in the last 24 hours, the last three months, and the last year.

The **Search for people:** field allows you to quickly find accounts, aliases and distribution lists for editing.

See the Chapter 7, Managing the Zimbra Collaboration Suite, for information about how to configure these functions.

Management Tasks from the Administration Console

From the administration console, you can do the following:

- Create and manage end-user accounts
- Monitor server status and performance statistics
- Add or remove domains
- Create Classes of Service (COS), which are used to define group policies for accounts
- Create distribution lists
- Enable or disable optional user-interface features such as conversations and contacts in the email client
- Configure various global settings for security, address book, and MTAs
- Use the Migration Wizard to migrate Microsoft Exchange server email accounts to the Zimbra server and to import the email and contact information

Management Tasks Not Available from Administration UI

The Zimbra command-line interface (CLI) is another method of configuring and maintaining the Zimbra system. The CLI tool set contains utilities that are not available through the administration console. The CLI options are executed on each server individually.

Use CLI command utilities for the following. See Appendix B, CLI Commands for details about the commands.

- Start and stop services, CLI **zmcontrol**
- Create self-signed certificates, CLI **zmcreatecert**
- Manage local server configuration, CLI **zmlocalconfig**
- Provision accounts in bulk, CLI **zmprov**

Chapter 4 Zimbra Server

The Zimbra server is a dedicated server that manages all of the mailbox contents, including messages, contacts, calendar, and attachments. Messages are received from the Zimbra MTA server and then passed through any filters that have been created. Messages are then indexed and deposited into the correct mailbox.

Each Zimbra mailbox server in the system can see only its own storage volumes. Zimbra mailbox servers cannot see, read, or write to another Zimbra server.

In a Zimbra single server environment, all services are on one server, and during installation the computer is configured to partition the disk to accommodate each of the services.

In a Zimbra multi-server environment, the Zimbra LDAP and Zimbra MTA services can be installed on separate servers. See the Multi-Server Installation Guide.

Incoming Mail Routing

The MTA server, receives mail via SMTP and routes each mail message to the appropriate Zimbra mailbox server using LMTP. As each mail message arrives, the Zimbra server schedules a thread to have Lucene index it.

Disk Layout

The mailbox server includes the following volumes:

- **Message Store.** Mail message files are in **opt/zimbra/store**
- **Data Store.** The MySQL Database files are in **opt/zimbra/db**
- **Index Store.** Index files are in **opt/zimbra/index**
- **Log files.** Each component in the Zimbra Collaboration Suite has log files. Local logs are in **/opt/zimbra/log**

Message Store

The Zimbra Message Store is where all email messages reside, including the message body and any file attachments. Messages are stored in MIME format.

The Message Store is located on each Zimbra server under **/opt/zimbra/store**. Each mailbox has a dedicated directory named after its internal Zimbra mailbox ID.

Note: *Mailbox IDs are unique per server, not system-wide.*

Single-Copy Message Storage

“Single copy storage” allows messages with multiple recipients to be stored only once on the file system. On UNIX systems, the mailbox directory for each user contains a hard link to the actual file. In multi-server configurations, where recipients may be in different Message Stores, one copy exists per server.

Data Store

The Zimbra Data Store is a MySQL database that contains all the metadata regarding the messages including tags, conversations, and pointers to where the messages are stored in the file system.

Each account (mailbox) resides only on one server. Each Zimbra server has its own standalone data store containing data for the mailboxes on that server.

The Data Store contains:

- Mailbox-account mapping. The primary identifier within the Zimbra database is the mailbox ID, rather than a user name or account name. The mailbox ID is only unique within a single mailbox server. The Data Store maps the Zimbra mailbox IDs to the users’ OpenLDAP accounts.
- Each user’s set of tag definitions, folders, and contacts, calendar appointments, filter rules.
- Information about each mail message, including whether it is read or unread, and which tags are associated.

Index Store

The index and search technology is provided through Apache Lucene. Each message is automatically indexed as it enters the system. Each mailbox has an index file associated with it.

The tokenizing and indexing process is not configurable by administrators or users.

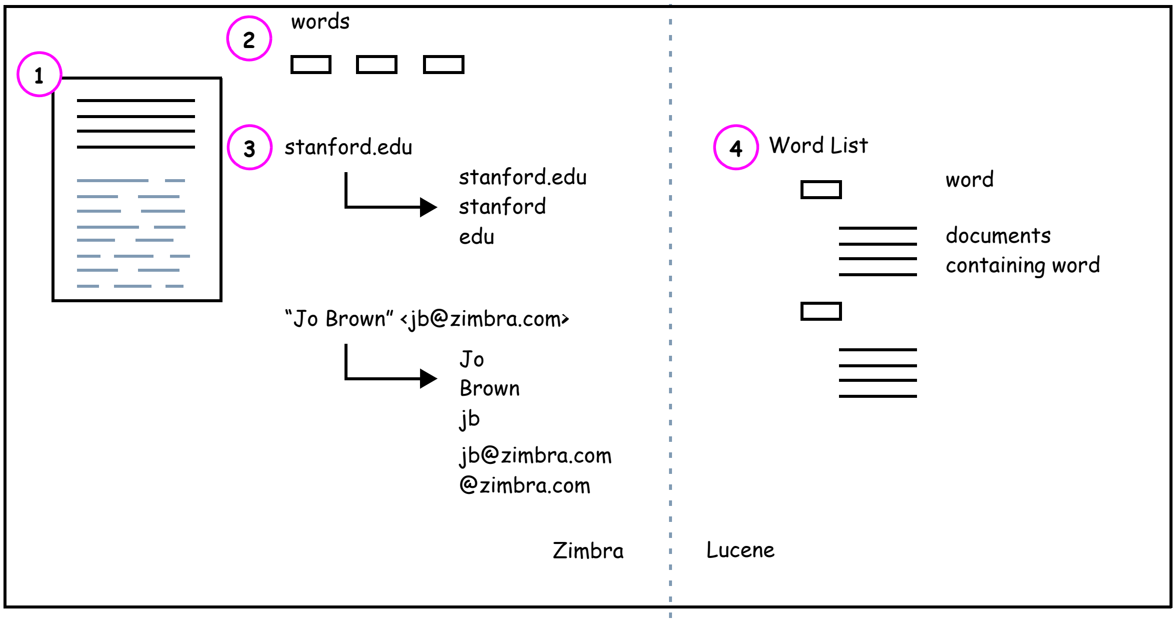
The process is as follows:

1. The Zimbra MTA routes the incoming email to the Zimbra mailbox server that contains the account’s mailbox.
2. The mailbox server parses the message, including the header, the body, and all readable file attachments such as PDF files or Microsoft Word documents, in order to tokenize the words.

3. The mailbox server passes the tokenized information to Lucene to create the index files.

   Note: *Tokenization: The method for indexing is by each word. Certain common patterns, such as phone numbers, email addresses, and domain names are tokenized as shown in Figure 3.*

Figure 3: Message tokenization



Redo Log

Each Zimbra server generates redo logs that contain every transaction processed by that server. If an unexpected shutdown occurs to the server, the redo logs are used for the following:

- To ensure that no uncommitted transactions remain, the server rereads the redo logs upon startup.
- During restore, to recover data written since the last full backup in the event of a server failure.

When the current redo log file size reaches 100MB, the current redo log rolls over to an archive directory. At that point, the server starts a new redo log. All uncommitted transactions from the previous redo log are preserved. In the case of a crash, when the server restarts, the current redo log and the archived logs are read to re-apply any uncommitted transactions.

Log

A Zimbra deployment consists of various third-party components with one or more Zimbra mailbox servers. Each of the components may generate its own logging output.

Selected Zimbra log messages generate SNMP traps, which you can capture using any SNMP monitoring software. See Chapter 11, Monitoring Zimbra Servers

Chapter 5 Zimbra Directory Service

The Zimbra LDAP service is a directory service running a version of the OpenLDAP software that has the Zimbra schema already installed. This chapter describe how the directory service is used for user authentication and account configuration and management.

Note: *Zimbra also supports integration with Microsoft's Active Directory Server. Contact Zimbra support for more detailed information on specific directory implementation scenarios.*

The LDAP server is identified when the Zimbra software is installed. Each server has its own LDAP entry that includes attributes specifying operating parameters. In addition, there is a global configuration object that sets defaults for any server whose entry does not specify every attribute.

A selected subset of these attributes can be modified through the Zimbra administration console; others can be changed through the CLI utility.

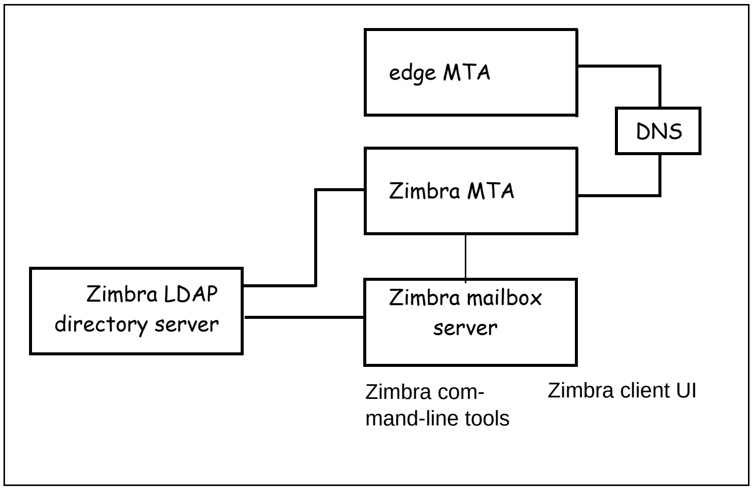
Directory Services Overview

LDAP directory services provide a centralized repository for information about users and devices that are authorized to use your network. The central repository used for Zimbra's LDAP data is the OpenLDAP directory server.

Figure 4 shows traffic between the Zimbra-LDAP directory server and the other servers in the Zimbra system. The Zimbra MTA and the Zimbra mailbox server read from, or write to, the LDAP database on the directory server. The edge MTA does not connect to the LDAP database; instead, it uses the DNS server's MX entry to determine where to direct mail.

The Zimbra clients connect through the Zimbra server, which in turn connects to LDAP.

Figure 4: LDAP Directory Traffic



At the core of every LDAP implementation is a database organized using a *schema*. The schema specifies the types of objects that are stored in the database, and what types of attributes they have.

An LDAP directory entry consists of a collection of attributes and has a globally unique *distinguished name* (DN). The attributes allowed for an entry are determined by the *object classes* associated with that entry. The values of the object class attributes determine the schema rules the entry must follow.

The object classes determine what type of object the entry refers to, and what type of data can be stored for that entry. An entry’s object classes that determines what kind of entry it is, is called a structural object class and cannot be changed. Other object classes are called auxiliary and may be added to or deleted from the entry.

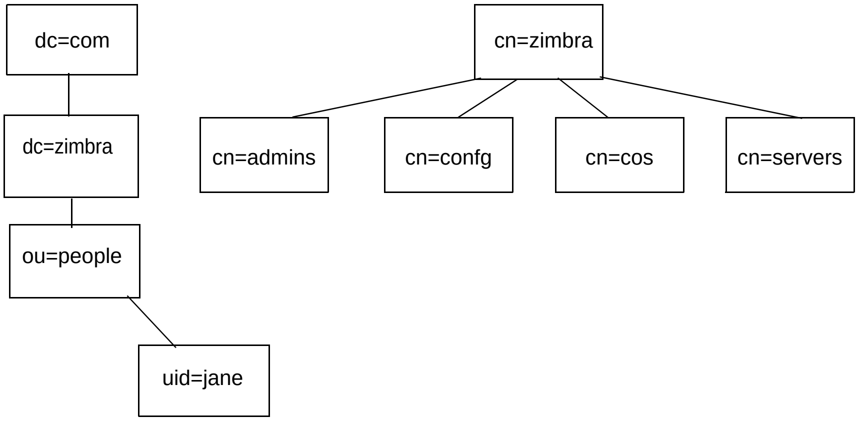
Use of auxiliary object classes in LDAP allows for an object class to be combined with an existing object class. For example, an entry with structural object class **inetOrgPerson,** and auxiliary object class **zimbraAccount,** would be an account, either administrator or end-user. An entry with the object class **zimbraServer** would be a server in the Zimbra system that has one or more Zimbra software packages installed.

LDAP Hierarchy

LDAP directories are arranged in an hierarchal tree-like structure. In the Zimbra system, the structure is arranged based on Internet domain names. LDAP entries typically include items such as user accounts, organizations, or servers.

Figure 5 shows the Zimbra LDAP hierarchy. Each type of entry (object) has certain associated object classes.

Figure 5: Zimbra LDAP Hierarchy



For a complete listing of the Zimbra auxiliary object classes, see the Zimbra LDAP Schema.

Zimbra Schema

Every LDAP implementation has a schema that defines its domain structure, account attributes, and other data structures in use by the organization. Zimbra includes a custom LDAP schema that extends the generic schema included with OpenLDAP software and is designed to potentially coexist with existing directory installations. The Zimbra server, the Zimbra administration console, the command-line account provisioning, and the management utilities require the Zimbra schema.

All attributes and object classes specifically created for Zimbra are prefaced by “zimbra”, as in **zimbraMailRecipient** object class or the **zimbraAttachmentsBlocked** attribute.

The Zimbra schema assumes a baseline schema. In the OpenLDAP installer package included with the Zimbra system, the following schema files are included in the OpenLDAP implementation:

- **core.schema**
- **cosine.schema**
- **inetorgperson.schema**
- **zimbra.schema**

Note: *You cannot modify the Zimbra schema.*

Account Authentication

This section describes the account authentication mechanisms and formatting directives supported:

- **Internal**
- **External LDAP**
- **External Active Directory**

The **Internal** authentication method assumes the Zimbra schema, running on the OpenLDAP directory server.

The **External LDAP** and **External Active Directory** authentication methods attempt to bind to the specified LDAP server, using the supplied user name and password. These method can be used if the email environment uses Microsoft Active Directory directory services for authentication and the Zimbra-LDAP directory services for all other Zimbra-related transactions. This requires that users exist in both OpenLDAP and in the Active Directory servers.

The method type is set on a per-domain basis, using the **zimbraAuthMech** attribute, with other information also coming from the domain. If this attribute is not set, the default is to use the internal method as the authentication.

The Internal Authentication Mechanism

For accounts stored in the OpenLDAP server, the **userPassword** attribute stores a salted-SHA1 (SSHA) digest of the user’s password. This information is not used to connect to the directory server; it is only used to compare with the information on the OpenLDAP server, using a pool of re-usable administrator LDAP connections.

External LDAP and External Active Directory Authentication Mechanism

Unlike the internal authentication mechanism, the external authentication mechanism attempts to bind to the directory server using the supplied user name and password. If this bind succeeds, the connection is closed and the password is considered valid.

Two additional domain attributes are required for the external mechanism: **zimbraAuthLdapURL** and **zimbraAuthLdapBindDn**.

zimbraAuthLdapURL Attribute and SSL

The **zimbraAuthLdapURL** attribute contains the URL of the Active Directory server to bind to. This should be in the form:

ldap://*ldapserver***:***port*/

where *ldapserver* is the IP address or host name of the Active Directory server, and *port* is the port number. You can also use the fully qualified host name instead of the port number.

Examples include:

ldap://server1:389
ldap://exch1.acme.com

For SSL connection, use **ldaps:** instead of **ldap:**. If the SSL version is used, the SSL certificate used by the server must be configured as a trusted certificate.

zimbraAuthLdapBindDn Attribute

The **zimbraAuthLdapBindDn** attribute is a format string used to determine which user name to use when binding to the Active Directory server.

During the authentication process, the user name starts out in the format:

user@domain.com

The user name may need to be transformed into a valid LDAP bind dn (distinguished name). In the case of Active Directory, that bind dn might be in a different domain

Zimbra Objects

Zimbra uses auxiliary object classes to add Zimbra-specific attributes to existing objects such as an account. The LDAP objects used in Zimbra include the following:

- Accounts
- Class of Service (COS)
- Domains
- Distribution Lists
- Recipients
- Servers
- Global Configurations
- Aliases

Accounts Object

An account object represents an account on the Zimbra mailbox server that can be logged into. Account entrees are either administrators or user accounts that can be logged into. The object class name is **zimbraAccount**. This object class extends the **zimbraMailRecipient** object class.

The object class, **zimbraMailRecipient**, is a directory entry that represents an entity that can receives mail. This is a visible external mail address that is expanded through aliases or forwarding into one or more internal/external addresses.

All accounts have the following properties:

- A name in the format of user@some.domain.
- A unique ID that never changes and is never reused.

- A set of attributes, some of which are user-modifiable (options) and others that are only configurable by the system administrator.

All user accounts are associated with a domain, so a domain must be created before creating any accounts.

For more about account provisioning, see the Managing User Accounts section, Chapter 7.

Class of Service (COS) Object

Class of Service is a Zimbra-specific object that defines the default attributes an email account has and what features are added or denied. The COS controls mailbox quotas, message lifetime, password restrictions, attachment blocking and server pools for creation of new accounts. The object class name is **zimbraCOS.**

Each account is assigned a class of service. COS is used to group accounts and define the feature levels for those accounts. For example, executives can be assigned to a COS that allows the Calendar application. By grouping accounts into specific type of COS, account features can be updated in block.

If the COS is not explicitly set, or if the COS assigned to the user no longer exists, values come from a pre-defined COS called “default”.

A COS is not restricted to a particular domain or set of domains.

Domains Object

A Domains object represents an email domain such as *ace.**com*** or *zink.**org**.* A domain must exist before email addressed to users in that domain can be delivered. The object class name is **zimbraDomain**.

Distribution Lists Object

Distribution Lists, also known as mailing lists, are used to send mail to all members of a list by sending a single email to the list address. The object class name is **zimbraDistributionList**.

Recipient Object

Recipient object represents an entity that can receive mail. An external email address exists, and the recipient can be expanded through aliases or forwarding into one or more internal/external addresses. The object class name is **zimbraMailRecipient**. This object class name is only used in conjunction with **zimbraAccount** and **zimbraDistributionlist** classes.

Servers Object

The servers object represents a particular server in the Zimbra system that has one or more of the Zimbra software packages installed. During the installation, the software is automatically registered on the OpenLDAP server. The object class name is **zimbraServer**. Attributes describe server configuration information, such as which services are running on the server.

The server name is used by the Zimbra system to make a request for the server object in the directory. The server requested gets its configuration information and picks up any changes that might have been made by the administrator through the Zimbra Administrator Console.

Global Configuration Object

The Global Configuration object specifies default values for the following objects: server, account, COS, and domain. If the attributes are not set for other objects, the values are inherited from the global settings. The object class name is **zimbraGlobalConfig**.

Global configuration values are required and are set during installation as part of the Zimbra core package. These become the default values for the system.

Alias Object

Alias object is a placeholders in the directory to reserve a name. The object class name is **zimbraAlias**. The attribute points to another entry.

Company Directory/GAL

A company directory is a company-wide listing of users, usually within the organization itself, that is available to all users of the email system. Sometimes called “white pages” or global address list (GAL), Zimbra uses the company directory to look up user addresses from within the company.

For each domain used in Zimbra, you can choose from the following GAL search options:

- Use an external LDAP server for the GAL
- Use the Zimbra implementation in OpenLDAP
- Include both external LDAP server and OpenLDAP in GAL searches

GAL Searches in Zimbra Client

The Zimbra client can search the GAL. The GAL search returns a list of directory entries that match the user’s search.

When the user supplies a name to search for, that name is turned into an LDAP search filter similar to the following example:

```
(|(cn = %s*)(sn=%s*)(gn=%s*)(mail=%s*)
   (zimbraMailDeliveryAddress = %s*)
```

```
(zimbraMailAlias=%s*)
(zimbraMailAddress = %s*)
```

The string “%s” is replaced with the name the user is searching for.

GAL Attributes in Zimbra

Two possible sources for GAL information are the Zimbra server and the Active Directory server. The relevant LDAP/Active Directory fields are referenced in the Zimbra schema under the same names as listed in the Active Directory schema.

Table 2 maps generic GAL search attributes to their Zimbra contact fields.

Table 2 Attributes Mapped to Zimbra contact

Standard LDAP Attribute	Zimbra Contact Field
co	workCountry
company	Company
givenName/gn	firstName
sn	lastName
cn	fullName
initials	initials
l	workCity
physicalDeliveryOfficeName	office
ou	department
street, streetaddress	workStreet
postalCode	workPostalCode
telephoneNumber	workPhone
st	workState
title	jobTitle
mail	email
objectClass	Not currently mapped

Zimbra GAL Search Parameters

Like authentication, GAL is configured on a per-domain basis. From the administration console, you can run the GAL Configuration Wizard to configure the domain’s attributes.

Modifying Attributes

The OpenLDAP directory should not be modified directly. Any additions, changes and deletions are made through the Zimbra administration console or from the CLI utility for provisioning, **zmprov.**

Users modify attributes for their entry (accounts) in the OpenLDAP directory when they change their options from the Zimbra Web Client.

Administrators can also modify LDAP attributes using the command-line tools described in Appendix B: Command-Line Utilities.

Important: *Do not use any LDAP browsers to change the Zimbra LDAP content.*

Chapter 6 Zimbra MTA

The Zimbra MTA (Mail Transfer Agent) receives mail via SMTP and routes each message, using Local Mail Transfer Protocol (LMTP), to the appropriate Zimbra server.

The Zimbra MTA server includes the following programs:

- Postfix MTA, for mail routing, mail relay, and message blocking.
- Clam AntiVirus, an antivirus engine integrated with the MTA, designed for email scanning.
- SpamAssassin, a mail filter that attempts to identify unsolicited commercial email (spam), using a variety of mechanisms.
- Amavisd-New, a Postfix content filter used as an interface between Postfix and ClamAV / SpamAssassin.

In the Zimbra Collaboration Suite configuration, mail transfer and delivery are distinct functions. Postfix primarily acts as a Mail Transfer Agent (MTA) and the Zimbra mail server acts as a Mail Delivery agent (MDA).

A configuration script automatically polls the LDAP directory every two minutes for modifications, and updates the Postfix configuration files with the changes.

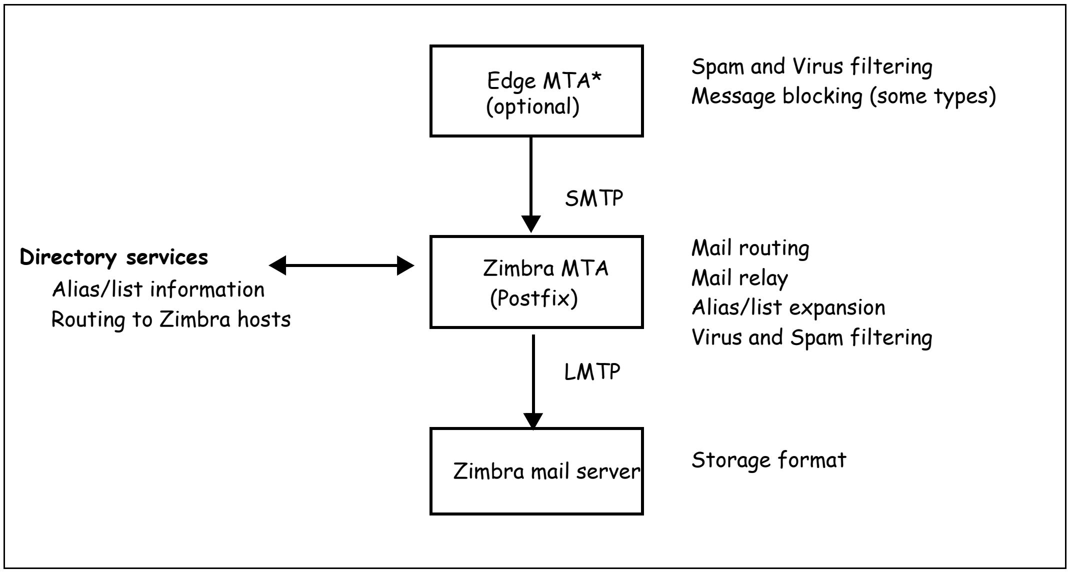
Zimbra MTA Deployment

The Zimbra Collaboration Suite includes a precompiled version of Postfix. This version does not have any changes to the source code, but it does include configuration file modifications, additional scripts, and other tools.

Postfix performs the Zimbra mail transfer and relay. It receives inbound messages via SMTP, and hands off the mail messages to the Zimbra server via LMTP, as shown in Figure 6. The Zimbra MTA can also perform anti-virus and anti-spam filtering.

Postfix also plays a role in transfer of outbound messages. Messages composed from the Zimbra web client are sent by the Zimbra server through Postfix, including messages sent to other users on the same Zimbra server.

Figure 6: Postfix in a Zimbra Environment



***Edge MTA** The term “edge MTA” is a generic term referring to any sort of edge security solution for mail. You may already deploy such solutions for functions such as filtering. The edge MTA is optional. Some filtering may be duplicated between an edge MTA and the Zimbra MTA.

Postfix Configuration Files

Zimbra modified the following Postfix files specifically to work with the Zimbra Collaboration Suite:

- **main.cf** - Modified to include the LDAP tables. The configuration script in the Zimbra MTA pulls data from the Zimbra LDAP and modifies the Postfix configuration files.
- **master.cf** - Modified to use Amavisd-New.

Important: *Do not modify the Postfix configuration files directly! Some of the Postfix files are rewritten when changes are made in the administration console. Any changes you make will be overridden.*

MTA Functionality

Zimbra MTA Postfix functionality includes:

- SMTP authentication
- Attachment blocking
- Relay host configuration
- Postfix-LDAP integration

- Integration with Amavisd-New, ClamAV, and Spam Assassin

SMTP Authentication

SMTP authentication allows authorized mail clients from external networks to relay messages through the Zimbra MTA. The user ID and password is sent to the MTA when the SMTP client sends mail so the MTA can verify if the user is allowed to relay mail.

Note: *User authentication is provided through the Zimbra LDAP directory server, or if implemented, through the Microsoft's Active Directory Sever.*

SMTP Restrictions

In the administration console, you can enable restrictions that cause messages to not be accepted by Postfix when non-standard or other disapproved behavior is exhibited by an incoming SMTP client. These restrictions provide some protection against ill-behaved spam senders. By default, SMTP protocol violators (e.g., clients that do not greet with a fully qualified domain name) are restricted. DNS based restrictions are also available.

Important: *Understand the implications of these restrictions before you implement them. You may want to receive mail from people outside of your mail system, but those mail systems may be poorly implemented. You may have to compromise on these checks to accommodate them.*

Relay Host Settings

Postfix can be instructed to send all non-local mail to a different SMTP server. Such a destination SMTP server is commonly referred to as a “relay” or “smart” host. You can set this relay host on the administration console. Common use case for a relay host is when an ISP requires that all your email be relayed through designated host, or if you have some filtering SMTP proxy server.

In the administration console, the relay host setting must not be confused with web mail MTA setting. Relay host is the MTA to which Postfix relays non-local email. Webmail MTA is used by the Zimbra server for composed messages and must be the location of the Postfix server in the Zimbra MTA package.

Important: *Use caution when setting the relay host to prevent mail loops*

MTA-LDAP Integration

The Zimbra LDAP directory service is used to look up email delivery addresses. The version of Postfix included with Zimbra is configured during the installation of the Suite to use the Zimbra LDAP directory.

Account Quota and the MTA

Account quota is the storage limit allowed for an account. Account quotas can be set by COS or per account. The MTA attempts to deliver a message, and if a Zimbra user's mailbox exceeds the set quota, the Zimbra mailbox server rejects the message as mailbox is full and the sender gets a bounce message.

MTA and Amavisd-New Integration

The Amavisd-New utility is the interface between the Zimbra MTA and Clam AV and SpamAssassin scanners.

Anti-Virus Protection

Clam AntiVirus software is bundled with the Zimbra Collaboration Suite as the virus protection engine. Questions during the installation process asks if you want to enable anti-virus protection. You can also enable or disable virus checking from Global Settings on the administration console.

The Zimbra MTA checks every two hours for any new anti-virus updates from ClamAV. You can modify the frequency. The global settings for the anti-virus protection is configured with these options enabled:

- Block encrypted archives, such as password protected zipped files.
- Send notification to administrator to alert administrators that a virus has been found.
- Send notification to recipient to alert that a mail message to them had a virus and was not delivered.

Anti-Spam Protection

SpamAssassin software is bundled with the Suite as the spam filtering engine. Question during the installation process asks if you want to enable anti-spam protection. The global settings for the anti-spam protection is configured with these options enabled.

- Kill percent at 75%. Mail that is scored at 75% is considered spam and is not delivered.
- Tag percent at 33%. Mail that is scored at 33% is considered spam and is delivered to the Junk folder.
- Subject prefix field is blank. The prefix entered in this field is added to the subject line for messages tagged as spam.

When a message is tagged as spam, the message is delivered to the recipient's Junk folder. Users can view the number of unread messages that are in their Junk folder and can open the junk folder to review the messages marked as spam.

Users can use the Junk button on their toolbar to report a message as spam.

Chapter 7 Managing the Zimbra Collaboration Suite

This chapter describes the following functions used to manage the Zimbra Collaboration Suite. Features can be managed from either the administration console or from the CLI utility.

- Global configuration
- Domains
- Servers
- User Accounts

Help is available from the administration console about how to perform tasks from the administration console. If the task is only available from the CLI, see Appendix B for a description of how to use the CLI utility.

Managing Global Configurations

Global Settings control default global rules that apply to accounts in the Zimbra servers. These are set during installation. The settings can be modified from the administration console.

Global settings include the following tabs:

- General
- Attachments
- MTA
- Pop
- IMAP
- Anti-Spam
- Anti-Virus

Note: *Configurations set in Global Settings define inherited default values for the following objects: server, account, COS, and domain if these attributes are set in the COS or Account set up, they override the global settings.*

General Tab

In the General tab configure the **Most results returned by GAL search** field, which sets a global ceiling for the number of GAL results returned from a user search. The default is 100 results per search .

Attachments Tab

Zimbra supports the following types of attachment blocking:

- **Global settings**, to disable attachment viewing and to reject messages that include attachments with specific extensions.
- **Class of Service**, to disable attachment viewing for members of that COS
- **Accounts**, to disable attachment viewing for individual accounts

In Global Settings, the **Attachments** tab can be configured with global rules to reject mail with files attached and to disable viewing files attached to mail messages in users’ mailboxes. When attachment settings are configured in Global Settings, the global rule takes precedence over COS and Account settings.

If **Disable attachment viewing from web mail UI** is enabled, users cannot view any attachments in their mailbox. You can set this global setting to prevent a virus outbreak if you think that mail has already been sent.

Reject messages with attachment extension lets you select which file types are unauthorized for all accounts. The most common extensions are listed. You can also add different extension types to the list. Messages with those type of files attached are rejected and the sender gets a bounce notice. The recipient does not get the mail message and is not notified.

MTA Tab

From the MTA tab, you can enable or disable authentication and you can configure a relay hostname, the maximum message size, whether to enable DNS lookup, protocol checks, and DNS checks. For a description of Zimbra MTA, see Chapter 6, Zimbra MTA.

- Authentication should be enabled, to support mobile SMTP authentication users so that their email client can talk to the Zimbra MTA
- **TLS authentication only** should be checked
- The **Relay hostname** is the Zimbra MTA to Gateway host
- The Protocol fields are checked to reject unsolicited commercial email (UCE), for SPAM control
- The DNS fields are checked to reject mail, if the client’s IP address is unknown, the hostname in the greeting is unknown and/or if the sender’s domain is unknown

POP Tab

POP3 (Post Office Protocol) can be enabled to allow users with a POP client to access their mail stored on the Zimbra server and download new mail to their computer. The POP configuration determines if messages are deleted from the Zimbra server when downloaded.

IMAP Tab

The Internet Message Access Protocol (IMAP) can be enabled to allow users with an IMAP client to access their mail stored on the Zimbra mailbox server from more than one computer. Messages are stored on the mailbox server.

Anti-Spam Tab

Anti-spam protection can be enabled for each server when the Zimbra software is installed. The following options are configured:

- Kill percent at 75%. Mail that is scored at 75% is considered spam and is not delivered.
- Tag percent at 33%. Mail that is scored at 33% is considered spam and is delivered to the Junk folder.
- Subject prefix field is blank. The prefix entered in this field is added to the subject line for messages tagged as spam.

When a message is tagged as spam, the message is delivered to the recipient’s Junk folder. Users can view the number of unread messages that are in their Junk folder and can open the junk folder to review the messages marked as spam.

Turning On or Off RBLs

RBL (Real time black-hole lists) can be turned on or off in SpamAssassin from the Zimbra CLI.

The three RBL’s that are enabled during installation are the following:

- reject_invalid_hostname
- reject_non_fqdn_hostname
- reject_non_fqdn_sender

You can set the following, in addition to the three above:

- reject_rbl_client dnsbl.njabl.org
- reject_rbl_client opm.blitzed.org
- reject_rbl_client relays.ordb.org
- reject_rbl_client cbl.abuseat.org
- reject_rbl_client bl.spamcop.net
- reject_rbl_client dnsbl.sorbs.net

- reject_rbl_client sbl.spamhaus.org
- reject_rbl_client relays.mail-abuse.org

To turn RBL on

1. Log on to the server and go to the Zimbra directory (su - zimbra)
2. Enter **zmprov gacf | grep zimbraMtaRestriction,** to see what RBLs are set.
3. To add any new RBL types, you must list the existing RBLs and the new RBLs all in one command as:

   zmprov mcf zimbraMtaRestriction [RBL type]

   To add all the possible restrictions, the command would be

   zmprov mcf zimbraMtaRestriction reject_invalid_hostname zimbraMtaRestriction reject_non-fqdn_hostname zimbraMtaRestriction reject_non_fqdn_sender zimbraMtaRestriction "reject_rbl_client dnsbl.njabl.org" zimbraMtaRestriction "reject_rbl_client opm.blitzed.org" zimbraMtaRestriction "reject_rbl_client relays.ordb.org" zimbraMtaRestriction "reject_rbl_client cbl.abuseat.org" zimbraMtaRestriction "reject_rbl_client bl.spamcop.net" zimbraMtaRestriction "reject_rbl_client dnsbl.sorbs.net"

Note: *Quotes must be added to RBL types that are two words.*

Anti-Virus

Anti-virus protection can be enabled for each server when the Zimbra software is installed.

The Zimbra MTA checks every two hours for any new anti-virus updates from ClamAV. You can modify the frequency. The global settings for the anti-virus protection is configured with these options enabled:

- Block encrypted archives, such as password protected zipped files.
- Send notification to administrator to alert administrators that a virus has been found.
- Send notification to recipient to alert that a mail message to them had a virus and was not delivered.

Important: *When the Zimbra Collaboration Suite was installed, if you defined the anti-virus notification address at a zimbra domain name, you should edit the admin account to create an alias for the anti-virus address you created so that any notifications are sent to the admin mailbox.*

Managing Domains

One domain is identified during the installation process and additional domains can be easily added to the Zimbra system from the administration console. For domains, you configure the Global Address List mode and the authentication mode.

The administration console can also be used to edit domain information or to remove a domain.

Global Address List (GAL) Mode

The Global Address List (GAL) is your company directory. The GAL mode to use for lookup can be set as **Internal** to use the Zimbra LDAP, as **External** to use an external LDAP server, or as **Both**.

A GAL configuration wizard steps you through configuring the GAL mode and to set the maximum number of results returned for a search in GAL.

- The **Most results returned by GAL search** can be configured for performance reasons.
- Select which GAL mode to use for lookup, **Internal, External**, or **Both**. If External or Both are selected, additional settings are configured.

Authentication Modes

Authentication is the process of granting login access to legitimate users based on user name and password information provided at login time.

Authentication mechanism options are **Internal**, **External LDAP**, or **External Active Directory**. See “Account Authentication” on page 27.

An Authenticating configuration wizard steps you through configuring the authenticating mode.

Managing Servers

During the installation, the software is automatically registered on the Zimbra LDAP server. You can view the current status of all the servers that are configured with Zimbra software, and you can edit or delete existing server records. You cannot add servers directly to LDAP. The Zimbra Installation program must be used to add new servers because the installer packages are designed to register the new host at the time of installation.

Servers inherit global settings if those values are not set in the server configuration. Settings that can be inherited from the Global configuration include MTA, SMTP, IMAP, POP, anti-virus, and anti-spam configurations.

Managing User Accounts

Managing accounts in the Zimbra system allows you to create accounts and change features easily from the administration console or by using the **zmprov** command-line tool described in Appendix B.

From the administration console you can manage user accounts as follows:

- Quickly create new accounts with the **New Account Wizard**
- Find a specific account using the **Search for people** feature

- Change account information
- Create and change alias addresses
- Change password for a selected account
- View an account's mailbox
- Change an account's status
- Delete an account

See the Chapter 8, Managing End-User Mailbox Features, for descriptions of the mailbox features that can be configured.

Search for People

Search is used to quickly locate individual accounts, aliases and distribution lists on the LDAP server. Search by display name, first name, last name, the first part of the email address, alias, or delivery address. If you do not know the complete name, you can enter a partial name. Partial names can result in a list that has the partial name string anywhere in the information.

You can also use the Zimbra mailbox ID number to search for an account. To return a search from a mailbox ID, the complete ID string must be entered in the search.

Adding user accounts

If you are using the administration console, the New Account Wizard steps you through the account information to be completed. Before you add an user account, you should determine what features and access privileges should be assigned. You configure the following type of information:

- General information, including account name, class of service to be assigned, password
- Contact information, including phone number, company name and address
- Aliases to be used
- Forwarding directions
- Features and preferences available for this specific account. Changes made at the account level override the rules in the COS assigned to the account.

Creating an account sets up the appropriate entries on the Zimbra LDAP directory server. When the end-user logs in for the first time or when an email is delivered to the user's account, the mailbox is created on the mailbox server.

Batch Provisioning from the CLI Utility

For provisioning many accounts at once, you create a formatted text file with the user names. This file runs through a script, using the CLI command, **zmprov**. The **zmprov** utility provisions one account at a time.

Create a text file with the list of the accounts you want to add. Each account should be typed in the format of ca (Create Account), email address, empty password. For example, **ca name@company.com ‘’**

The empty single quote is required, as it indicates that there is no local password.

When the text file includes all the names to provision, log on to the Zimbra server and type the CLI command

```
zmprov <accounts.txt
```

Each of the names listed in the text file will be provisioned.

See Appendix B, for additional syntax definitions.

Manage Aliases

Manage and view all created aliases from the Aliases content pane. You can see to which account an alias is configured. From the Alias toolbar, you can move an alias from one account to another.

Distribution Lists

A distribution list is a group of email addresses contained in a list with a common email address. Distribution lists can be added, changed and deleted from the administration console.

Class of Service

Class of Service (COS) is a Zimbra-specific object that determines what default attributes a Zimbra Web Client email account has and what features are added or denied. The COS controls mailbox quotas, message lifetime, password restrictions, attachment blocking, and server pools for creation of new accounts.

A default COS is automatically created during the installation of Zimbra software. You can modify the default COS to set the attributes to your email restrictions and you can create new COSs to assign to accounts.

Each account is assigned one class of service. When an account is created, if the COS is not explicitly set, the default COS is assigned. Also, if the COS assigned to the user no longer exists, the account is automatically assigned the default COS.

Note: *COS settings assigned to an account are not enforced for IMAP clients.*

A COS is global and is not restricted to a particular domain or set of domains.

Assigning a COS to an account quickly configures account features and restrictions. Some of the COS settings can be overridden either by global settings or by user settings. For example:

- Whether outgoing messages are saved to **Sent** can be changed in the user **Options**.
- Attachment blocking set as a global setting can override the COS setting.

See the Administration Console Help for a complete description of the fields in a class of service object.

Distributing Accounts Across Servers

In an environment with multiple mailbox servers, the class of service is used to assign the next account to a mailbox server. The COS server pool tab lists the mailbox servers in your Zimbra environment. When you configure the COS you select which servers to add to the server pool. Within each pool of servers, a random algorithm assigns new mailboxes to any available server.

Note: *You can assign an account to a particular server when you create an account in the New Account Wizard, Mail Server field.*

Changing Password

Password restrictions can be set either at the COS level or at the account level. You can configure the following password rules:

- Password length. The default is minimum 6, maximum 64. The password is case sensitive.
- When passwords expire. The Zimbra default is to never expire the password.
- How frequently a password can be reused. The default password history allows the password to be reused.
- Password locked. Password cannot be changed.

View an Account’s Mailbox

View Mail in Accounts lets you view the selected account’s mailbox content, including all folders, calendar entries, and tags. This feature can be used to assist users who are having trouble with their mail account as you and the account user can be logged on to the account.

Any View Mail action to access an account is logged to the *audit.log* file.

Changing an Account’s Status

Account status determines whether a user can log in and receive mail. The account status is displayed when account names are listed on the Accounts content pane.

The following account statuses can be set:

- **Active**. Active is the normal status for a mailbox account. Mail is delivered and users can log into the client interface.

- **Maintenance**. When a mailbox status is set to maintenance, login is disabled, and mail addressed to the account is queued at the MTA. An account can be set to maintenance mode for backing up, importing or restoring the mailbox.
- **Locked**. When a mailbox status is locked, the user cannot log in, but mail is still delivered to the account. The locked status can be set, if you suspect that a mail account has been hacked or is being used in an unauthorized manner.
- **Closed**. When a mailbox status is closed, the login is disabled. Messages are bounced. This status is used to soft-delete an account before deleting it from the server.

Enforcing Mailbox and Contact Quotas

You can specify mailbox quotas and number of contacts allowed for each user, through the Zimbra administration console. These limits can be set in the Class of Service or on a per-account basis.

Backing Up the System

Backing up the mailbox server on a regular basis can help you quickly restore your email service if there is an unexpected crash. You should include backing up the Zimbra server in your system-wide backup process. Only full backups of the Zimbra data can be created.

Before backing up the Zimbra data, all servers must be stopped. To stop the servers, use the CLI command, **zmcontrol stop**. After the backup is complete, to restart the servers, use **zmcontrol start**. See Appendix B, for more information about these command.

To restore the Zimbra data, you must delete the existing data and then restore the backup files. The servers must be stopped before restoring the data.

Chapter 8 Managing End-User Mailbox Features

When an account is provisioned, you create the email mailbox, assign the email address and configure how users access and use their mailboxes. This chapter describes the features, advanced controls, and user preferences that can be configured for an account either by assigning a COS or by specifying the feature when you create the account.

When accounts are created from the administration console, the New Account Wizard enables most of the features available to that account. The account creation utility creates the appropriate entries on the zimbra LDAP directory server. The mailbox is created on the Zimbra server upon the user's first log in to the system.

User Mailbox Features

The COS assigned to an account sets the default features for the account. These defaults can be changed for individual accounts. The following table lists the features that can be configured either by COS or by account.

Note: *Mailbox features are enabled for the Zimbra Web Client users. When IMAP or POP clients are used, users may not have these features available.*

Table 3 Configurable Mailbox Features

Feature Name	COS	Account	Description
Contacts	X	X	Lets users create their own personal address book. The maximum number of contacts an account can have can be set in the advanced options.
Calendar	X	X	A calendar and scheduling tool to let users maintain their calendar, schedule meetings, delegate access to their calendar, create multiple personal calendars, and more.

Table 3 Configurable Mailbox Features

Feature Name	COS	Account	Description
Tagging	X	X	Tags allows users to create labels and assign them to messages.
Advanced search	X	X	Advanced search allows users to build a complex search using email by date, domain, flag, object, size, attachment, and folder.
Saved searches	X	X	Saved searches allows users to save a search that they have previously executed or built.
Conversations	X	X	Messages can be displayed grouped into conversations or as a message list. Conversations group messages by subject. If this feature is turned on, it is the default.
Change password	X	X	Change password allows users to change their password at any time.
Initial search preference	X	X	Users can specify a search to execute when they log in.
User-defined mail filters	X	X	Allows users to create rules for managing their email. Rules can include routing mail to different folders.
GAL access	X	X	GAL access allows users to access the company directory.
HTML Compose	X	X	Allows the user to use HTML markup to compose messages that can contain different fonts, colors, and style.
IMAP Access	X	X	Enables users to use third party mail applications, such as Thunderbird or Outlook, to access their mailbox using the IMAP protocol.
POP3 Access	X	X	Enables users to use third party mail applications, such as Thunderbird or Outlook, to access their mailbox using the POP protocol.

Advanced Options

Advanced options that can be set at both the COS and account level are described in the table that follows.

Table 4 Configurable Advanced Options

Advanced Options	COS	Account	Description
Disable attachment viewing from web mail UI	X	X	Users cannot view attachments to their messages. If this feature is enabled in Global Settings, it overrides the COS and individual account settings.
Account quota	X	X	Mailbox size limit in MB. The default is not to set a mailbox quota, which makes the quote unlimited.
Address book size limit	X	X	Maximum number of contacts a user can have in their personal Contacts list.
Minimum/Maximum password length	X	X	Specifies the required length of a password.
Minimum / Maximum password age	X	X	Number of days that a password must remain unchanged before a user can change the password, or the number of days that can elapse before a user is forced to change his password.
Enforce password history	X	X	Number of times a user can change his password before he can reuse an old password.
Password locked	X	X	Users cannot change their passwords.
Email message lifetime	X	X	Number of days a message can remain in any folder before it is automatically purged.
Trashed message lifetime	X	X	Number of days a message remains in the Trash folder before it is automatically purged.
Spam message lifetime	X	X	Number of days a message can remain in the Junk folders, before it is automatically purged.

Table 4 Configurable Advanced Options

Advanced Options	COS	Account	Description
Session token lifetime	X	X	Session token lifetime sets how long a user session remains active, if no activity occurs. Activity includes any clickable mouse action, such as viewing contents of a folder or clicking a button. The default is 2 days.
Must change password		X	When a user logs in for the first time, the is required to change his password.
Administrator		X	In the General Information section, is the option to enable the account to be an administrator account and allows the user to log in to the administration console.

Preferences

How user mailboxes display and behave when a message is composed or received is controlled by preferences that can be configured in the COS and in account configuration. If the preference is set in the account, the user can change it from the Options application on the Web client.

The preferences are listed in the following table.

Table 5 Configurable Preferences

Preferences	COS	Account
Save to Sent	X	X
View mail as HTML	X	X
Always compose in new window	X	X
Reply/Forward using format of the original messages	X	X
Always compose mail using either text or HTML Default is text.	X	X
Signature style, use a separator between message or not. Default is to not separate the signature.	X	X
Enable automatic adding of contacts	X	X
Contacts per page	X	X
Number of items to display per page	X	X
Initial mail search	X	X
Show search string	X	X
Group mail by conversations	X	X

Table 5 Configurable Preferences

Preferences	COS	Account
Enable address for new mail notification and add address		X
Enable mail signature		X
Show time-zone list in appointment view	X	X
Show IMAP search folders	X	X

Additional Account Options

Email Aliases

An alias is an email address that redirects all email it receives to another email account. It is not an email account. An unlimited number of email aliases can be created for an account. Email sent to an alias address is automatically forwarded to the user's account.

Email Forwarding

When setting up an account, you can define different email addresses to forward mail. A copy of each message sent to the account is immediately forwarded to the designated forwarding address.

Email forwarding can only be removed or changed from the administration console.

Users Preferences

End-users can further customize their mailboxes when they log in to the Zimbra web client. The options they modify overrule the account and COS preference settings. The preferences include a General tab, Mail tab, Mail Filters tab, Contacts tab, and a Calendar tab. Only those features that are enabled are shown in the user's Options.

General

Users can:

- Change their passwords
- Select whether to include Junk and Trash folders in their search folders
- Select to always show the search string in the search field
- Set the default font settings

Note: *If Microsoft Active Directory is used for user authentication instead of the Zimbra LDAP, you must disable the user's* ***Change Password*** *feature in their Class of Service. In that case, the* ***Change password*** *option is not displayed.*

Mail

Users can define the following features for their mailbox’s behavior:

- Default view to use (conversations or mail messages)
- The number of items to display on a page
- How often, in minutes, that the Web Client checks for new messages
- Whether to save copies of outbound messages to the **Sent** folder
- Reply-to address
- Reply and forwarding preferences; whether to include original text, and if so, as inline text or as a separate attachment
- Whether to automatically append a signature to outgoing messages and what the text should be
- Enable a vacation/out of office message and what the text should be
- Whether to generate new mail notifications and if so, to which email address notifications should be sent
- Whether to view mail as HTML for messages that include HTML, default is to display messages as plain text
- Whether to ignore messages they send that they then receive
- Whether to compose mail as HTML or plain text
- Whether to compose messages in a separate window

Mail Filter Rules

Users can define a set of rules and corresponding actions to apply to incoming mail. When an incoming mail message matches the conditions of a filter rule, the corresponding actions associated with that rules are applied.

Contacts

Users can configure the following contact behavior:

- Whether to automatically add a contact from a recipient of a message the user has sent
- Which view to view their contacts in, list or cards
- How many contacts to show on a single page
- To import from or export to a file of contacts

Calendar

Users can set the following:

- Which calendar view they want to see when they open their calendar; Day, Work Week, 7-Day Week, Month, or Schedule.
- Which day of the week is the first day to display in the calendars.

- Select to display the time-zone list in their appointment dialog, giving them the opportunity to change time zones while making appointments.
- Whether to use the QuickAdd dialog to create appointments from the calendar pane.
- Whether the mini-navigation calendar always displays in the Mail view. The mini-calendar automatically displays in the Calendar view.

Chapter 9 Working with Zimlets

Zimbra Collaboration Suite created Zimlets as a mechanism to integrate ZCS with different third-party applications to enhance the user experience from the Zimbra Web Client. When a Zimlet is added to the ZCS, users can look at information and interact with the third-party application from within their email messages. Zimlets can be made available from the Zimbra Web Client Overview Pane to users by Class of Service (COS).

Several pre-defined Zimlets are included with ZCS, and you can create other Zimlets so that users can interact with your company resources or other defined applications from the Zimbra Web Client. For more information about creating Zimlets, see the *Zimlets - A Mechanism for Integrating Disparate Information Systems and Content with the Zimbra Collaboration Suite* specification. A copy is available from the Zimbra website.

This chapter describes how to deploy, configure, and manage Zimlets on the Zimbra server. The Zimlets that are included with Zimbra Collaborating Suite are described at the end of this chapter.

Setting Up Zimlets in ZCS

Zimlets are delivered as a zip file that includes all the files necessary to run the Zimlet. The zip file is copied to the Zimbra servers and the administrator use the Zimlet Management Tools to deploy the Zimlet to users.

Deployment and management of Zimlets is only from the command line (CLI).

Deploying Zimlets

The Zimlet .zip file should be copied to each Zimbra server where it will be deployed.

To deploy a Zimlet to the default COS

1. Copy the zip file to the **/opt/zimbra/zimlet** directory.
2. Type the following command

   zmzimletctl deploy <zimlet.zip file name>

This creates the Zimlet entry in the LDAP server, installs the Zimlet files on the server, grants the access to the members of the default COS, and turns on the Zimlet.

Running **zmzimletctl deploy** is equivalent to running the following four commands.

- **zmzimletctl install**
- **zmzimletctl ldapDeploy**
- **zmzimletctl acl default grant**
- **zmzimletctl enable**

To deploy a Zimlet to a COS other than default

To deploy a Zimlet to one or more COSs other than default, first run **zmzimletctl deploy** to install the Zimlet, then adjust the ACL on the COSs.

1. Copy the zip file to the **/opt/zimbra/zimlet** directory.
2. Type the following command

   zmzimletctl deploy <zimlet.zip file name>

   This install the Zimlet files to the server.
3. To add the Zimlet to a COS other than default and grant access, type

   zmzimletctl acl <zimletname> <cosname1> grant

   You can grant access to more than one COS on the same command line. Enter as **zmzimletctl acl <zimletname> <cosname1> grant <cosname2> grant**

   Note: *To turn off access from the default COS, type* **zmzimletctl acl <zimletname> defaultCOS deny**

Configuring a Zimlet

Some Zimlets may require additional configuration after they are deployed before they are ready to run. Your developer will let you know if this is necessary.

The Zimlet Management Tool provides the means for setting up a special Zimlet configuration. You must access the configuration template, make the configuration changes on the template, and then install the new configuration file on the Zimbra server.

How to Change Zimlet Configurations

1. To extract the configuration template type

   zmzimletctl dumpConfigTemplate <zimlet.zip>

   The config_template.xml is extracted from the Zimlet. zip file.

2. Make the required changes in the template. Be careful to only change the required areas. Save the file.

   Note: *If you have more than one custom Zimlet, you should rename the config_template.xml file before updating the configuration in LDAP so that files are not overwritten.*

3. Type the following command to update the configuration in the LDAP

   zmzimletctl configure config_template.xml

Viewing a List of Zimlets

You can see a list of which Zimlets are installed on the Zimbra server, which are enabled or disabled on the LDAP server, and in which COSs the Zimlets are available.

Type **zmzimletctl listZimlets** to view the status of installed Zimlet files.

Disabling or Removing a Zimlet

You can turn off access to a Zimlet from a COS, disable the Zimlet, or remove the Zimlet from the server.

To turn off access to a COS

Type **zmzimletctl acl <zimletname> <cosname> deny**

To disable a Zimlet on the Zimbra server

Type **zmzimletctl disable <zimletname>**

Note: *To enable a disabled Zimlets, type* **zmzimletctl enable <zimletname>.**

To uninstall and remove a Zimlet from the Zimbra server

Type **zmzimletctl undeploy <zimletname>**

The Zimlet and all associated files are uninstalled.

Remove the Zimlet file from **/opt/zimbra/zimlets**

Important: *Only remove custom Zimlets. You should not remove Zimlets that are shipped with the Zimbra Collaboration Suite.*

Zimlets Included with ZCS

Zimbra Collaboration Suite includes preconfigured Zimlets when ZCS is installed. Some of these Zimlets enhance the user experience while in their email messages, letting them click on the following type of text:

- Dates, to see their calendar schedule for that date.
- Email addresses/names, to see complete contact information, if available.

- URLs, to see a thumbnail of the website.
- Phone numbers, to quickly place a call. VOIP software such as Skype or Cisco VOIP phone must be installed on the user’s computer. The user can click the phone number in the message to immediately make a call.

When users right-click on these Zimlets within their messages, additional actions are available. These Zimlets do not require any configuration to work.

The following Zimlets are available by default from Zimlets on the Overview Pane on the Zimbra Web Client.

- The **Amazon** Zimlet, to search Amazon. com
- The **Maps** Zimlet, to quickly look up an address in Yahoo Maps for general reference.
- **Wikipedia** Zimlet lets users quickly search for an entry in Wikipedia.
- The **Search** Zimlet lets users right-click and select from several popular websites to search without having to leave the Zimbra Web Client.

No additional configuration is required to make these Zimlets work. These Zimlets can be disabled, if you do not want users to access them. See Disabling or Removing a Zimlet in this chapter.

Chapter 10 Zimbra Collaboration Suite Import Wizard for Outlook

The Zimbra Collaboration Suite Import Wizard for Outlook lets users import the contents of a .pst file from a Microsoft® Outlook® 2003 mailbox to accounts on the Zimbra server.

The Import Wizard imports email messages, attachments, and contacts. When the files are imported, the Outlook folder hierarchy is maintained. If categories have been assigned to messages and contacts, these are converted to tags in the user’s Zimbra mailbox.

Downloading Import Wizard for Outlook Install Program

The ZCS Import Wizard for Outlook and user import instructions can be downloaded from the Administration Console>Downloads area. You should download these files to an internal install directory that users can access. Users then can download the Import Wizard for Outlook file to their computers and run the executable. The Wizard walks them through a short series of dialogs as described below.

Administrator’s Responsibilities

You will need to do the following for users that want to import their .pst files to the Zimbra Server:

- Create the user account on the Zimbra server before they download their .pst.
- Let your users know how to get the Import Wizard file and how to complete the Zimbra server information as listed below.
- Assist users with locating their .pst files, if necessary.

The ZCS Import Wizard for Outlook Process

The ZCS Import Wizard walks users through the dialogs asking for server information, user information, and import options. The following is a general overview of the steps.

1. Users identify the Zimbra server to receive the .pst file. This is information you must provide to users, including:

- Zimbra server domain name (DNS).
- Which server port to use. For non secured connections, the default is 80. For secured connection, the default is 433. Your configuration can be different.
- Whether to check **Use Secure Connection** (SSL). This box is checked to establish a secure connection to that port.

2. Users enter their Zimbra email address and password
3. Users browse to locate their .pst file
4. Users set import options for their Outlook junk and deleted items folder or to set a date filter to only import messages received after a specified date.

Users can import more than one .pst file. They run the import program once for each .pst file. When additional .pst files are imported, that data is merged with the previously imported data. The Zimbra Inbox folder contains all the items from all .pst folders that were imported.

Any errors or warnings in the import process are displayed on the Import Complete dialog. Users should review items that are listed on this page. If issues need to be investigated, users can click the **Log File** button on this dialog and search the log for details. Once the Wizard is closed, the log file is not longer available.

If a .pst file is run through the Import Wizard more than once, users should check **Ignore previously imported items** on the Import Options dialog. Messages and contacts that have been imported are not imported again.

Outlook Features Not Imported

The following data from Outlook is not imported.

The following commonly used Outlook features are not imported:

- Meeting requests
- Calendar entries
- Notes
- Tasks
- Rules and alerts
- Other files the user created such as journal entries
- Personal Distribution Lists

Chapter 11 Monitoring Zimbra Servers

The Zimbra Collaboration Suite includes the Zimbra Logger package as a monitoring tool to capture and display server statistics and server status and for message tracing.

Also, selected error messages generate SNMP traps, which can be monitored using a SNMP tool.

Note: *Checking the overall health of the system as a whole is beyond the scope of this document.*

Zimbra Logger

Zimbra-Logger includes tools for syslog aggregation, reporting, and message tracing. Installing the Logger package is optional, but if you do not install Logger, Server Statistics and Server Status information is not captured and message tracing is not available.

In environments with more than one Zimbra server, Logger is enabled on only one of the mailbox servers. This server is designated as the “monitor host.” The Zimbra monitor host is responsible for checking the status of all the other Zimbra servers and presenting this information on the Zimbra administration console. The information updates every 10 minutes.

Reviewing Server Status

The **Server Status** page lists all servers and services, their status, and when the server status was last checked. The servers include the MTA, LDAP, and mailbox server. The services include MTA, LDAP, Mailbox, SNMP, Anti-Spam, Anti-Virus, Spell checker, and Logger.

To start a server if it is not running, use the **zmcontrol** CLI command. You can stop and start services from the administration console, **Servers**>**Services** tab.

Server Performance Statistics

The **Server Statistics** page shows bar graphs of the Message Count, Message Volume, Anti-Spam, and Anti-Virus activity. The information is displayed for the last 48 hours, and 30, 60, and 365 days.

- **Message Count** displays the number of messages sent and received per hour and per day.
- **Message Volume** displays the aggregate size in bytes of messages sent and receive per hour and per day.
- **Anti-Spam/Anti-Virus Activity** displays the number of messages that were checked for spam or viruses and the number of messages that were tagged as spam or deemed to contain a virus.

The Message Count and the Anti-spam/Anti-virus Activity graphs display a different message count because:

- Outbound messages may not go through the Amavisd filter, as the system architecture might not require outbound messages to be checked.
- Message are received and checked by Amavisd for spam and viruses before being delivered to all recipients in the message. The message count shows the number of recipients who received messages.

Tracing Messages

You can trace an email message that was sent or received within the last 30 days.

Each email message includes a header that shows the path of an email from its origin to destination. This information is used to trace a message's route when there is a problem with the message. To find the Zimbra email message header, right-click on a message and select **Show Original**.

The CLI utility, **zmmsgtrace** is run to find email messages by the follow:

- Message ID, **-i [msd_id]**
- Sender address, **-s [sender_addr]**
- Recipient address, **-r [rcpt_addr]**
- IP Address sent from, **-f [ip_address]**
- Date and time, **-t yyyymmdd{hhmmss)**

Example

Note: *Message trace is run from the Zimbra Monitor Host, which is the server where Logger is enabled.*

- Message trace, if you know the message ID.

```
zmmsgtrace -i 3836172.14011130514432170
```

- Message trace, if you know the recipient, sender, and date

```
zmmsgtrace -s user@example.com -r user2@example2.com -t 20051105
```

The following message trace example was looking for messages sent from sender, jdoe to recipient address, aol.com any time within the last 30 days.

The details show that two messages were sent, and it shows to whom the messages were sent.

```
$ zmmsgtrace -s jdoe -r aol.com
Tracing messages
from jdoe
to aol.com


Message ID
17357409.1128717619728.JavaMail.companya@example.com
jdoe@example.com -->
kumsh@aol.com
Recipient kumsh@aol.com
2005-01-07 13:40:19 - example.com (10.10.000.20) -->
2005-01-07 13:40:20 - example --> 000.0.0.1
(100.0.0.0) status sent
2005-01-07 13:40:20 Passed by amavisd on example
(CLEAN) HITS: -5.773 in 539 ms
2005-01-07 13:40:20 - localhost.localdomain
(100.0.0.1) --> example
2005-01-07 13:40:20 - example --> mta02.example.com
(0.00.000.00) status sent

Message ID
3836172.14011130514432170.JavaMail.root@example.com
jdoe@example.com -->
harma@aol.com
lt@hotmail.com
Recipient harma@aol.com
2005-01-28 08:47:13 - localhost.localdomain
(000.0.0.1) --> example
2005-01-28 08:47:13 - example --> mta02.example.com (
0.70.000.09) status sent

2 messages found
```

Log Files

Zimbra and Zimbra-related processes generate the following types of log files:

- **Local logs** created by each of the following processes
    - Tomcat server logs
    - MySQL binary logs
    - Lucene logs
    - Postfix logs
    - OpenLdap logs

- **Syslog** file. This is written by the operating system, and contains a subset of the messages written to the local logs. SNMP monitoring typically looks at the syslog file and generates traps for critical errors.

Using log4j to Configure Logging

The Zimbra server uses **log4j**, a Java logging package. By default, the Zimbra server has **log4j** configured to log to the local file system. You can configure **log4j** to direct output to another location.

Logging Levels

The levels for Zimbra logging messages are shown below, along with which ones generate SNMP traps and where, by default, each message type is logged.

Table 1 Zimbra Logging Levels

Level	Local?	Syslog ?	SNMP Trap?	When Used
Critical	Y	Y	Y	A component is down, such as disk full
Error	Y	Y	N	Single user error, unexpected; for example, can't open index
Warning	Y	N	N	Non-fatal error for operation, such as user login failed
Info *	Y	N	N *	Transaction-level logging, such as "user X logged in"
Debug	Y	N	N	Parameters to transactions

* A few non-critical messages such as service startup messages, will generate traps.

SNMP

SNMP Monitoring Tools

You will probably want to implement server monitoring software in order to monitor system logs, CPU and disk usage, and other runtime information.

Zimbra uses swatch to watch the syslog output to generate SNMP traps.

SNMP Configuration

Zimbra includes an installer package with SNMP monitoring. This package should be run on every server (Zimbra, OpenLDAP, and Postfix) that is part of the Zimbra configuration.

The only SNMP configuration is the destination host to which traps should be sent.

Errors Generating SNMP Traps

The Zimbra error message generates SNMP traps when a service is stopped or is started. You can capture these messages using third-party SNMP monitoring software and direct selected messages to a pager or other alert system.

Appendix A Glossary

The Glossary lists terms and acronyms used in this document, and includes both industry terms and application-specific terms. If a general industry concept or practice has been implemented in a specific way within the product, that is noted as well.

Account Policy

Class of Service as exposed in Zimbra administration console.

AD

Microsoft Active Directory Server. Used in Zimbra as an optional choice for authentication and GAL, along with OpenLDAP for all other Zimbra functions.

Alias

An “also known as” email address, which should be routed to a user at a different email address.

Attribute

Contains object-related data for directory server entries. Attributes store information such as a server host name or email forwarding address.

Authentication

Process by which user-supplied login information is used to validate that user’s authority to enter a system.

Blacklist

Anti-spam term, indicates a known bad IP address. This could be one that has been hijacked by spammers, or also one from a poorly maintained but legitimate site that allows mail relaying from unauthorized parties.

BLOB

Binary Large Object file.

Class of Service (COS)

Describes an object in the Zimbra LDAP data schema, which contains settings for things like user mail quotas. Each Zimbra account includes a COS, and the account inherits all the settings from the selected COS.

CLI

Command-Line Interface. Used to refer to the collective set of Zimbra command-line tools, such as **zmprov**.

Cluster

A type of network configuration for high availability, using clusters of servers (nodes). If one server fails or drops off the network, a spare takes over.

Contacts

Within Zimbra, Contacts are a user-interface feature listing that user's personal collection of address and contact information.

Conversation

Within Zimbra, Conversations are a user-interface feature that presents email threads (emails sharing the same subject line) as a single Conversation listing. Users can expand the Conversation to view all emails within it.

DHTML

Dynamic HTML. A technology employed in the Zimbra Web Client.

DNS

Domain Name Services.

Edge MTA

Generic term used to refer to any mail transfer agent that is the first line of defense in handling incoming email traffic. Functions that may occur on the Edge MTA include spam filtering.

Entry

An item in the directory server, such as an account or mail host.

Failover

Takeover process where a spare server machine detects that a main server is unavailable, and the spare takes over processing for that server.

GAL

Global Address List, the Outlook version of a company directory. Lists contact information, including email addresses, for all employees within an organization.

Global Configuration

A Zimbra object containing default settings for servers and Class of Service.

High Availability

Abbreviated as HA, high availability refers to the availability of resources in a computer system in the wake of component failures in the system.

HTTP

HyperText Transfer Protocol, used along with SOAP for UI integration.

IMAP

Internet Message Access Protocol is a method of accessing mail from a remote message store as if the users were local.

Index Store

Within Zimbra, a directory area that stores all the indexing information for mail messages on a particular mailbox server.

Indexing

The process of parsing incoming email messages for search words.

Java

Java is an industry standard object-oriented programming language. Used for the core Zimbra application server.

JavaScript

Scripting largely developed by Netscape that can interact with HTML source code. Technology used in the Zimbra Web Client.

LDAP

Lightweight Directory Access Protocol, an industry standard protocol used for authentication.

Zimbra administration console

The Zimbra administrator interface.

Zimbra Web Client

The Zimbra end-user interface.

LMTP

Local Mail Transfer Protocol, used for transferring messages from Postfix MTA to the Zimbra server for final delivery.

Mailbox Server

Alternative term for Zimbra server.

MAPI

Messaging Application Programming Interface. A system built into Microsoft Windows to enable different email applications to work together.

Message Store

Within Zimbra, a directory area that stores the mail messages on a particular mailbox server.

MDA

Mail Delivery Agent, sometimes known as a mail host. The Zimbra server functions as an MDA.

Metadata

Data that describes other data, rather than actual content. Within Zimbra, metadata consists of user folders, threads, message titles and tags, and pointers.

MIME

Multipurpose Internet Mail Extensions, a specification for formatting non-ASCII Internet message content such as image files. Format used to store messages in Message Store.

MTA

Message Transfer Agent. MTA is a program that delivers mail and transports it between machines. A Zimbra deployment assumes both the Postfix MTA and an edge MTA.

MX (Record)

Mail eXchange. Entry on a DNS server to help lookup.

OOTO

Common shorthand for “out of the office”, used when sending vacation messages.

Open Source

Refers to software created by groups of users for non-commercial distribution, where source code is published rather than proprietary.

OS

Operating system, such as Linux, UNIX, or Microsoft Windows.

POP

Post Office Protocol is used to retrieve email from a remote server over TCP/IP and save it to the local computer.

Provisioning

The process of creating accounts or other data, usually in batch or automated fashion.

RBH

Real-time black hole. Usually refers to web sites that, as a public service, provide lists of known bad IP addresses from which mail should be blocked, because the servers are either known to be spammers, or are unsecured and exploited by spammers.

Redo Logs

Detailed transaction log for the Zimbra server, used for replay and replication.

SAN

Storage Array Network. A high-availability data storage area.

Schema

Describes the data structures in use for by directory services at a particular organizational site.

SMTP

Simple Mail Transfer Protocol. Used in Zimbra deployments between the Edge MTA and the Postfix MTA.

SNMP

Simple Network Monitoring Protocol. Used by monitoring software to pick up critical errors from system logs.

SOAP

Simple Object Access Protocol, an XML-based messaging protocol used for sending requests for Web services. The Zimbra servers use SOAP for receiving and processing requests, which can come from Zimbra command-line tools or Zimbra user interfaces.

Spam

Unsolicited commercial email. Spammers refer to their output as “bulk business email”.

SQL

Structured Query Language, used to look up messages in the Message Store.

SSL

Secure Sockets Layer.

Tags

A Zimbra Web Client feature. Users can define tags and apply them to mail messages for searching.

TCO

Total Cost of Ownership. Zimbra reduces total cost of ownership (TCO) by reducing requirements for server hardware, OS licensing fees, supporting application license fees, disk storage requirements, and personnel (IT, help desk, consulting).

TLS

Transport Layer Security.

UCE

Unsolicited commercial email, also known as spam.

Virtual Alias

A type of mail alias recognized in the Postfix MTA.

Whitelist

Anti-spam term for a known good mail or IP address. Mail coming from such an address may be “automatically trusted”.

XML

eXtended Markup Language.

Appendix B Command-Line Utilities

Command Line Interface (CLI) can be used to create, modify and delete certain features and functions of the Zimbra Collaboration Suite. The administration console is the main tool for maintaining the Zimbra Collaboration Suite, but some functions can only be changed from the CLI utility.

The CLI utility can be used for the following:

- Provisioning accounts*
- Start and stop a service
- Install self-signed certificates
- Local configuration

*This function should be performed from the administration console, but bulk provisioning can be done from the CLI.

CLI commands are run as the zimbra user, that is **su - zimbra**.

General Tool Information

The Zimbra command-line utilities follow standard UNIX command-line conventions.

Long Name	Option	Description and Example
-- help	**-h**	Displays the usage options for the tool. Example: **zmmailboxmove -h** lists all the options available for the **zmmailboxmove** utility.
--mailbox	**-m**	Specify a mailbox. Type the full email address.
--server	**-s**	Specify a server or host name.

Syntax Conventions

When demonstrating the syntax of each tool, the following conventions indicate required, optional, and alternate values:

- {attribute} in curly brackets is required information.
- [attribute] in square brackets are optional arguments or information.
- {a|b|c} or [a|b|c] options separated by the pipe character | means “a” OR “b” OR “c”
- For attribute names that may contain spaces, surround the name with double quotes.

Location of Command-Line Utilities

The command-line tools available for administrators are all located in the **/opt/zimbra/bin** directory on the Zimbra server

zmprov (Provisioning)

The **zmprov** tool performs all provisioning tasks in Zimbra LDAP, including creating, aliases, domains, and distribution lists. Each operation is invoked through command-line options, each of which has a long name and a short name. For example, these two commands are equivalent:

```
zmprov createAccount joe@domain.com test123
zmprov ca joe@domain.com test123
```

The syntax for modify can include the prefix “+” or “-” so that you can make changes to the attributes affected and do not need to reenter attributes that are not changing. Use + to add a new instance of the specified attribute name without changing any existing attributes. Use - to remove a particular instance of an attribute. The following objects use this syntax:

- **ModifyAccount.**
- **ModifyDomain**
- **ModifyCos**
- **ModifyServer**
- **ModifyConfig**

Example, **zmprov ma user1 +zimbraZimletUserProperties testing**
would add the attribute zimbraZimletUserProperties with the value “testing” to user 1 and would not change the value of any other instances of that attribute.

Long Name	Short Name	Syntax, Example, and Notes
CreateAccount	**ca**	Syntax:{name@domain} {password} [attribute1 value1 etc] zmprov ca joe@domain.com test123 zimbraMailHost server1
DeleteAccount	**da**	Syntax:{name@domain|id|adminName} zmprov da joe@domain.com
GetAccount	**ga**	Syntax:{name@domain|id|adminName} zmprov GetAccount joe@domain.com
GetAllAccounts	**gaa**	[-v] [{domain}] zmprov gaa zmprov gaa -v domain.com
GetAllAdminAccounts	**gaaa**	
ModifyAccount	**ma**	{name@domain|id|adminName} [attribute1 value1 etc] zmprov ma joe@domain.com zimbraAccountStatus maintenance
SetPassword	**sp**	{name@domain|id|adminName} {password} zmprov sp joe@domain.com test321
AddAccountAlias	**aaa**	{name@domain|id|adminName} {alias@domain} zmprov aaa joe@domain.com joe.smith@engr.domain.com
RemoveAccountAlias	**raa**	{name@domain|id|adminName} {alias@domain} zmprov raa joe@domain.com joe.smith@engr.domain.com
SetAccountCOS	**sac**	{name@domain|id|adminName} {cos-name|cos-id} zmprov sac joe@domain.com FieldTechnician
SearchAccounts	**sa**	[-v] {ldap-query}

Long Name	Short Name	Syntax, Example, and Notes
SearchGAL	**sg**	{domain} {name} zmprov sg joe
RenameAccount	**ra**	{name@domain|id} {newname@domain} zmprov ra joe@domain.com joe23@domain.com
CreateDomain	**cd**	{domain} [attribute1 value1 etc] zmprov cd mktng.domain.com zimbraAuthMech zimbra
DeleteDomain	**dd**	{domain} zmprov dd mktng.domain.com
GetDomain	**gd**	{domain|id} zmprov gd mktng.domain.com
GetAllDomains	**gad**	[-v]
ModifyDomain	**md**	{domain|id} [attribute1 value1 etc] zmprov md domain.com zimbraGalMaxResults 50
CreateCos	**cc**	{name} [attribute1 value1 etc] zmprov cc Executive zimbraAttachmentsBlocked FALSE zimbraAuthTokenLifetime 60m zimbraMailQuota 100M zimbraMailMessageLifetime 0
DeleteCos	**dc**	{name|id} zmprov dc Executive
GetCos	**gc**	{name|id} zmprov gc Executive
GetAllCos	**gac**	[-v] zmprov gac -v
ModifyCos	**mc**	{name|id} [attribute1 value1 etc] zmprov mc Executive zimbraAttachmentsBlocked TRUE
RenameCos	**rc**	{name|id} {newName} zmprov rc Executive Business

Long Name	Short Name	Syntax, Example, and Notes
CreateServer	**cs**	{name} [attribute1 value1 etc]
DeleteServer	**ds**	{name|id}
GetServer	**gs**	{name|id}
GetAllServers	**gas**	[-v]
ModifyServer	**ms**	{name|id} [attribute1 value1 etc]
GetAllConfig	**gacf**	
GetConfig	**gcf**	{name}
ModifyConfig	**mcf**	
CreateDistributionList	**cdl**	{list@domain} zmprov cdl needlepoint-list@domain.com
AddDistributionList Member	**adlm**	{list@domain|id} {member@domain} zmprov adlm needlepoint-list@domain.com singer23@mail.free.net
RemoveDistributionListMember	**rdlm**	{list@domain|id} zmprov rdlm needlepoint-list@domain.com singer23@mail.free.net
GetAlldistributionLists	**gadl**	[-v]
GetDistributionList	**gdl**	{list@domain|id}
DeleteDistributionList	**ddl**	(list@domain|id}

zmcontrol (Start/Stop Service)

This command is run to start or to stop services.

Syntax

zmcontrol [-v -h] command [args]

Description

Long Name	Short Name	Description
	-v	Displays Zimbra software version.
	-h	Displays the usage options for this command.
Command in...		
reload		Restarts the manager without affecting other services.
shutdown		Shutdown all services and manager on this host. When the manager is shutdown, you cannot query that status
start		Startup manager and all services on this host
startup		Startup manger and all services on this host
status		Returns services information for the named host
stop		Stop all services but leave the manager running.

zmcreatecert (Generate Self-Signed Certificate) and zmcertinstall (Install Certificate)

zmcreatecert is the CLI command used to create a new self-signed certificate. After a certificate is create, **zmcertinstall** is the CLI command to install it.

Tomcat must be stopped and then restarted after the certificate is installed.

Example of steps to use to stop tomcat, delete a certificate that is not working and then create a new certificate and install it.

1. as root, type:
   rm -rf /opt/zimbra/ssl
   mkdir /opt/zimbra/ssl
   chown zimbra:zimbra /opt/zimbra/ssl

2. Type **su - zimbra** then type the following all on one line
   keytool -delete -alias my_ca -keystore /opt/zimbra/tomcat/conf/keystore -keypass zimbra
   Next type the following all on one line
   keytool -delete -alias tomcat -keystore /opt/zimbra/tomcat/conf/keystore -keypass zimbra
3. Type **zmcreateca**, press **Enter**
4. Type **zmcreatecert**, press **Enter**
5. Type **zmcertinstall mailbox**, press **Enter**
6. Type **tomcat stop**, press **Enter**
7. Type **tomcat start**, press **Enter**

zmlocalconfig (Local Configuration)

This tool is used to set or get the local configuration for a Zimbra server.

Syntax

zmlocalconfig [options] [args]

Description

Long Name	Short Name	Description
--config <arg>	-c	File in which the configuration is stored.
--default	-d	The default values for the keays listedin [args} is listed.
--edit	-e	Edit the configuration file, change keys and values specified. the [args] is in the key=value form.
--force	-f	Edit the keys whose change is known to be potentially dangerous
--help	**-h**	Shows the help for the usage options for this tool.
--info	**-i**	Shows the documentation for the keys listed in [args]
--format <arg>	**-m**	Shows the values in one of these formats: plain (default), xml, shell, nokey.
--changed	-n	Shows the values for only those keys listed in the [args] that have been changed from their defaults.

Long Name	Short Name	Description
--path	-p	Shows which configuration file will be used.
--random	-r	This option is used with the edit option. Specified key is set to a random password string.
--show	-s	Forces the display of the password strings.
--expand	-x	Expand values

zmtlsctl (Web server mode)

This tool is can be used to set the Web server mode to the communication protocol options: HTTP, HTTPS or mixed. Mixed mode uses HTTPS for logging in and HTTP for normal session traffic. All modes use SSL encryption for back-end administrative traffic.

Tomcat has to be stopped and restarted for the change to take effect.

Syntax

zmtlsctl <**mode**>

mode = http, https, or mixed)

Steps to run

1. Type **zmtlsctl** <**mode**>, press **Enter.**
2. Type **tomcat stop**, press **Enter.**
3. When Tomcat has stopped, type **tomcat start**, press **Enter.**

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