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# Collaborative Tools

## Collaborative Tools

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Achievements

- ▶ Knowing what is a Collaborative Tool
- ▶ Collaborative tools types

## Definition

### Achievements

- ▶ Allows people to work together
- ▶ Local or Remote
- ▶ Application share, instant communication (chat, video conference...)
- ▶ Data synchronized



## Collaborative Tools Types

### Types

- Communication These tools are focused on communication through the project members
- Conferencing Real-time collaboration of project members. One presenter controls view screen and others provide inputs by talking
- Coordination Manage complex or big tasks with a common goal

## Etherpad

Online real-time collaborative writing editor



## What is it?

What is it?

- ▶ Collaborative real-time editor
- ▶ Allow simultaneously edit a text document
- ▶ Display each author text in their own color
- ▶ Chat box to allow communication
- ▶ Import/Export to major data exchange format
- ▶ No need to install anything

## Pros and Cons

### Pros

- ▶ No login required
- ▶ Anyone can create anew collaborative doc
- ▶ Offers a chat
- ▶ Able to share ideas, lists, piece of information
- ▶ Can be exported in plain text, PDF, HTML, Open Document, Microsoft Word...

### Cons

- ▶ Have to memorize address
- ▶ Can not upload and add images only typing
- ▶ Only light formatting (bold, italic, underlining)
- ▶ Collaborations deleted 15 days after creation

No login required

## Libraries

### Installing Libraries and Development Package

On RHEL / CentOS / Fedora

```
# yum install gzip git-core curl python openssl-devel && yum groupinstall "Development Tools" For  
FreeBSD: portinstall node, npm, git
```

On Debian / Ubuntu

```
$ sudo apt-get install gzip git-core curl python libssl-dev pkg-config build-essential
```



## Installing Node.js

```
$ wget http://nodejs.org/dist/node-latest.tar.gz  
  
$ tar xvfz node-latest.tar.gz  
  
$ cd node-v0.10.23 [Replace a version with your own]  
  
$ ./configure  
  
$ make  
  
$ sudo make install
```

## Etherpad Lite

Download and Install Etherpad Lite

```
//We will create a separate user called "etherpad" to run Etherpad application
```

```
# useradd --create-home etherpad
```

```
# su - etherpad
```

```
$ cd /home/etherpad
```

```
$ git clone http://github.com/ether/etherpad-lite.git
```

```
$ cd etherpad-lite/bin
```

```
$ ./run.sh
```

```
Copy the settings template to settings.json...
```

```
Ensure that all dependencies are up to date... If this is the first time you have run Etherpad please be patient.
```

```
[2013-12-17 05:52:23.604] [WARN] console - DirtyDB is used. This is fine for testing but not recommended for production.
```

```
[2013-12-17 05:52:24.256] [INFO] console - Installed plugins: ep_etherpad-lite
```

```
[...]
```

```
Access Etherpad by typing in browser: http://localhost:9001 or http://your-ip-address:9001
```

## Laboratory

- ▶ Create a user when the platform is successfully installed
- ▶ Create a document to share
- ▶ Find out another storage backend to store the files instead of the current flat-file database system.

## Security & Privacy Concerns

By default all pads of Etherpad are open to general users of Internet.

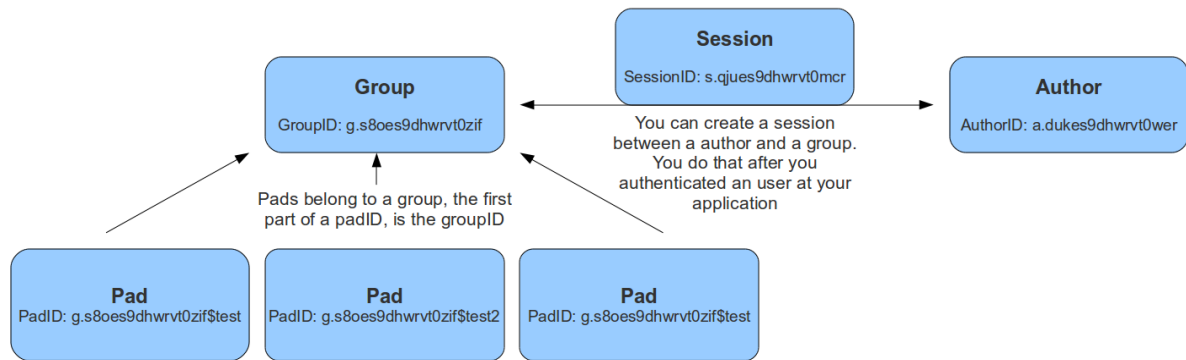
How to solve that?

- ▶ Using Etherpad with HTTPS / SSL
- ▶ IP address logging and automatically deleting unused pads
- ▶ Password protecting
- ▶ OwnCloud: The ability to encrypt your files
- ▶ IRC: Real time chatting, possibility to keep a log of your chats and have them encrypted

## API Reference

What can I do with this API?

- ▶ Create / delete pads
- ▶ Grant / forbid access to pads
- ▶ Get / set pad content



## Session

- ▶ `createSession(groupID, authorID, validUntil)` Creates a new session. `validUntil` is a timestamp in seconds
- ▶ `deleteSession(sessionID)` Deletes a session
- ▶ `getSessionInfo(sessionID)` Returns information about a session

## Pad Content

- ▶ `getText(padID, [rev])` returns the text of a pad
- ▶ `setText(padID, text)` sets the text of a pad

## Pad

- ▶ `createPad(padID [, text])` creates a new (non-group) pad.
- ▶ `padUsersCount(padID)`
- ▶ `deletePad(padID)`
- ▶ `setPublicStatus(padID, publicStatus)`
- ▶ `getPublicStatus(padID)`
- ▶ `setPassword(padID, password)`
- ▶ `getLastEdited(padID)`

and more...



## Slack

Cloud-based team messaging collaborative tool



# slack

## What is it?

- ▶ Collaborative messaging tool
- ▶ IRC-based collaborative tool
- ▶ Persistent chat rooms (channels)
- ▶ Organized by topics
- ▶ Private groups and direct messages
- ▶ All content is searchable, including files, conversation and people

## Installation

- ▶ Slack is a cloud-based collaborative tool
- ▶ Access to the tool through: <https://slack.com/>
- ▶ Available on Android and iPhone

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## Laboratory

## Channel Management

Create a new Channel

- ▶ Click the + icon next to Channels in your sidebar.
- ▶ Decide whether your channel will be public or private
- ▶ Enter a channel name, up to 21 characters long
- ▶ Select team members to invite
- ▶ You can also choose to add a channel purpose
- ▶ When you're ready, click the Create channel button

## Notification Management

Change notification preferences

- ▶ Open the channel.
- ▶ Click the gear icon to open the Channel Settings menu.
- ▶ Select Notification preferences
- ▶ Select new desktop and mobile notification settings for the channel

## Advanced Search

- ▶ Searching: teddy bear will look for messages with teddy or bear in them
- ▶ Searching: “teddy bear” will search only those two words next to each other in any message
- ▶ Searching: "seren\*" will search for words that contain seren: serene, serenity, serendipity, serendipitous...
- ▶ Searching: teddy -bear will look for messages with teddy but not the word bear
- ▶ in:random will search only in the #random channel to:@brianna will locate every message directed to @brianna
- ▶ from:@anca will uncover messages posted from @anca
- ▶ Searching messages with a URL in them with has:link
- ▶ You can even search for a specific emoji has::duck:

## Advanced Search: Time Constraints

- ▶ on:today searches only messages posted today
- ▶ before:June searches everything, you guessed it, before June of the current year
- ▶ during:week searches only since the previous Sunday
- ▶ after:2014 search includes 2015 and beyond, ignores earlier messages



## Advanced Search: File Types

- ▶ `type:pdf sales` will search for the word sales only within uploaded PDFs
- ▶ `types:pdf,gdoc,post revenue report` would look for the words revenue and report in any PDF, Google Document, or Slack Post

Example:

- ▶ `"I remember Shivani saying something about VR displays in #robotics or #gaming in the last month sometime"`
- ▶ `from:@shivani VR in:robotics in:gaming during:month`

## Pricing plans

### Free includes

- ▶ Searchable message archives, up to 10k of your team's most recent messages
- ▶ 10 apps or services integration
- ▶ Native apps for iOS, Android, Mac & Windows Desktop
- ▶ Two-person calls
- ▶ 5GB total file storage for the team

### Standard

- ▶ Unlimited searchable message archives
- ▶ Unlimited apps and services integration
- ▶ Custom retention policies for messages and files
- ▶ Guest access
- ▶ Priority support
- ▶ OAuth via Google

### Includes

- ▶ Mandatory two-factor authentication
- ▶ Custom User Groups to reach a team or department
- ▶ Group calls
- ▶ 10GB file storage per team member

### Plus includes

- ▶ SAML-based single sign-on (SSO)
- ▶ Compliance Exports of all messages
- ▶ 99.99% Guaranteed Uptime SLA
- ▶ 24/7 Support with 4-hour response time
- ▶ User provisioning and deprovisioning

## API

The main API Slack resources are composed by:

- ▶ SlackApps
- ▶ Messages
- ▶ Integrations
- ▶ APIs
- ▶ Authentication

## SlackApps

- ▶ Decide which APIs your app need
- ▶ Create a Slack app and bundle together your integration points
- ▶ Setup your «Add to Slack» Button
- ▶ Add your application to the Directory

## Integrations

- ▶ Post notifications to Slack
- ▶ Invoke external services with slash commands
- ▶ Listen for and respond to messages with a bot user

## APIs

- ▶ Web API
- ▶ Real Time Messaging API
- ▶ Events API
- ▶ Methods
- ▶ Object, Event, Types
- ▶ User Presence

## Authentication

- ▶ Using OAuth 2.0
- ▶ Permission Scope
- ▶ Tokens for Testing
- ▶ Safely storing credentials

<https://api.slack.com/>

## Zimbra

Collaborative software suite, which includes mail server and web client

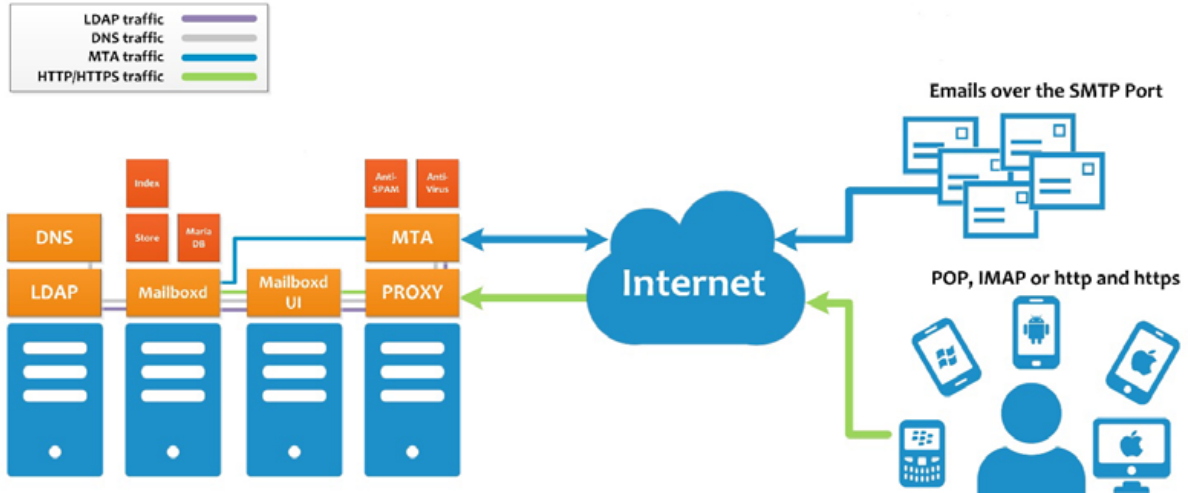




## What is it?

- ▶ Collaborative software suite
- ▶ Includes an email server and web client
- ▶ Two versions: Open Source and Commercial
- ▶ Runs under many Linux distributions
- ▶ Can synchronize with other clients (Microsoft, Apple) through what is called, connectors

## Architecture



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“Creative Commons Attribution-ShareAlike 4.0 International” (<https://creativecommons.org/licenses/by-sa/4.0/>).

## Single Server Installation

## Requirements

- Server
  - ▶ Intel/AMD 64-bit CPU 2.0 GHz
  
- RAM
  - ▶ Minimum 8GB
  
- Disk
  - ▶ 10 GB free disk space (SATA or SCSI for performance, and RAID/Mirroring for redundancy)
  - ▶ Additional disk space for mail storage
  - ▶ RAID-5 not recommended for installations >100 users accounts
  
- OS
  - ▶ RHEL 7 (64-bit)
  - ▶ CentOS 7 (64-bit)
  - ▶ RHEL 6 (64-bit) > patch level 4
  - ▶ CentOS 6 (64-bit) > patch level 4
  - ▶ Ubuntu 14.04 LTS Server Edition (64-bit)
  - ▶ Ubuntu 12.04.4 LTS Server Edition (64-bit) running saucy 3.11 or later kernel
  - ▶ SUSE Linux Enterprise Server (SLES) 11 SP3 (64-bit)

Netcat (nc) is required on all operating systems using Zimbra Collaboration. The nc utility must be installed prior to installation or upgrading.

For SUSE and Ubuntu systems, disable AppArmor and verify that services are not running before installing Zimbra Collaboration.

For Red Hat Enterprise, Fedora Core and SUSE operating systems, the server must also have the following installed:

- ▶ NPTL. Native POSIX Thread Library
- ▶ Sudo. Superuser, required to delegate admins.
- ▶ libidn. For internationalizing domain names in applications (IDNA)
- ▶ GMP. GNU Multiple-Precision Library.

For Ubuntu 14 and Ubuntu 12:

- ▶ Sudo
- ▶ libidn11
- ▶ libpcre3
- ▶ libexpat1
- ▶ libgmp3c2

Server: - Intel/AMD 64-bit CPU 2.0 GHz

RAM: - Minimum 8GB

Disk: - 10 GB free disk space (SATA or SCSI for performance, and RAID/Mirroring for redundancy)

- Additional disk space for mail storage

- RAID-5 not recommended for installations >100 users accounts

OS: - RHEL 7 (64-bit)

- CentOS 7 (64-bit)

- RHEL 6 (64-bit) > patch level 4

- CentOS 6 (64-bit) > patch level 4

- Ubuntu 14.04 LTS Server Edition (64-bit)

- Ubuntu 12.04.4 LTS Server Edition (64-bit) running saucy 3.11 or later kernel

- SUSE Linux Enterprise Server (SLES) 11 SP3 (64-bit)

## Basic Configuration

Download Zimbra Software:

<https://www.zimbra.com/downloads/zimbra-collaboration-open-source/>

The Basic Configuration:

[https://www.zimbra.com/docs/ne/latest/single\\_server\\_install/wwhelp/wwhimpl/js/html/wwhelp.htm#href=1](https://www.zimbra.com/docs/ne/latest/single_server_install/wwhelp/wwhimpl/js/html/wwhelp.htm#href=1)

The default configuration installs:

- ▶ Zimbra-LDAP
- ▶ Zimbra-MTA with anti-virus and anti-spam protection
- ▶ Zimbra mailbox server
- ▶ SNMP monitoring tools (optional)
- ▶ Zimbra-spell (optional)
- ▶ a logger tool (optional)
- ▶ Zimbra proxy (optional) on one server

## Installing Zimbra Collaborative Software

```
[root@mailhost tmp]# tar xzvf zcs.tgz
zcs-NETWORK-8.6.0_3107.UBUNTU10_64.20100916011234/
zcs-NETWORK-8.6.0_3107.UBUNTU10_64.20100916011234/packages/
zcs-NETWORK-8.6.0_3107.UBUNTU10_64.20100916011234/packages/zimbra-
apache_8.6.0_3107.UBUNTU10_64_amd64.deb
.
.
zcs-NETWORK-8.6.0_GA_3107.UBUNTU10_64.20101015011234/install.sh
zcs-NETWORK-8.6.0_GA_3107.UBUNTU10_64.20101015011234/README.txt
.
[root@mailhost tmp]# cd zcs-NETWORK-8.6.0_GA_3107.UBUNTU10_64.20101015011234
[root@mailhost tmp/zcs-NETWORK-8.6.0_GA_3107.UBUNTU10_64.20101015011234# ./install.sh
```

Do you agree with the terms of the software license agreement? [N] **y**

Checking for installable packages

```
Found zimbra-core
Found zimbra-ldap
Found zimbra-logger
Found zimbra-mta
Found zimbra-dnscache
Found zimbra-snmpp
Found zimbra-store
```

.

.

Select the packages to install

Install zimbra-ldap [Y] **y**

Install zimbra-logger [Y] **y**

Install zimbra-mta [Y] **y**

[...]

This is the Main menu to configure the last components of Zimbra

```
1) Common Configuration:
2) zimbra-ldap: Enabled
3) zimbra-logger: Enabled
4) zimbra-mta: Enabled
5) zimbra-dnscache: Enabled
6) zimbra-snmpp: Enabled
7) zimbra-store: Enabled
8) zimbra-spell: Enabled
9) zimbra-convertd: Enabled
10) zimbra-proxy: Enabled
11) Default Class of Service Configuration:
12) Enable default backup schedule: yes
r) Start servers after configuration yes
s) Save config to file
x) Expand menu
q) Quit
```

Verify Zimbra Server Operation

Type su – zimbra in terminal

Type `zmcontrol status`

If services are not running, type `zmcontrol start + command`



## Admin Console

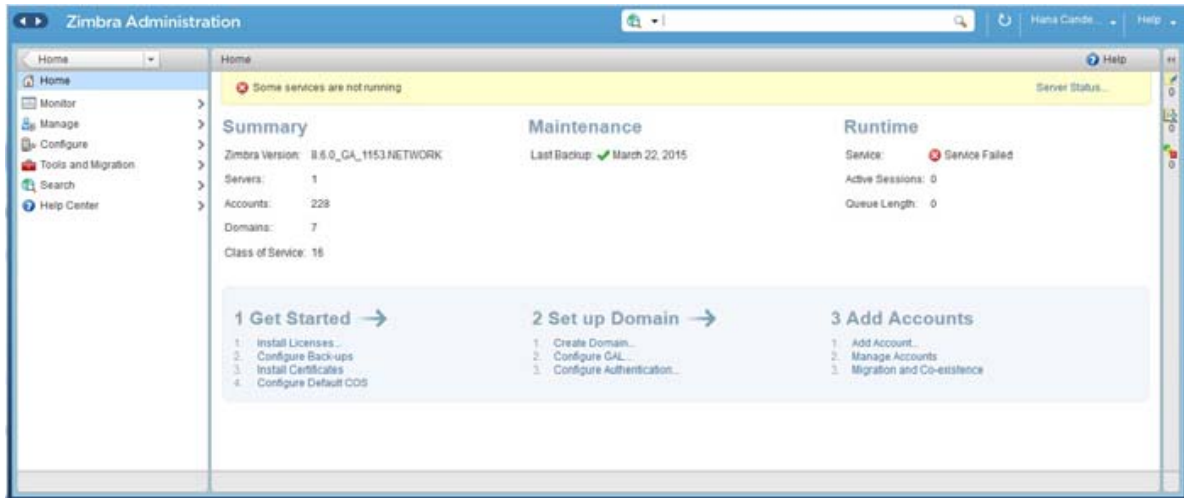
Type in browser: <https://server.domain.com:7071/>

Admin Console contains the following UIs:

- ▶ Home
- ▶ Monitor
- ▶ Manage
- ▶ Configure
- ▶ Global Settings
- ▶ Tools and Migration
- ▶ Search

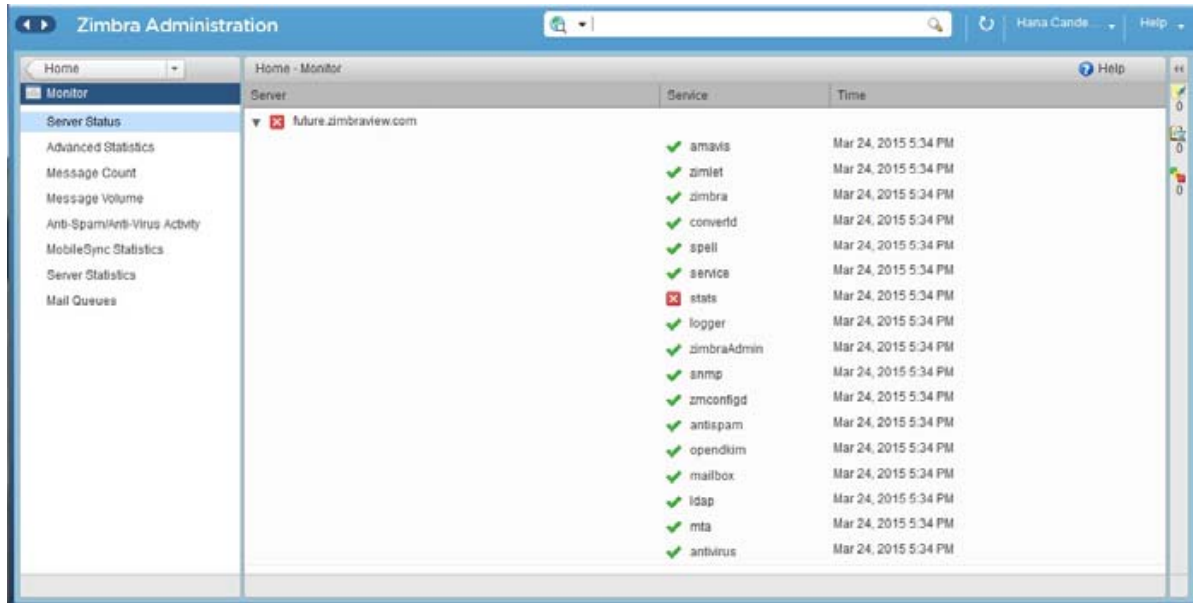
## Home

Displays the version of Zimbra Collaborator currently running and in view, and the detected number of servers, account, domains, and classes of service associated with this session.



## Monitor

Provide various methods - dynamic charts, or tables - for viewing the individual or system-wide monitored servers and services.

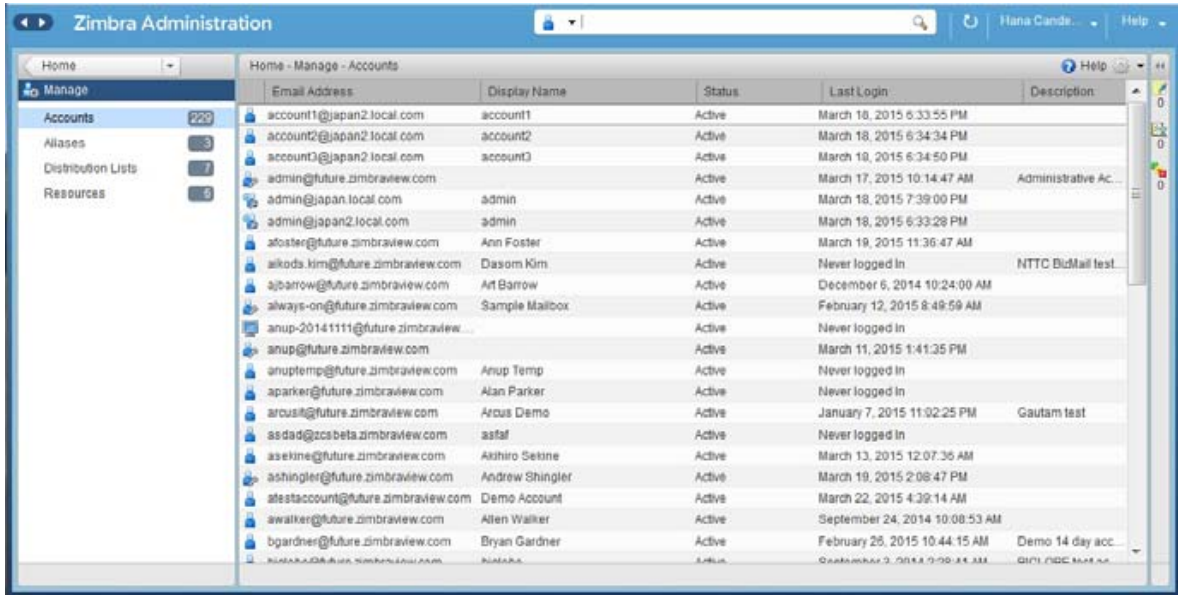


The screenshot shows the Zimbra Administration interface. The main content area displays a table of monitored services for the server 'future.zimbraview.com'. The table has three columns: 'Service', 'Status', and 'Time'. The 'Status' column contains green checkmarks for most services and a red 'X' for 'stats'. The 'Time' column shows the last update time for each service, all of which are 'Mar 24, 2015 5:34 PM'. On the left side, there is a navigation menu with options like 'Server Status', 'Advanced Statistics', 'Message Count', etc. The top of the page includes the 'Zimbra Administration' header and a search bar.

Service	Status	Time
amavis	✓	Mar 24, 2015 5:34 PM
zimlet	✓	Mar 24, 2015 5:34 PM
zimbra	✓	Mar 24, 2015 5:34 PM
convertd	✓	Mar 24, 2015 5:34 PM
spell	✓	Mar 24, 2015 5:34 PM
service	✓	Mar 24, 2015 5:34 PM
stats	✗	Mar 24, 2015 5:34 PM
logger	✓	Mar 24, 2015 5:34 PM
zimbraAdmin	✓	Mar 24, 2015 5:34 PM
snmp	✓	Mar 24, 2015 5:34 PM
zmconfigd	✓	Mar 24, 2015 5:34 PM
antispam	✓	Mar 24, 2015 5:34 PM
opendkim	✓	Mar 24, 2015 5:34 PM
mailbox	✓	Mar 24, 2015 5:34 PM
ldap	✓	Mar 24, 2015 5:34 PM
mta	✓	Mar 24, 2015 5:34 PM
antivirus	✓	Mar 24, 2015 5:34 PM

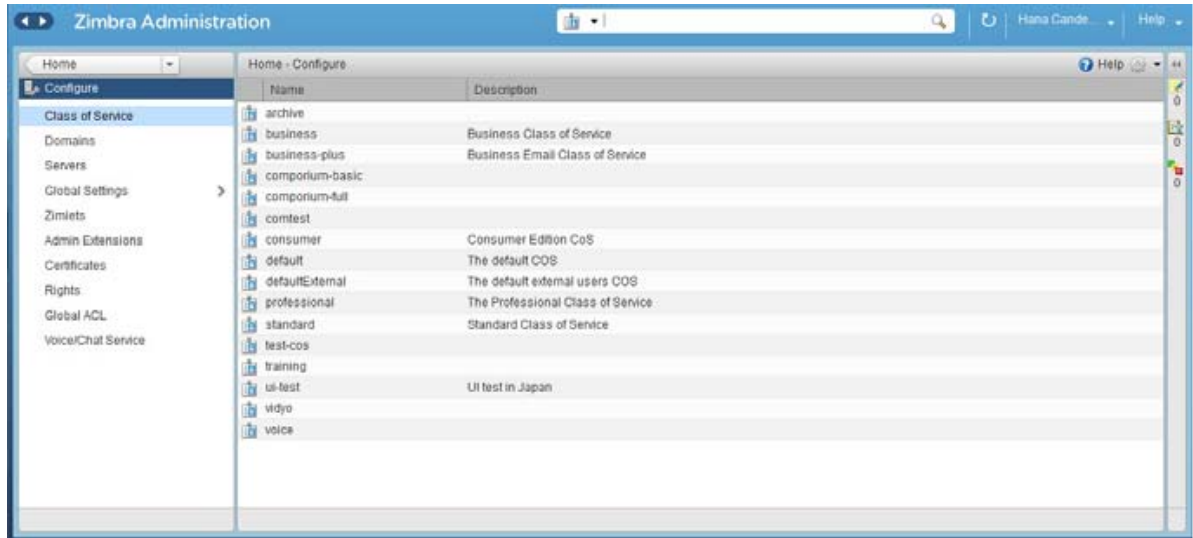
## Manage

The Manage screen provides the Manage navigation pane and the Manage pages, which display the tables categorically provided as Accounts, Aliases, Distribution Lists, and Resources that are currently managed by Collaborator.



## Configure

The Configure screen provides the Configure navigation pane and the Configure pages, which enable configurations for individual and/or global components.



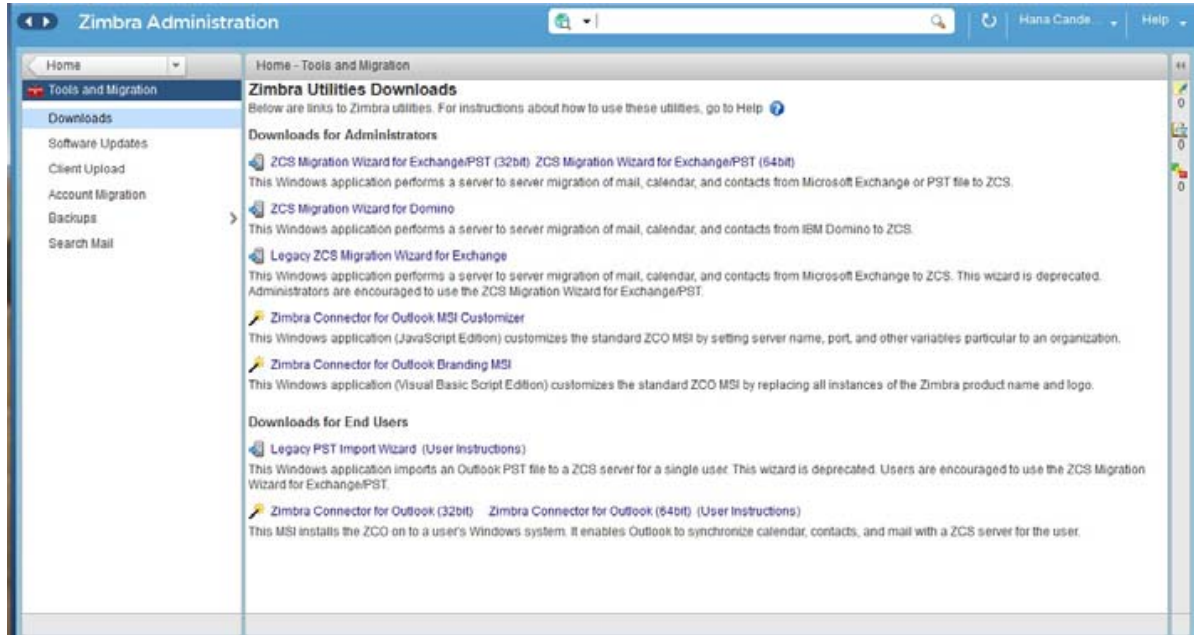
## Global Settings

Global Settings define the default global values for servers, accounts, COS, and domains.

- ▶ General Information
- ▶ Attachments
- ▶ MTA
- ▶ IMAP
- ▶ POP
- ▶ AS/AV
- ▶ Themes
- ▶ Advanced
- ▶ Retention Policy
- ▶ Proxy
- ▶ S/MIME
- ▶ ACL
- ▶ Backup/Restore
- ▶ HSM
- ▶ License

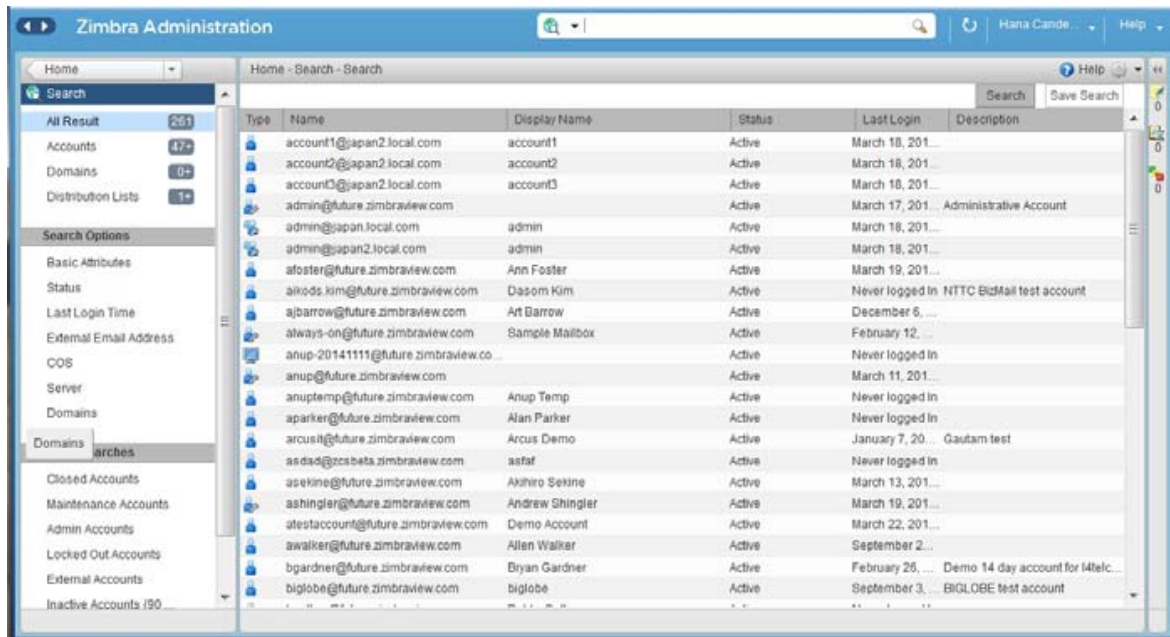
## Tools and Migration

The Tools and Migration screen provides the Tools and Migration navigation pane, for access to system software management and system backup/restore. Administrators can access and download specific wizards and tools from this page.



## Search

You can use the search field on the administration console header to search for items by accounts, distribution lists, aliases, domains, or class of service or you can through all object types.





## CLI

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.

- ▶ Provisioning accounts\*
- ▶ Back up and restore
- ▶ Starting and stopping a service
- ▶ Move mailboxes
- ▶ Cross mailbox searches
- ▶ Installing self-signed certificates
- ▶ Local configuration

\*In general, provisioning and managing accounts should be performed from the administration console, but bulk provisioning can be done from the CLI

## Account provisioning

When an account is provisioned, you create the mailbox, assign the primary account email address, and assign a class of service (COS) to enable Zimbra Collaboration applications and features.

You can configure one account at a time or migrate multiple existing accounts from a server.

- ▶ Creating a Single User Accounts
- ▶ Migrating Accounts and Importing Account Email
- ▶ Auto Provisioning New Accounts from External LDAP
- ▶ Managing Resources

## Class of Service (COS)

The Class of Service (COS) assigned to an account determines the default attributes for user accounts, and the features to be enabled or denied. Each account is assigned a COS. The COS controls mailbox quotas, message lifetime, password restrictions, attachment blocking, and server pool usage.

A COS is a global object and is not restricted to a particular domain or set of domains. You can create and edit the classes of services from the Administration

- ▶ Managing Account Usages with a COS
- ▶ Selecting Features and Preferences
- ▶ Using Server Pools
- ▶ Setting Account Quota
- ▶ Managing Passwords
- ▶ Managing Login Policies
- ▶ Managing Session Timeout Policies
- ▶ Managing Default External COS

## Zimbra Mobile

Zimbra Mobile provides over-the-air synchronization of mail, contacts, calendar and task data and device security policy enforcement between the mobile device and an account on the mailbox server.

The ActiveSync protocol is used to configure and sync the Zimbra mailbox server with the native client that is used on a user's device.

Zimbra Mobile is compatible with iPhone, iPod Touch, Windows Mobile 5 (WM5), and 6 (WM6) devices, and many other phones that support the ActiveSync™ protocol.

## Zimbra Web Client

Zimbra offers various web client types that users can log into for use of Zimbra features. The web clients provide mail, calendar, address book, and task Functions.

<b>Advanced Web Client</b>	Includes Ajax capability and offers a full set of web collaboration features. This web client works best with newer browsers and fast Internet connections.
<b>Standard Web Client</b>	A good option when Internet connections are slow or users prefer HTML-based messaging for navigating within their mailbox
<b>Mobile Client</b>	(Native Mail Client): Used to configure and sync the Zimbra mailbox server with the native mail client on a mobile device.
<b>Touch Client</b>	(Mobile Web App) provides an experience for touch-capable mobile devices. Its features are a subset of the features found in the Zimbra Web Client, including Mail, Contacts and Calendar.
<b>Mobile HTML Client</b>	Provides mobile access to Zimbra when using the Standard Web Client version.

## Desktop Client

In addition to using a web browser or mobile device to connect to Zimbra Collaboration, connection is available using a web service, such as Exchange Web Services (EWS), or a desktop client such as Zimbra Connector to Microsoft Outlook, which uses MAPI

<b>Exchange Web Services (EWS)</b>	Provides client access to enable Zimbra Collaboration to communicate with the exchange Server when using Microsoft Outlook on a Mac device.
<b>Messaging Application Programming Interface (MAPI)</b>	Synchronizes to Microsoft Outlook 2016/2013/2010/2007/2003 with full delegate, offline access and support for S/MIME. Use the Zimbra Connector for outlook to connect to Zimbra Collaboration when using Microsoft Outlook on a windows device.

## Backup

Zimbra Collaboration (Zimbra Collaboration) includes a configurable backup manager that resides on every Zimbra Collaboration server and performs both backup and restore functions. You do not have to stop the Zimbra Collaboration server in order to run the backup process.

- ▶ Backing Up the Mailbox Server
- ▶ Backup Methods
- ▶ Directory Structure for Backup Files
- ▶ Backup and Restore Using the Administration Console
- ▶ Backup and Restore Using the Command Line Interface
- ▶ Backing up using the Standard Method
- ▶ Aborting a Full Backup in Progress
- ▶ Back up using the Auto-Grouped Method
- ▶ Backup Options
- ▶ Restoring Data
- ▶ General Steps for Disaster Recovery
- ▶ Using snapshots to Backup and Restore

## Monitoring

The Zimbra Collaboration (Zimbra Collaboration) includes the following to help you monitor the Zimbra servers, usage, and mail flow

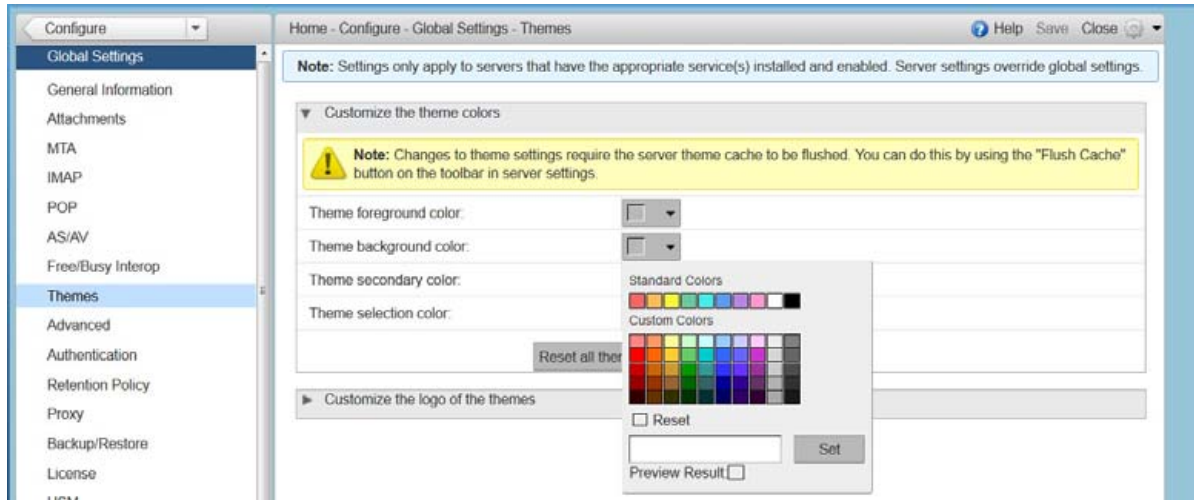
- ▶ Zimbra Logger package to capture and display server statistics and server status, and to create nightly reports
- ▶ Mailbox quota monitoring
- ▶ MTA mail queue monitoring
- ▶ Log files

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



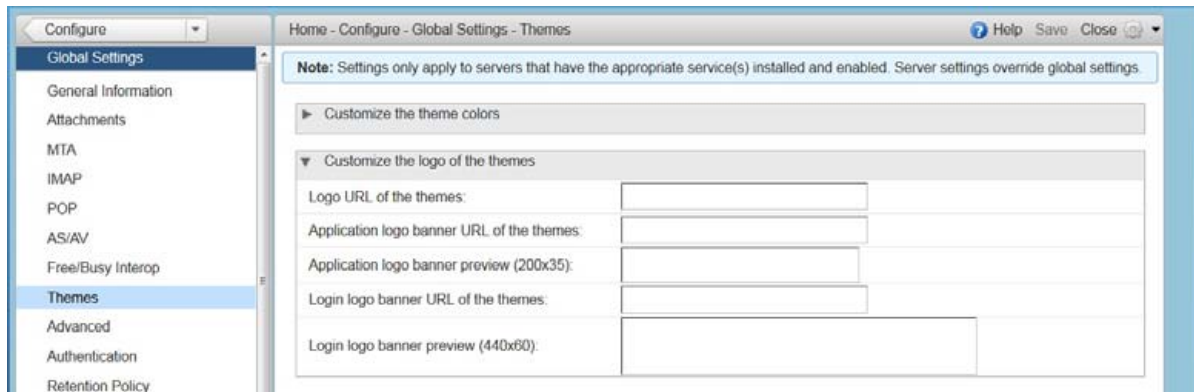
## Theme & Logo

You can either select colors from popup view of predefined colors, or enter the six-digit hexadecimal color value for an exact color match to set theme colors



Login and splash screens for Zimbra Web Client The dimension of the graphic must be exactly 300 x 30

Upper-left of the Zimbra Web Client application, dimension of the graphic must be exactly 170 x 35.




## Zimlets

Zimlets are a mechanism to integrate ZCS with different third-party applications to enhance the user experience from the Zimbra Web Client.

With Zimlets, 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 modifying the Class of Service (COS)


### Featured Zimlet Showcase

Plug-ins That Extend Zimbra Collaboration Suite



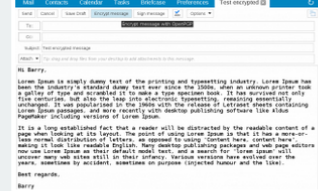
Zimbra ownCloud Zimlet  
Created by: [zetalliance](#)

Download



VNCsafe Zimlet - Zimbra & OwnCloud Integration  
Created by: [VNC](#)

Download



Zimbra OpenPGP Zimlet  
Created by: [zetalliance](#)

Download

## Security

The coordinated use of multiple security measures, targeted to increase the security of the whole system, is one of the best approaches to securing your information infrastructure

### Identity and Access Management

- ▶ Identify Lifecycle Management
- ▶ First Factor Authentication
- ▶ Two Factor Authentication
- ▶ Authorized Access

### Information Security and Privacy

- ▶ Management of security, integrity, and privacy

#### Encrypted Methods

- ▶ In-transit
- ▶ at-rest
- ▶ Anti-virus and Antispam

### System Logs

- ▶ Incident response
- ▶ Archiving and discovery

## Licensing

Zimbra Collaboration licensing gives administrators better visibility and control into the licensed features they plan to deploy. You can monitor usages and manage the following license types.

Account limit	Accounts you can create and the number of accounts created are shown
Mobile accounts limit	Accounts you can create and the number of accounts created are shown
Touch client accounts limit	Accounts that can have the touch client mobile feature enabled
MAPI accounts limit	Accounts that can use Zimbra Connector for Microsoft Outlook (ZCO)
Exchange web services (EWS) accounts limit	Accounts that can use EWS for connecting to an cange server. EWS is a separately licensed add-on

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