

GWAVA Inc.

# GWAVA® Retain™

## Exalead<sub>®</sub> Install Guide

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#### **Overview**

Exalead is a robust indexing system which can scale to the largest email archiving operations. The system requirements will vary depending on the size of the system being archived. The minimums listed are for a bare installation, and minimum use for the data directory and hard drive space. Medium size systems will vary somewhere between the minimum and recommended settings, though the recommended settings will guarantee quick response and performance from the indexing service. In general, the index service will perform better with ample RAM, and multiple processor cores tied to the number of hard disks in the system due to disk I/O. SATA disks are not recommended due to disk I/O use and requirements.

Exalead should be installed and run on a dedicated server for best performance. Virtualization is not recommended. Exalead should not be run on the same machine as the Retain Server.

All systems should have clocks synchronized via a NTP server, as time stamps are used and must be consistent.

#### **Minimum System Hardware Requirements**

- 2 HD disks with appropriate space for indexing needs.
   (Exalead indexing will consume about 40% of total archived document space.)
- 16 GB of available ram
- Dual core processor

#### **Recommended System Requirements**

- > 4-8 core system
- > 32-64 GB RAM
- 8 SCSI or SAS Hard Disks, (or 1 per processor core), to maximize disk I/O performance while indexing. RAID 5 is fine.

#### **Linux System Requirements**

- ➢ 64-bit Suse Linux Enterprise Server 10, or 11.
- Sun Java 1.5 or 1.6
- > EXT-3 File system (Reiser file system will NOT work.)
- > The following packages **must** be installed:
  - compat-libstdc++
  - Gtk 32-bit library
  - Hard limit of file descriptors must be increased. Add the following line to /etc/security/limits.conf

*	soft	nofile	65537

#### Windows System Requirements

- MS Windows 2003 Server x64
- MS Windows 2008 Server x64
- Sun Java 1.5 or 1.6
- > All OS versions must have all available service packs installed.

All systems require 100 open ports for Exalead to use, starting at the 'base port' specified in the installation. See below.

The installation also requires an internet connection, and the Exalead server must be accessible by the Retain Server.

#### **Exalead installation**

The installation of Exalead requires a live internet connection. The installation proceeds along essentially identical steps, regardless of the host OS:

- Installer checks to see if Java is installed, and if it is not either automatically downloads Java (Linux), or prompts the user with the URL (Windows).
- Installer downloads the latest version of Exalead.
- Installer asks a series of questions and installs Exalead.Exalead Installation is essentially identical between both MS Windows and Linux platforms. The Install first checks for Java 1.5, and then prompts automatic (Linux) or manual (Windows) download and installation of Java 1.5 if it is not found. If Java is found, the install then proceeds to download and install and create a basic configuration for Exalead. The installation requires a live internet connection.
- Installer starts up Exalead.

During the install, several variables must be provided for your system. Defaults are shown between brackets and can be applied by pressing <Enter> when prompted. However, the DNS or IP connection address must be manually specified for the system to function. The different variables required, and defaults, are:

$\triangleright$	Executable installation folder	C:\exabin -or- /opt/beginfinite/exabin
$\triangleright$	Data directory installation folder	C:\exadata -or- /opt/beginfinite/retain/exadata

The exabin and exadata directory settings MUST be different directories; they cannot be set to the same directory, or the install will fail.

	Hostname or IP Address	MUST be the Hostname or IP Address of the server— (Hostname or IP Address cannot be 127.0.0.1)
$\triangleright$	Base port (default is port 10000)	Exalead uses 100 ports, starting with this port
≻	Exalead server instance name	reatainex
$\triangleright$	Base Port	10000
≻	Number of used CPUs	2 (Defaults to the maximum detected on the server)
$\triangleright$	Build Type	buildsearch
$\triangleright$	Number of 'slices'	2 (minimum of 2 or number of available HD disks)
	Exalead Console Password	exalead

The install finally displays your settings and asks for confirmation then proceeds to finish the install and start Exalead. In Linux, Exalead is automatically set to run in runlevels 3 and 5. In MS Windows, Exalead runs as a service.

#### **Linux Install**

Download the Retain install package, (a link will be provided with purchase of the Exalead license), and extract it to its own folder. Copy the Exalead license files into the 'COMMON' subdirectory. Enter the folder and locate the ExaleadInstall.sh file.

Add the execute permission to ExaleadInstall.sh

```
chmod +x ExaleadInstall.sh
```

Run the Exalead installation program on the target install server.

./ExaleadInstall.sh

The install first checks for Java. If Java is not found to be present in the system, the installer will download and begin the Java installation. If Java is already installed, the Exalead installation will continue to install.



If Sun Java has not been installed, the install will automatically download and install the JDK.

The Exalead install must be restarted after Java installation. Re-run the Exalead installation if Java was installed.

./ExaleadInstall.sh

exalead:~/Desktop/Retain200Alpha6a/exalead # ./ExaleadInstall.sh
64 bit os detected.
2010-03-04 02:40:36 http://download.gwava.com/download.php?product=retain&v
ersion=exalin64
Resolving download.gwava.com 209.90.108.26
Connecting to download.gwava.com/209.90.108.26/:80 connected.
HTTP request sent, awaiting response 302 Found
Location: http://download.gwava.com/exalead/cloudview-oem-linux64-tag-5.0.3.1261
4.tar.gz [following]
2010-03-04 02:40:36 http://download.gwava.com/exalead/cloudview-oem-linux64
-tag-5.0.3.12614.tar.gz
Connecting to download.gwava.com/209.90.108.26/:80 connected.
HTTP request sent, awaiting response 200 OK
Length: 358535174 (342M) [application/x-gzip]
Saving to: `cloudview-oem-linux64-tag-5.0.3.12614.tar.gz'
2% [> ] 10,058,125 730K/s eta 7m 58s

Exalead source and installation files will be downloaded to the target server. After the download finishes, the install will begin.

#### Executable file directory [/opt/beginfinite/retain/exabin]:

Default is shown. This is where Exalead will store its executable binary files.

```
Index data directory [/opt/beginfinite/retain/exadata]:
DNS or IP Address of index server []: 192.168.1.106<mark>.</mark>
```

Exalead will also ask where it should store the data files for the index. This should be a location that can be backed-up.

The exabin and exadata directory settings MUST be different directories; they cannot be set to the same directory, or the install will fail.

Exalead will also require you to specify the IP address or DNS name of the target server. There is no default. This MUST be an address that the Retain Server can contact the Exalead server through, or the system will not work. Verify the selected address will work then specify the IP address or DNS Hostname and continue. This setting cannot be 127.0.0.1.

```
Instance name [retainex]:
basePort [10000]:
```

The instance name is what Exalead reports as its name to the Retain Server.

Exalead requires 100 ports to use. The base port is the port Exalead starts with, and then advances +100 ports as required. ie. By default, Exalead will use ports 10000-10100. Make sure these ports are open,

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or, change them according to your system. If changed from default, keep track of the base port, as it must be entered into the Retain Server configuration.

```
basePort [10000]:
CPUS to use for analyzers [2]: 2
```

You will also be asked how many CPUs to utilize from the host system. This should be changed to the total number of processor cores in the host system, and a MINIMUM of 2 to support the minimum number of 'slices' for the system.

```
CPUS to use for analyzers [2]: 2
The buildtype should be left as buildsearch unless you consult with support,as t
his is the normal operational mode. purebuild greatly enhances indexing speed, b
ut disables ALL searching. It can bea useful option when first priming your inde
x.
buildtype [buildsearch]:
```

Enter the initial buildtype. The default, and what should be used in all but immediate setup, is the 'buildsearch' setting. It is highly recommended to leave this setting as default: buildsearch. If a large system is being migrated to Exalead, the search function of Exalead may be disabled to allow the index to be built faster; the 'purebuild' option. *Note: if the 'purebuild' option is selected, the setting must be changed to 'buildsearch' for searching to work*.

Short version: Leave this at 2 unless directed by support. Long version: must be between 2 and 8, while constrained by Min(CPU,Disk). Slices [2]:

The 'slices' setting basically represents the number of working threads Exalead will run, and has a minimum number of 2. The 'Slices' setting should be set to the number of hard drive disks installed in the system. The number of slices cannot be lower than '2', and cannot exceed the total number of available CPUs. I.e., if the system has two quad core processors and five SCSI disks, the slices setting should be set to '5'. Exalead will then split data job queues into 5 processing 'slices' which will do equal amounts of importing work.



Set the access password for the Exalead. This password will be used for the admin password to access the Exalead Configuration Console, (the admin console).

Install Executables to:	/opt/beginfinite/retain/exabin
Install data directory to:	/opt/beginfinite/retain/exadata
Use this host name:	192.168.1.106
Use this base port:	10000
Use this instance:	retainex
Use these many cpus:	2
Use this buildtype:	buildsearch
Use these many slices:	2
Use this password:	exalead
Confirm your selections (yes or no) [y	es]:

Verify your settings, or change them, then continue.

Installation successfull You must first launch the product using /opt/beginfinite/retain/exadata/bin/cvi nit.sh To complete the product setup, the configuration can be generated using : /opt/k eginfinite/retain/exadata/bin/postinstall retain-exalead 0:off 1:off 2:off 3:on 4:off 5:on 6:off Exalead is installed and will run automatically on reboot. Starting right now... . Wait 5 minutes, and then try accessing http://ipaddress:127.0.0.1:10001/api-ui Starting Exalead CloudView daemonexa: license expires in 10 days done exalead:~/Desktop/Retain200Alpha6a/exalead #

Exalead will then complete the install and set the system to run on runlevels 3 and 5 by default.

If you wish to check for a successful installation, wait several minutes then open a browser and access: http://<your server IP address or DNS>:<chosen base port +1>/admin . The admin console should be secured, whether by restricting access to the port to only the Admin computer, or through other network security measures appropriate for the system.

Login: admin Password: (whatever was specified in setup, default: exalead)

Login Password Login	

After logging into Exalead, you should view a management configuration page for the Exalead server. In almost every instance, configuration and installation of Exalead for Retain Server has been completed. No further configuration is needed. GWAVA inc. and Retain does not require any further configuration.

						🛛 🙎 admin Abo	out Logout
	ad'			X	1	<b>4</b> 84	?
			Save Change:	s Cancel Changes	Apply Changes	Users	Help
Home	Home						Fullscreen
Collect Connectors	This home page is the singl	e entry point to co	nfigure, operate,	and monitor Exalead	CloudView.		
Process	Operations Overview	eviously Applied (	Configurations				
Analysis Build Groups	Overview of the produc	t workflow, proces	s operations and	status.			
Store	Connectors						
Index Schemas	Name 🔶			Statu	s 🔶 Type		Actions
Access	default				PushAPI	Scrate	h Source
Search Logics	Build Groups						
Security Sources	Ruild Group ball at Co	rateb ( Donuob fro	Casha For	e Indexing			
Search UI Search API	Overall status Push API tasks count sind Tasks in queue	slice e last restart 8423 Empl	"0" idle,slice "1" id ); <i>New</i> :8423; <i>Repla</i> :y	le,slice "2" idle,slice "3" id ace.0; Delete.0; Update.0	dle,slice "4" idle,slice "5" idle		
Deployment Roles Hosts Status	Humber of documents <ul> <li>Task Queue Details</li> <li>Slice Details</li> </ul>	8423	}				
Logs	Processes						
Global Logs Process Logs	Host 192.168.100.204 💌	]					
Log Level	Processes	PID	Status		Last Start Date		Actions
Wizards	analyzer-bg0-0	7269	started		2010/06/01 12:38:13	Þ 💽	
Add a Field	analyzer-bg0-1	7211	started		2010/06/01 12:38:13	Þ 💽	
Languages	analyzer-bg0-2	7242	started		2010/06/01 12:38:13	Þ 💽	
	analyzer-bg0-3	7182	started		2010/06/01 12:38:13	Þ 💽	
	analyzer-bg0-4	7230	started		2010/06/01 12:38:13	Þ 💽	
	analyzer-bg0-5	7251	started		2010/06/01 12:38:13	▶ 💽	
	analyzer-bg0-6	7244	started		2010/06/01 12:38:13	Þ 💽	
	analyzer-bg0-7	7162	started		2010/06/01 12:38:13	▶ 💽	
	convert-c0	7229	started		2010/06/01 12:38:13	Þ 💽	
010/06/03-12:12:21 - Job 20615 010/06/03-12:13:51 Welcome to	8430208 (file=48 offset0) is importe o the Administration Console,	d for buildGroup b	g0				

#### Windows Install

Download the Retain install package, (a link will be provided with purchase of the Exalead license), and extract it to its own folder. Copy the Exalead license files into the 'COMMON' subdirectory. Enter the 'exalead' folder.

In the 'exalead' directory, locate and run the 'ExaleadInstall.bat' file.



The install first checks for Java. If Java is not found to be present in the system, the installer will prompt you to manually download the Java installation files and install Java. If Java is already installed, the Exalead installation will continue to install.

To download Java, browse to <u>http://download.gwava.com/download.php?product=jvm&version=win64</u> or to the link specified by the installer.



Save, and run the install. The server MUST have internet access for this installation to work. After the installation has completed, specify the JAVA\_HOME variable.

The JAVA\_HOME variable is found under **Start | Control panel | System**. Select the **Advanced** tab and then select the **'Environment Variables**' button near the bottom. JAVA\_HOME should be listed in your System variables table and point to your Java installation directory. If it is incorrect, correct the information. If it is missing, select 'New' and add the path. Syntax as follows:

Variable Name JAVA\_HOME Variable Value <Path to Java installation directory> ie. C:\Program Files\Java\jdk1.5.0\_22

After Java has been installed, re-run the ExaleadInstall.bat file to initiate the installation.



Exalead requires VS 2005 C++ SP1 Redistributable to be installed. The Exalead install will download and automatically run the installation file. When the installation dialog opens, select next and allow the install to complete.



Exalead will then continue to install through the console. Defaults for the required variables are shown between the brackets of the install prompts. Pressing <enter> on a blank option will accept defaults, or custom settings may be specified.



Default is shown. This is where Exalead will store its executable binary files.

📾 Wget http://download.gwava.com/exalead/cloudview-oem-windows32-tag-5.0.3.12614.zip 📃 🗖	¢
There are a few things that need to be provided during installation:	•
The directory to install the executable files. This directory will take around 400-500 MB of disk space. The directory to install the index data. This directory can consume many gigabytes of disk space, dependi ng on the size of the system.	
The IP address or DNS name of the indexing server. DO NOT use 127.0.0.1 or localhost!!!!! The IP address or DNS name must be both RESOLVABLE AND REACHABLE	
from both the Retain Server and any Exalead indexing servers you might install A TCP basePort. 100 TCP ports must be available between basePort and bas ePort+100. Leave as 10000 unless there's a specific reason to change this.	
An instance name. Used for clustering. Leave as 'retainex' unless otherwise instructed. The number of cpus to use. Normally you want this to be all of them.	
For each of these items, a default suggestion is provided in square brackets. Yo u may accept it by hitting the ENTER key.	
Executable file directory [C:\exabin]: Index data directory [C:\exadata]:	-

Exalead will also ask where it should store the data files for the index. This should be a location that can be backed-up.

The exabin and exadata directory settings MUST be different directories; they cannot be set to the same directory, or the install will fail.



Exalead will also require you to specify the IP address or DNS name of the target server. There is no default. This MUST be an address that the Retain Server can contact the Exalead server through, or the system will not work. Verify the selected address will work then specify the IP address or DNS Hostname and continue. This setting cannot be 127.0.0.1.

🕿 Wget http://download.gwava.com/exalead/cloudview-oem-windows32-tag-5.0.3.12614.zip	K
An IP address or DNS name of the indexing server. DO NOT use 127.0.0.1 or localhost!!!!! The IP address or DNS name must be both RESOLVABLE AND REACHABLE	-
from both the Retain Server and any Exalead indexing servers you might install A TCP basePort. 100 TCP ports must be available between basePort and bas ePort+100. Leave as 10000 unless there's a specific reason to change this. An instance name. Used for clustering. Leave as 'retaines' unless otherwise instructed. The number of cpus to use. Normally you want this to be all of them.	
For each of these items, a default suggestion is provided in square brackets. Yo u may accept it by hitting the ENTER key.	
Executable file directory [C:\exabin]: Index data directory [C:\exadata]: DNS or IP Address of index server []:	
DNS or IP Address of index server []:	
DNS or IP Address of index server []: 192.168.1.102 Fine, but be careful that the Retain Server can reach this address Instance name [retainex]:	-

The instance name is what Exalead reports as it's name to the Retain Server.

Wget http://download.gwava.com/exalead/cloudview\_with\_sdk-5.1.6.19145-windows-x86... \_ X
from both the Retain Server and any Exalead indexing servers you
might install
A TCP basePort. 100 TCP ports must be available between basePort and bas
ePort+100.
Leave as 10000 unless there's a specific reason to change this.
An instance name. Used for clustering.
Leave as 'retainex' unless otherwise instructed.
The number of cpus to use for the analyzers. Normally you want this to b
e all of them.
The buildType, which can affect your initial indexing run speed
An administrator password for securing the Exalead console and ensuring
data integrity.
For each of these items, a default suggestion is provided in square brackets. Yo
u may accept it by hitting the ENTER key.
Executable file directory [C:\exabin]:
Index data directory [C:\exabin]:
Index so of index server [1: 192.168.1.102
Fine, but be careful that the Retain Server can reach this address
Instance name [retainex]:
basePort [10000]:
CPUS to use for analyzers [1]: 2\_

Exalead requires 100 ports to use. The base port is the port Exalead starts with, and then advances +100 ports as required. ie. By default, Exalead will use ports 10000-10100. Make sure these ports are open, or, change them according to your system. If changed from default, keep track of the base port, as it must be entered into the Retain Server configuration.

🛤 Wget http://download.gwava.com/exalead/cloudview_with_sdk-5.1.6.19145-windows-x86 💶	×
from both the Retain Server and any Exalead indexing servers you	
might install A TCP basePort. 100 TCP ports must be available between basePort and bas Pourt 100	
Leave as 10000 unless there's a specific reason to change this. An instance name. Used for clustering. Leave as 'retainex' unless otherwise instructed.	
The number of cpus to use for the analyzers. Normally you want this to b e all of them. The buildType, which can affect your initial indexing run speed An administrator password for securing the Exalead console and ensuring data integrity.	
For each of these items, a default suggestion is provided in square brackets. Yo u may accept it by hitting the ENTER key.	
Executable file directory [C:\exabin]: Index data directory [C:\exadata]: You must choose an IP address accessible to Retain and all Exalead nodes!	
DNS or 1P Address of index server LJ: 192.168.1.102 Fine, but be careful that the Retain Server can reach this address Instance name [retainex]:	
basePort [1000]: CPUS to use for analyzers [1]: 2_	-

You will also be asked how many CPUs to utilize from the host system. This should be changed to the total number of processor cores in the host system, and a MINIMUM of 2 to support the minimum number of 'slices' for the system.



Enter the initial buildtype. The default, and what should be used in all but immediate setup, is the 'buildsearch' setting. It is *highly recommended* to leave this setting as default: buildsearch.

If a large system is being migrated to Exalead, the search function of Exalead may be disabled to allow the index to be built faster; the 'purebuild' option. *Note: If 'purebuild' is selected, the setting much be switched in the configuration files to 'buildsearch' for searching to work.* 



The 'slices' setting basically represents the number of working threads Exalead will run, and has a minimum number of 2. The 'Slices' setting should be set to the number of hard drive disks installed in the system. The number of slices cannot be lower than '2', and cannot exceed the total number of available CPUs. I.e., if the system has two quad core processors and five SCSI disks, the slices setting should be set to '5'. Exalead will then split data job queues into 5 processing 'slices' which will do equal amounts of importing work.



Set the access password for the Exalead. This password will be used for the admin password to access the Exalead Configuration Console, or admin console.

C:\WINDOWS\system32\cmd.exe	_ 🗆 🗙
Instance name [retainex]: basePort [10000]: CPUS to use for analyzers [2]: The buildtype should be left as b his is the normal operational mod ut disables ALL searching. It can x. buildtype [buildsearch]: Short version: Leave this at 2 un between 2 and 8, while constrain Slices [2]:	uildsearch unless you consult with support, as t e. purebuild greatly enhances indexing speed, b bea useful option when first priming your inde less directed by support. Long version: must be ed by Min(CPU,Disk).
Administrator password [exalead]:	
Install Executables to: Install data directory to: Use this host name: Use this base port: Use this instance: Use these many cpus: Use this buildtype: Use these many slices: Use this password:	C:\exabin C:\exadata 192.168.1.102 10000 retainex 2 buildsearch 2 exalead
Confirm your selections (yes or n	o) [yes]:

Verify your settings, or change them, then continue.



Exalead will then complete the install and set to run as a system service.

The Windows system should be restarted after installation.

If you wish to check for a successful installation, wait several minutes then open a browser and access: http://<your server IP address or DNS>:<chosen base port +1>/admin . The admin console should be secured, whether by restricting access to the port to only the Admin computer, or through other network security measures appropriate for the system.

#### Login: admin Password: (whatever was specified in setup, default: exalead)

Login Password Login	

After logging into Exalead, you should view a management configuration page for the Exalead server. In almost every instance, configuration and installation of Exalead for Retain Server has been completed. No further configuration is needed. GWAVA inc. and Retain does not require any further configuration.

						🙎 admin	About Logout		
				X	1	<b>2</b> 28	?		
-			Save Changes	Cancel Changes	Apply Changes	Users	Help		
>Home > Hide	Home						Fullscreen		
Collect Connectors	This home page is the singl	e entry point to co	nfigure, operate,	and monitor Exalead	CloudView.				
Process	Operations Overview Previously Applied Configurations								
Analysis Build Groups	Overview of the product workflow, process operations and status.								
Store	Connectors								
Index Schemas	Name 🔶			Status	s 🔶 Type		Actions		
Access	<u>default</u>				PushAPI		Scratch Source		
Search Logics	Build Groups								
Security Sources	Ruild Group boll at Co	atab Donuch fro	m Casha Fora	Indexina					
User Interaction Search UI Search API	Overall status Push API tasks count sind Tasks in queue	slice e last restart 8423 Empt	"0" idle,slice "1" idle 3; <i>New:</i> 8423; <i>Replac</i> 9	e,slice "2" idle,slice "3" id ce.0; Delete.0; Update.0	lle,slice "4" idle,slice "5" idle				
<b>Deployment</b> Roles Hosts Status	Humber of documents <ul> <li>Task Queue Details</li> <li>Slice Details</li> </ul>	8423	3						
Logs	Processes								
Global Logs Process Logs	Host 192.168.100.204 💌								
Log Level	Processes	PID	Status		Last Start Date		Actions		
Wizards	analyzer-bg0-0	7269	started		2010/06/01 12:38:13		0 🖬 🖬		
Add a Field	analyzer-bg0-1	7211	started		2010/06/01 12:38:13		O □ □ ○		
Languages	analyzer-bg0-2	7242	started		2010/06/01 12:38:13		C+ 🗖 🖬 👘		
	analyzer-bg0-3	7182	started		2010/06/01 12:38:13		O □ □ ○		
	analyzer-bg0-4	7230	started		2010/06/01 12:38:13		C+ 🗖 🖬 👘		
	analyzer-bg0-5	7251	started		2010/06/01 12:38:13		🕒 🗖 🚽		
	analyzer-bg0-6	7244	started		2010/06/01 12:38:13	⊳	O 🖬 🖬 🚽		
	analyzer-bg0-7	7162	started		2010/06/01 12:38:13		🕒 🖬 🚽		
	convert-c0	7229	started		2010/06/01 12:38:13		O □ □ √		
2010/06/03-12:12:21 - Job 206158- 2010/06/03-12:13:51 Welcome to	430208 (file=48 offset0) is importe the Administration Console.	d for buildGroup by	g0		0010/00101 10 00 10				