# DSpace Installation Guide

Covers Installation of DSpace 1.7 on Windows Vista and Windows 7 with latest prerequisites as on  $1^{\rm st}$  January 2011







# INSTALLING DSPACE ON WINDOWS

Running DSpace on Windows is actually rather similar to running it on any other operating system. For the most part, you should be able to follow the normal DSpace Installation Documentation. However, this page provides you with some hints that are specific to Windows.

You should also read the DSpace install docs corresponding to your DSpace version (for the latest stable version they're available online at (http://dspace.org/current-release/latest-release/). Make sure to look most closely at the section on "Windows Installation" in the System Documentation.

#### PRE-REQUISITE SOFTWARE

You'll need to install this pre-requisite software (for DSpace 1.6.x and higher including DSpace 1.7.0). Check the "Windows Installation" section of the System Documentation for the most recent pre-requisites, as they sometimes differ based on the version of DSpace you are running.

To fin	d out if your computer is rupping 22-bit or 64-bit Windows, do the following:
10 1110	a out in your compater is running 52-bit of 64-bit windows, do the following.
Winde	ows Vista or Windows 7
1.	Open System by clicking the <b>Start</b> button (), clicking <b>Control Panel</b> , clicking <b>System and Maintenance</b> , and then clicking <b>System</b> .
2.	Under <b>System</b> , you can view the system type.
Winde	ows XP
1.	Click <b>Start,</b> and then click <b>Run.</b>
2.	Type sysdm.cpl, and then click <b>OK</b> .
3.	Click the General tab. The operating system is displayed as follows:
	<ul> <li>For a 64-bit version operating system: Windows XP Professional x64 Edition</li> </ul>
	Version < Year> appears under System.
	<ul> <li>For a 32-bit version operating system: Windows XP Professional Version</li> </ul>
	<year> appears under System.</year>
	<b>Note</b> < <i>Year</i> > is a placeholder for a year.

# JAVA SDK

The JDK forms an extended subset of a software development kit (SDK). In the descriptions which accompany their recent releases for Java SE, EE, and ME, Sun acknowledge that under their terminology, the JDK forms the subset of the SDK which is responsible for the writing and running of Java programs, The remainder of the SDK is composed of extra software, such as Application Servers, Debuggers, and Documentation

DSpace now requires Oracle Java 6 or greater because of usage of new language capabilities introduced in 5 and 6 that make coding easier and cleane, the latest available version can be obtained from <a href="http://www.oracle.com/technetwork/java/javase/downloads/index.html">http://www.oracle.com/technetwork/java/javase/downloads/index.html</a> the present available version is JDK 6 Update 23 Please download appropriate version for your operating system (32 Bit or 64Bit)

# APACHE MAVEN

Apache Maven is a software project management and comprehension tool. Based on the concept of a project object model (POM), Maven can manage a project's build, reporting and documentation from a central piece of information. Maven allows a project to build using its project object model (POM) and a set of plugins that are shared by all projects using Maven, providing a uniform build System

Maven is necessary in the first stage of the build process to assemble the installation package for your DSpace instance. It gives you the flexibility to customize DSpace using the exisiting Maven projects found in the [dspace-source]/dspace/modules directory or by adding in your own Maven project to build the installation package for DSpace, and apply any custom interface "overlay" changes.. The latest available version is 3.0.1 which can be obtained from http://maven.apache.org/download.html

# APACHE ANT

Ant is a Java library and command-line tool. Ant's mission is to drive processes described in build files as targets and extension points dependent upon each other. The main known usage of Ant is the build of Java applications. Ant supplies a number of built-in tasks allowing to compile, assemble, test and run Java applications. Ant can also be used effectively to build non Java applications, for instance C or C++ applications. More generally, Ant can be used to pilot any type of process which can be described in terms of targets and tasks.

Ant is written in Java. Users of Ant can develop their own "antlibs" containing Ant tasks and types, and are offered a large number of ready-made commercial or open-source "antlibs".

Ant is extremely flexible and does not impose coding conventions or directory layouts to the Java projects which adopt it as a build tool.

Ant is required to build DSpace.

Latest available version is 1.8.1, For installation on Windows platform it is advisable to use <u>apache-ant-1.8.1-bin.zip</u> which can be obtained from http://ant.apache.org/bindownload.cgi

## APACHE TOMCAT

Apache Tomcat is an open source software implementation of the Java Servlet and JavaServer Pages technologies. The Java Servlet and JavaServer Pages specifications are developed under the Java Community Process.

Apache Tomcat is developed in an open and participatory environment and released under the Apache Software License. Apache Tomcat is intended to be a collaboration of the bestof-breed developers from around the world. Apache Tomcat powers numerous large-scale, mission-critical web applications across a diverse range of industries and organizations.

Apache tomcat is required to host DSpace application

Latest available version is 7.0.5, you can download 32-bit/64-bit Windows Service Installer from http://tomcat.apache.org/

# POSTGRESQL

PostgreSQL is a powerful, open source object-relational database system. It has more than 15 years of active development and a proven architecture that has earned it a strong reputation for reliability, data integrity, and correctness. It runs on all major operating systems, including Linux, UNIX (AIX, BSD, HP-UX, SGI IRIX, Mac OS X, Solaris, Tru64), and Windows. It is fully ACID compliant, has full support for foreign keys, joins, views, triggers, and stored procedures (in multiple languages). It includes most SQL:2008 data types, including INTEGER, NUMERIC, BOOLEAN, CHAR, VARCHAR, DATE, INTERVAL, and TIMESTAMP. It also supports storage of binary large objects, including pictures, sounds, or video. It has native programming interfaces for C/C++, Java, .Net, Perl, Python, Ruby, Tcl, ODBC, among others.

PostgreSQL is required to store database of DSpace.

Latest available version of PostgreSQL is 9.0.2-1 , Appropriate version specific to your operating system can be obtained from http://www.postgresql.org/download/windows

# DSPACE

DSpace preserves and enables easy and open access to all types of digital content including text, images, moving images, mpegs and data sets. And with an ever-growing community of developers, committed to continuously expanding and improving the software, each DSpace installation benefits from the next

You can obtain latest stable source (Version 1.7.0) from http://www.dspace.org/latest-release/

## **INSTALLATION STEPS**

Before attempting installation please check that you have downloaded and saved all the above mentioned prerequisites in one folder as shown below.

apache-ant-1.8.1-bin apache-maven-3.0.1-bin apache-tomcat-7.0.5 dspace-1.7.0-src-release jdk-6u23-windows-i586 postgresql-9.0.2-1-windows

#### STEP 1

Installing Java, to do this , double click on the file 'jdk-6u23-windows-i586' and follow the on screen instructions and accept the licence agreement.

Java(TM) SE Development Kit 6 Update 23 - Custom S	Setup	×
Custom Setup Select the program features you want installed	ł.	ORACLE
Select optional features to install from the list below. You car installation by using the Add/Remove Programs utility in the C	n change your ch Control Panel	oice of features after
Development Tools - This feature, and all su     Demos and Samples - This feature, and all su     Demos and Samples - This feature, and all subfeature     Vublic JRE - This feature, and all subfeatures     Java DB - This feature, and all subfeatures,	Feature Desc Java(TM) SE I Update 23, in 6 Update 23, 300MB on you	ription Development Kit 6 Icluding private JRE This will require ar hard drive.
Install to: C:\Program Files\Java\jdk1.6.0_23\		Change
< Back	Next >	Cancel

# STEP 2

To install Apache Ant , create a new folder named "ANT" at any convenient location , for demonstration purpose , we have created the same in "C:" drive , Unzip (Expand) contents of "apache-ant-1.8.1-bin" in to C:\ANT

To install Apache Maven create a new folder named "MAVEN" at any convenient location, in our case it is C:\MAVEN unzip "apache-maven-3.0.1-bin.zip" in to that folder.



#### STEP 3

Path setting, now you have to make your system aware of what you have installed, this can be easily done by setting appropriate path in your system environment

Add followings to your PATH variable





To change your operating system's environmental variables perform following operation depending on your operating system

#### For Windows Vista or Windows 7

Right click "My Computer" >> Click "Properties" >> Click on "Advanced System Settings" from "Tasks" >> Choose "Advance" tab >> Click on "Environment Variable" Button

#### For Windows XP

Right click "My Computer" >> Click Properties >> "Advance" tab >> Click on "Environment Variable" Button

Now click on "PATH" variable under 'System Variables' and click on "Edit" button as shown in following figure

En	vironment Variable	5		
	Edit System Varia	ble 📕	x	
	Variable name:	Path		
	Variable values			
	variable value:	pin) criprogram Hies (Quick time (QTSyste		
		OK Cancel		
		OK Cancel		
		OK Cancel	4 /	
	System variables	OK Cancel	4//	
	System variables	OK Cancel		
	System variables Variable OnlineServices	OK Cancel Value Online Services		
	System variables Variable OnlineServices OS	OK Cancel Value Online Services Windows_NT		
	System variables Variable OnlineServices OS Path	OK Cancel Value Online Services Windows_NT C:\Program Files\PC Connectivity Soluti		
	System variables Variable OnlineServices OS Path PATHEXT	OK     Cancel       Value     Online Services       Windows_NT     C:\Program Files\PC Connectivity Soluti       .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;		
_	System variables Variable OnlineServices OS Path PATHEXT	OK     Cancel       Value     Online Services       Windows_NT     C:\Program Files\PC Connectivity Soluti       .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;     New       New     Edit		
	System variables Variable OnlineServices OS Path PATHEXT	OK     Cancel       Value     Online Services       Windows_NT     C:\Program Files\PC Connectivity Soluti       .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;     New       New     Edit       2		

In Edit System variable window, append the path as described above in the end of variable value. In our case it should be

";C:\Program Files\Java\jdk1.6.0\_23\bin;C:\ANT\bin;C:\MAVEN\bin"

	Variable value:	ionTools\;;;:\Program Files\Java\jdk1.6.0_23\bin;C:\ANT\bin;C:\MAVEn\bin
		La D. D. D. C. Phil Rev. D
Click on C	OK button	

Similarly you have to add 'JAVA\_HOME' and 'ANT\_HOME' system variables by clicking on "New" button as shown in following pictures

Edit System Variab	le 📃 🚬	New System Variab	le 📃
Variable name:	JAVA_HOME	Variable name:	ANT_HOME
Variable value:	C:\Program Files\Java\jdk1.6.0_23	Variable value:	C:\ANT
	OK Cancel		OK Cancel

It is being advised to **reboot your system after** "Environmental Settings" of your operating system to have suitable environment.

STEP 4

Now it is time to verify the platform, to do this execute following commands in to the command prompt.

> java -version
> ant -version
>mvn - version

One should get following output.

C:\Users\Yatrik\java -version
java version "1.6.0 23"
Java(IM) SE Runtime Environment (build 1.6.0_23-b05)
Java HotSpot(IM) Client VM (build 19.0-b09, mixed mode, sharing)
Groupe And wave and Version
CALleane Vistaria
G. USEIS HALFIN/
Civillagua Vatuil Xmun - uguaian
G. USERS (Idtrik/WVII) -VERSIUN) Obache Mauer 2 (d. 1 (uld20046 · 2010-11-22 16·28·22+0520)
Jana newsion 11.6 / 23
Java home: C: Program Files Java idk1.6.0.23 ire
Default locale: en IN. platform encoding: Cu1252
OS name: "windows vista" version: "6.0" arch: "x86" Family: "windows"
C:\Users\Yatrik>

If you do not get out put similar to above screen then it is desirable to review step 1 to 3. Else you can proceed further to install PostgreSQL

#### STEP 5

In this step covers installation of PostgreSQL with database creation, to install PostgreSQL double click on "postgresql-9.0.2-1-windows". Follow the onscreen instruction given by installer.

You may be asked to "Launch Stack Builder at Exit"



Please do not check if you don't want to install additional tools (not required for DSpace). Click on Finish button to complete the installation

#### STEP 6

In this step we will create an empty database for DSpace. To do this , perform following operation

Start >> Programs >> PostgreSQL 9.0 >> pgAdmin III

In this window right click on your server and click on connect as shown below.



First of all we need to create user named 'dspace' to do this. After connection expand your server by clicking "+", Right click on "Login Roles" and click on "New Login Role" as shown in picture below



Now create a user named 'dspace' with your desired password (in this case password is 'dspace') as shown in following screen and click OK.

	🐣 New Login Role	J
	Properties Role privileges Role membership Variables SQL	
	Role name dspace	
1997 - C. 1997 -	OID	
	Can login 🔍	
	Password dspace	1
	Password (again)	
	Account expires	
	Connection Limit	
	A	
	Comment	
	Ψ	
	Use replication	
	Help OK Cancel	
	Cancel	
	1	للا

To create a data base right click on "Databases" and click on "New Database" as shown in figure below



You will get following screen, in that enter database name as 'dspace', select Owner as 'dspace' and choose Encoding as 'UTF8' (this is required for handling multilingual data) and click on ok button.

	🧻 New Database	<b>— X</b> —	
	Properties Variable	s Privileges SQL	
	Name	dspace	
	OID		
	Owner	dspace 🔹	
	Encoding	UTF8 🔻	
	Template		
	Tablespace	<default tablespace=""></default>	
	Schema restriction		
	Collation	<b></b>	
	Character type	<b></b>	
	Connection Limit	-1	
		A	
	Comment		
		-	
	Help	OK Cancel	
STEP 7			

In this step installation of Apache Tomcat will be attempted, to do this, double click on "apache-tomcat-7.0.5.exe" in your source, follow the on screen instructions

😹 Apache Tomcat Setup		
Choose Components Choose which features of Apa	ache Tomcat you want to install.	
Check the components you w install. Click Next to continue.	ant to install and uncheck the comp	oonents you don't want to
Select the type of install:	Custom 🔻	
Or, select the optional components you wish to install:	Tomcat     Core     Service Startup     Start Menu Items     Occumentation     Manager	Description Position your mouse over a component to see its description,
Space required: 13.0MB	••••••••••••••••••••••••••••••••••••••	
Nullsoft Install System v2.46		
	< Back	Next > Cancel

you will be prompted for administrative user of tomcat administration, enter your desired values

Tomcat Administrator Login (optional)		
User Name	yatrik	
Password	•••••	

While being propmpted for choosing destination directory,

Choose Install Lo	cation	And a state of the	COMPRESS OF	
	in which to install Appene Folleau			
Setup will install Ap Browse and select	pache Tomcat in the following folder. T another folder. Click Install to start th	To install in a different fold ne installation.	er, click	
Destination Fold	er	Brows		
C. (ronicad	J			
Space required: 13	3.0MB			
Nullcoft Jostall System	0.100			
Nulisore Install System	< B:	ack Install	Cancel	
			Curreer	

For this installation we have chosen "C:\Tomcat" as Tomcat folder,

Follow the default on screen instruction until the installation is finished

#### STEP 8

In this step we will perform actual installation of dspace.

Before doing this create an empty directory in C: drive, where actual configuration, program files and datafiles of dspace will reside. In our case we will be using "C:\DSpace"

~ 🚺 🤇	C:\Dspace
nize 🔻	📗 Views 🔻
<u>^</u>	Туре
Thi	is folder is empty.

Extract all the contents of 'dspace-1.7.0-src-release.zip' to one folder and copy entire folder to your C: drive as C:\ dspace-1.7.0-src-release.zip

C:\dspace-1.7.0-src-rele	ase	
ze 🔻 🏢 Views 👻 🚷 B	um	
ni Name	Date modified	Туре
📗 dspace	16/12/2010 13:01	File Folder
🌗 dspace-api	16/12/2010 12:40	File Folder
🌗 dspace-discovery	16/12/2010 12:43	File Folder
퉬 dspace-jspui	16/12/2010 12:45	File Folder
» 퉬 dspace-Ini	16/12/2010 12:45	File Folder
🗸 🌗 dspace-oai	16/12/2010 12:46	File Folder
🛒 퉬 dspace-stats	16/12/2010 12:41	File Folder
dspace-sword	16/12/2010 12:47	File Folder
🌗 dspace-xmlui	16/12/2010 12:43	File Folder
LICENSE	16/12/2010 12:40	File
NOTICE	16/12/2010 12:40	File
🔮 pom	16/12/2010 12:40	XML Document
README	16/12/2010 12:40	File

Once the files are unzipped, go to "C:\ dspace-1.7.0-src-release\dspace\config", find out "dspace.cfg" and open in notepad or any other editor and atleast change the following parameters. Use forward slashes '/` for path separators



Once you have edited dspace configuration file open the command prompt and go to "C:\ dspace-1.7.0-src-release \dspace" folder

```
C:\Users\Yatrik>cd c:\dspace-1.7.0-src-release\dspace
Now type "mvn package" and press enter
c:\dspace-1.7.0-src-release\dspace?mvn package
```

Please note that internet connection is required to perform this operation, Maven will download dspace source dependencies online.

When the execution is successfully over you will get following message

Now go to "C:\ dspace-1.7.0-src-release\dspace\target\dspace-1.7.0-build.dir" on command prompt

CD C:\ dspace-1.7.0-src-release\dspace\target\dspace-1.7.0-build.dir

```
c:\dspace-1.7.0-src-release\dspace>cd target\dspace-1.7.0-build.dir\
```

and execute command "ant fresh\_install". After successful execution you will get following message

[echo] ====================================
[ [echo] The DSpace code has been installed, and the database initialized.
[echo]
[echo] To complete installation, you should do the following:
[echo]
[ [echo] * Setup your Web servlet container (e.g. Tomcat) to look for your
[echo] DSpace web applications in: c:/dspace/webapps/
[echo]
[echo] OR, copy any web applications from c:/dspace/webapps/ to
[echo] the appropriate place for your servlet container.
[echo] (e.g. '\$CATALINA_HOME/webapps' for Tomcat)
[echo]
[echo] * Make an initial administrator account (an e-person) in DSpace:
Lecho J
[echo] c:/dspace/bin/dspace create-administrator
Lecho J
Lechol * Start up your servlet container (Tomcat etc.)
Lechol You should then be able to access your DSpace's 'home page':
Lechol http://localhost:8080/xmlui
Lechol You should also be able to access the administrator ul:
Lechoj [
Lechol http://localhost:8080/xmlul/aspace-aamin
recvol
[asha]
BILLD SUCCESSENT
Total time: 6 minutes 45 seconds
$r_{1}$ $r_{2}$ $r_{2$

Now it is time to create default system administrator. To create administrator execute following command

C:\dspace\bin\dspace create-administrator

```
c:\dspace\bin>dspace create-administrator
Using DSpace installation in: c:\dspace
Creating an initial administrator account
E-mail address: yatrik@inflibnet.ac.in
First name: Yatrik
Last name: Patel
WARNING: Password will appear on-screen.
Password: yatrik
Again to confirm: yatrik
Is the above data correct? (y or n): y
Administrator account created
```

STEP 9

Using your explorer browse through your C:\dspace\webapps folder

🖥 📔 C:\Dspace\webapps		
nize 🔻 🏢 Views 👻 🥅 E	xplore 🚷 Burn	
Name	Date modified	Туре
] jspui	12/02/2010 18:17	File Folder
🌗 Ini	12/02/2010 18:16	File Folder
🐌 oai	12/02/2010 18:16	File Folder
🌗 sword	12/02/2010 18:16	File Folder
🕕 xmlui	12/02/2010 18:17	File Folder

Copy "jspui" and "xmlui" folder to your tomcat installation's webapps folder

vize ▼ III Views ▼ □	🛙 Explore 🚯 Burn	
Name	Date modified	Туре
🜗 jspui	12/02/2010 18:31	File Folder
🕕 xmlui	12/02/2010 18:31	File Folder
퉬 docs	12/02/2010 17:19	File Folder
🌗 examples	12/02/2010 17:19	File Folder
퉬 host-manager	12/02/2010 17:19	File Folder
퉬 manager	12/02/2010 17:19	File Folder
🛯 📗 ROOT	12/02/2010 17:19	File Folder

# STEP 10

Start tomcat service if it is already not running by going in to

Control Panel >> Administrative Tools >> Services > Apache Tomcat 7 and clicking on "Start"

Point your browser to

http://localhost:8080/jspui Or http://localhost:8080/xmlui

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	p://localhost:8080/jspui/	Image: A transformed and the second secon
Space	e <sup>™</sup> <u>About DSpace Software</u>	
arch DSpace	DSpace at PLANNER 2010 >	This is a defau
vanced Search Home	DSpace is Live	DSpace!
owse	Welcome to our digital repository of My University research!	It can be extensively configured by installing
Communities & Collections	More exciting news to appear here.	modified JSPs, and altering the site
<u>Issue Date</u> <u>Author</u>	Search	comgaration.
<u>Title</u> Subject	Enter some text in the box below to search DSpace.	
	Go	
Receive email		
My DSpace authorized users	Communities in DSpace	
Edit Profile		
Help		
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