



# Desenvolvimento de Software para WEB

Aula 13 - Servidor Web - Back-End - Tomcat - Eclipse  
- Maven

Professor: Anderson Almada

# Servidor WEB

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- Local responsável por aceitar requisições HTTP de clientes, geralmente os navegadores, e servi-los com respostas em HTTP, incluindo opcionalmente dados (exemplo: páginas web)
- Exemplos
  - Python
  - **Apache HTTP**
  - Nginx

# Servidor WEB

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- Download e instalação Apache HTTP
  - [https://www.apachefriends.org/pt\\_br/index.html](https://www.apachefriends.org/pt_br/index.html)

# Servidor WEB

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- 1 - Coloque os arquivos da aplicação na raiz do htdocs
- 2 - Configure o .htaccess na raiz do htdocs

```
<IfModule mod_rewrite.c>  
  RewriteEngine On  
  RewriteBase /  
  RewriteRule ^index\.html$ - [L]  
  RewriteCond %{REQUEST_FILENAME} !-f  
  RewriteCond %{REQUEST_FILENAME} !-d  
  RewriteRule . /index.html [L]  
</IfModule>
```

# Servidor WEB

---

- (Opcional)
  - 3 - Coloque a pasta do projeto na raiz do htdocs
  - 4 - Configure o .htaccess na raiz do htdocs

```
<IfModule mod_rewrite.c>  
  RewriteEngine On  
  RewriteBase /  
  RewriteRule ^index\.html$ - [L]  
  RewriteCond %{REQUEST_FILENAME} !-f  
  RewriteCond %{REQUEST_FILENAME} !-d  
  RewriteRule . /vue-servlet/index.html [L]  
</IfModule>
```

# Servidor WEB

- (Opcional)

```
var router = new VueRouter({  
  mode: 'history',  
  routes: [  
    {  
      path: "/vue-servlet/primeiro",  
      name: "primeiro", component: primeiro  
    },  
    {  
      path: "/vue-servlet/segundo",  
      name: "segundo",  
      component: segundo,  
      props: true,  
    },  
    { path: "*", component: primeiro },  
  ],  
});
```

# Back-End

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- O back-end é a parte do software que roda no servidor, por isso também é conhecida como server-side.
- É o back-end que fornece e garante todas as regras de negócio, acesso a banco de dados, segurança e escalabilidade.
- Embora o front-end também possa ter algumas regras e validações, é o back-end que deve garantir a integridade dos dados.

# Back-End

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- Linguagens de programação back-end
  - Java,
  - C#,
  - PHP,
  - Python,
  - Ruby,
  - JavaScript



# Conceitos

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- **Servidor:** Um software ou computador com sistema de computação centralizada é chamado de servidor.
- **Database:** Funciona como uma biblioteca cheia de informações (MySQL, MongoDB, Postgresql)
- **API:** Interface que permite que dois sistemas se comuniquem.

# Conceitos

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- **Escalabilidade:** Como a tecnologia está em constante mudança precisamos de uma estrutura de aplicação flexível para acomodar novos códigos e mais tráfego.
- **Segurança:** Essa parte é um dos principais problemas. O desenvolvedor back-end precisa se atentar a práticas de seguranças para impedir ataques. Os formulários de login e outras autenticações são processadas por meio de um HTTPS reforçado? Os dados estão sendo criptografados?

# Tomcat

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- Site oficial
  - <http://tomcat.apache.org/>
- Instalação no ubuntu
  - <https://linuxize.com/post/how-to-install-tomcat-9-on-ubuntu-18-04/>



# IDE Eclipse integrado com Tomcat

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- <https://www.eclipse.org/downloads/packages/release/2019-03/r/eclipse-ide-enterprise-java-developers>



[Members](#)[Working Groups](#)[Projects](#)[More ▾](#)[Download](#)[Home](#) / [Downloads](#) / [Packages](#) / [Release](#) / [Eclipse IDE 2019-03](#) / [R](#) / [Eclipse IDE for Enterprise Java Developers](#)[Eclipse Installer](#)[Eclipse Packages](#)[Eclipse Developer Builds ▾](#)

## Eclipse IDE for Enterprise Java Developers

### Package Description

Tools for Java developers creating Enterprise Java and Web applications, including a Java IDE, tools for Enterprise Java, JPA, JSF, Mylyn, Maven, Git and more.

Click [here](#) to file a bug against Eclipse Web Tools Platform.

Click [here](#) to file a bug against Eclipse Platform.

Click [here](#) to file a bug against Maven integration for web projects.

This package includes:

- ▶ Detailed features list

Maintained by: WTP and the Eclipse Packaging Project

### Download Links

[Windows 64-bit](#)[Mac OS X \(Cocoa\) 64-bit](#)[Linux 64-bit](#)

Downloaded 176,189 Times

- ▶ Checksums...

### Bugzilla

- ▶ Open Bugs: 74

- ▶ Resolved Bugs: 164

[File a Bug on this Package](#)

New and Noteworthy



An Open-Source  
Model-Based Engineering  
Platform



### Get Eclipse IDE 2019-03

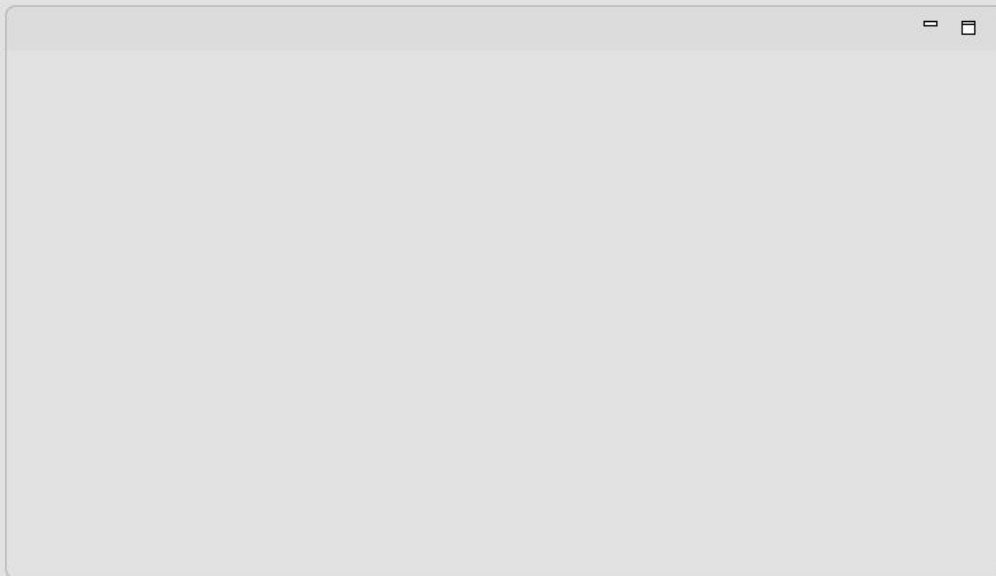
Install your favorite desktop IDE packages.

[Download 64 bit](#)[Download Packages](#) | [Need Help?](#)



**Project Explorer**

- caos-api-stand-maven
- caos-controller
- Crypto
- DateServer
- Erase
- MpOS Plataform
- Random
- Threads



**Outline**

An outline is not available.

**Markers** Properties Servers Data Source Explorer Snippets

2 errors, 29 warnings, 26 others

Description	Resource	Path	Location	Type
▶ JPA Problem (1 item)				
▶ JRE Compiler Compliance Problem (2 items)				
▶ Java Build Path Problems (3 items)				
▶ Java Problems (24 items)				



New Window

Editor

Appearance

Show View

Perspective

Navigation

Web Browser

Preferences

Bookmarks

Console

Data Source Explorer

Markers

Navigator

Outline

Project Explorer

Properties

Search

Servers

Snippets

Task List

Other...

Project Explorer

- caos-api-stand-maven
- caos-controller
- Crypto
- DateServer
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- MpOS Platform
- Random
- Threads

Quick Access



Outline

Task List

An outline is not available.

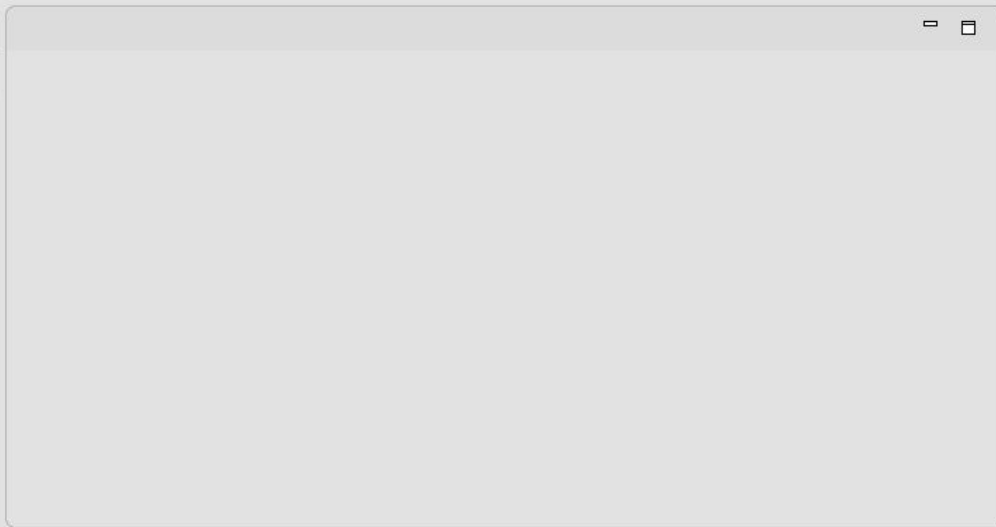
Markers Properties Servers Data Source Explorer Snippets

[No servers are available. Click this link to create a new server..](#)



Project Explorer

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Quick Access

Outline Task List

An outline is not available.

No servers are available. [Click this link to create a new server...](#)



New Server

Define a New Server

Choose the type of server to create

Select the server type:

tomcat

Tomcat v7.0 Server

Tomcat v8.0 Server

Tomcat v8.5 Server

Publishes and runs J2EE and Java EE Web projects and server configurations to a local Tomcat server.

Server's host name:

localhost

Server name:

Tomcat v8.0 Server at localhost

?

< Back

Next >

Cancel

Finish

New Server

### Tomcat Server

Specify the installation directory

Name:  
Apache Tomcat v8.0

Tomcat installation directory:  
/home/anderson/tomcat Browse...

apache-tomcat-8.0.36 **Download and Install...**

JRE:  
Workbench default JRE Installed JREs...

? < Back Next > Cancel Finish

New Server

### Tomcat Server

Specify the installation directory

Name:  
Apache Tomcat v8.0

Tomcat installation directory:  
/home/anderson/tomcat Browse...

apache-tomcat-8.0.36 Download and Install...

JRE:  
Workbench default JRE Installed JREs...

? < Back Next > Cancel Finish



Quick Access



Project Explorer

- caos-api-stand-maven
- caos-controller
- Crypto
- DateServer
- Erase
- MpOS Plataforma
- Random
- Servers
  - Tomcat v8.0 Server at localhost-config
    - catalina.policy
    - catalina.properties
    - context.xml
    - server.xml
    - tomcat-users.xml
    - web.xml
- Threads

Tomcat v8.0 Server at localhost

## Overview

## General Information

Specify the host name and other common settings.

Server name: Tomcat v8.0 Server at localhost

Host name: localhost

Runtime Environment: Apache Tomcat v8.0

Configuration path: /Servers/Tomcat v8.0 Server at lo

[Open launch configuration](#)

## Server Locations

Specify the server path (i.e. catalina.base) and deploy path. Server must be published with no modules present to make changes.

Overview Modules

## Publishing

## Timeouts

## Ports

Modify the server ports.

Port Name	P
Tomcat admin port	80
HTTP/1.1	80
AJP/1.3	80

## MIME Mappings

Outline

Task List

An outline is not available.

Markers Properties Servers Data Source Explorer Snippets Console

Tomcat v8.0 Server at localhost [Stopped, Synchronized]

# tomcat-users.xml

---

- `<tomcat-users version="1.0" xmlns="http://tomcat.apache.org/xml" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://tomcat.apache.org/xml tomcat-users.xsd">`
- `<role rolename="admin"/>`
- `<role rolename="admin-gui"/>`
- `<role rolename="manager-gui"/>`
- `<user username="tomcat" password="tomcat" roles="admin,admin-gui,manager-gui"/>`
- `</tomcat-users>`



Quick Access

Project Explorer

- caos-api-stand-maven
- caos-controller
- Crypto
- DateServer
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- MpOS Platform
- Random
- Servers
  - Tomcat v8.0 Server at localhost-config
    - catalina.policy
    - catalina.properties
    - context.xml
    - server.xml
    - tomcat-users.xml**
    - web.xml
- Threads

1 item selected

tomcat-users.xml Tomcat v8.0 Server at localhost

Specify the server path (i.e. catalina.base) and deploy path. Server must be published with no modules present to make changes.

☐ Use workspace metadata (does not modify Tomcat installation)  
☒ Use Tomcat installation (takes control of Tomcat installation)  
☐ Use custom location (does not modify Tomcat installation)

Server path:  Browse...

[Set deploy path to the default value \(currently set\)](#)

Deploy path:  Browse...

**Server Options**

Enter settings for the server.

☐ Serve modules without publishing  
☐ Publish module contexts to separate XML files

Overview Modules

Outline Task List

An outline is not available.

Markers Properties Servers Data Source Explorer Snippets Console

Tomcat v8.0 Server at localhost [Started, Synchronized]

# Apache Tomcat/8.0.36



The **Apache Software Foundation**

<http://www.apache.org/>

If you're seeing this, you've successfully installed Tomcat. Congratulations!



Recommended Reading:

[Security Considerations HOW-TO](#)

[Manager Application HOW-TO](#)

[Clustering/Session Replication HOW-TO](#)

[Server Status](#)

[Manager App](#)

[Host Manager](#)

## Developer Quick Start

[Tomcat Setup](#)

[First Web Application](#)

[Realms & AAA](#)

[JDBC DataSources](#)

[Examples](#)

[Servlet Specifications](#)

[Tomcat Versions](#)

## Managing Tomcat

For security, access to the [manager webapp](#) is restricted. Users are defined in:

`$CATALINA_HOME/conf/tomcat-users.xml`

In Tomcat 8.0 access to the manager application is split between different users.  
[Read more...](#)

[Release Notes](#)

[Changelog](#)

[Migration Guide](#)

## Documentation

[Tomcat 8.0 Documentation](#)

[Tomcat 8.0 Configuration](#)

[Tomcat Wiki](#)

Find additional important configuration information in:

`$CATALINA_HOME/RUNNING.txt`

Developers may be interested in:

[Tomcat 8.0 Bug Database](#)

[Tomcat 8.0 JavaDocs](#)

## Getting Help

[FAQ](#) and [Mailing Lists](#)

The following mailing lists are available:

[tomcat-announce](#)

Important announcements, releases, security vulnerability notifications. (Low volume).

[tomcat-users](#)

User support and discussion

[taglibs-user](#)

User support and discussion for [Apache Taglibs](#)

[tomcat-dev](#)

Development mailing list, including commit



## Tomcat Web Application Manager

Message: OK

### Manager

[List Applications](#)
[HTML Manager Help](#)
[Manager Help](#)
[Server Status](#)

### Applications

Path	Version	Display Name	Running	Sessions	Commands
/	None specified	Welcome to Tomcat	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/docs	None specified	Tomcat Documentation	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/examples	None specified	Servlet and JSP Examples	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/host-manager	None specified	Tomcat Host Manager Application	true	1	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/manager	None specified	Tomcat Manager Application	true	1	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes



# Maven

---

- **Apache Maven**, ou Maven, é uma ferramenta de automação de compilação utilizada em projetos Java.



# Maven

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- **Usadas para construir e executar tarefas de projeto**
  - Compilação de código fonte
  - Compilar e executar testes
  - Empacotar projeto para distribuição
  - Realizar gestão de dependências
  - Deploy em diversos servidores de aplicação
  - Geração de documentação (parecido com Wiki)

# Maven

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- **Instalação para uso via IDE**
  - O Maven já vem embutido na maioria das IDEs Java, não sendo necessário instalar nada, além da própria IDE

- New Shift+Alt+N ▶
  - Open File...
  - Open Projects from File System...
  - Recent Files
  - Close Ctrl+W
  - Close All Shift+Ctrl+W
  - Save Ctrl+S
  - Save As...
  - Save All Shift+Ctrl+S
  - Revert
  - Move...
  - Rename... F2
  - Refresh F5
  - Convert Line Delimiters To ▶
  - Print... Ctrl+P
  - Import...
  - Export...
  - Properties Alt+Enter
  - Switch Workspace ▶
  - Restart
  - Exit

- Java Project
- Enterprise Application Project
- Dynamic Web Project
- EJB Project
- Connector Project
- Application Client Project
- Static Web Project
- JPA Project
- Project...
- Servlet
- Session Bean (EJB 3.x)
- Message-Driven Bean (EJB 3.x)
- Web Service
- Folder
- File
- Example...
- Other...

Data Source Explorer Snippets Console

Tomcat v8.0 Server at localhost [Started, Synchronized]

### New Maven Project

Select project name and location

☐ Create a simple project (skip archetype selection)

☒ Use default Workspace location

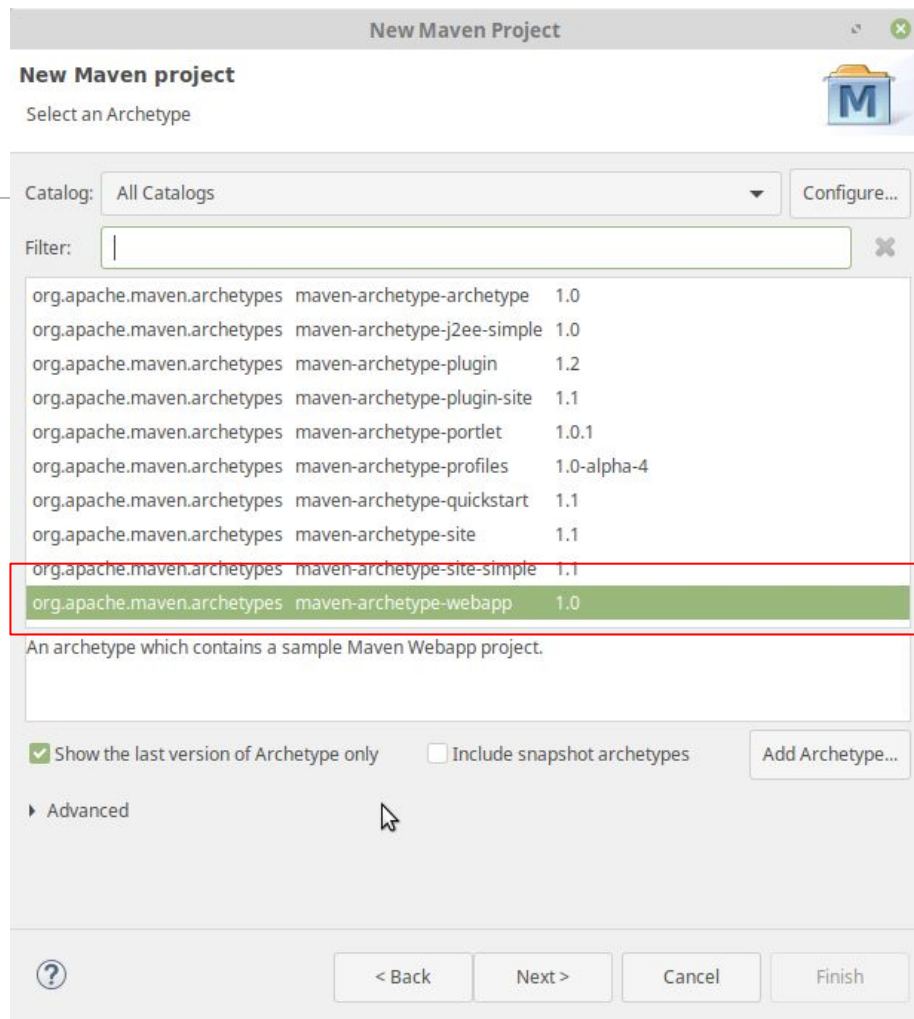
Location:  Browse...

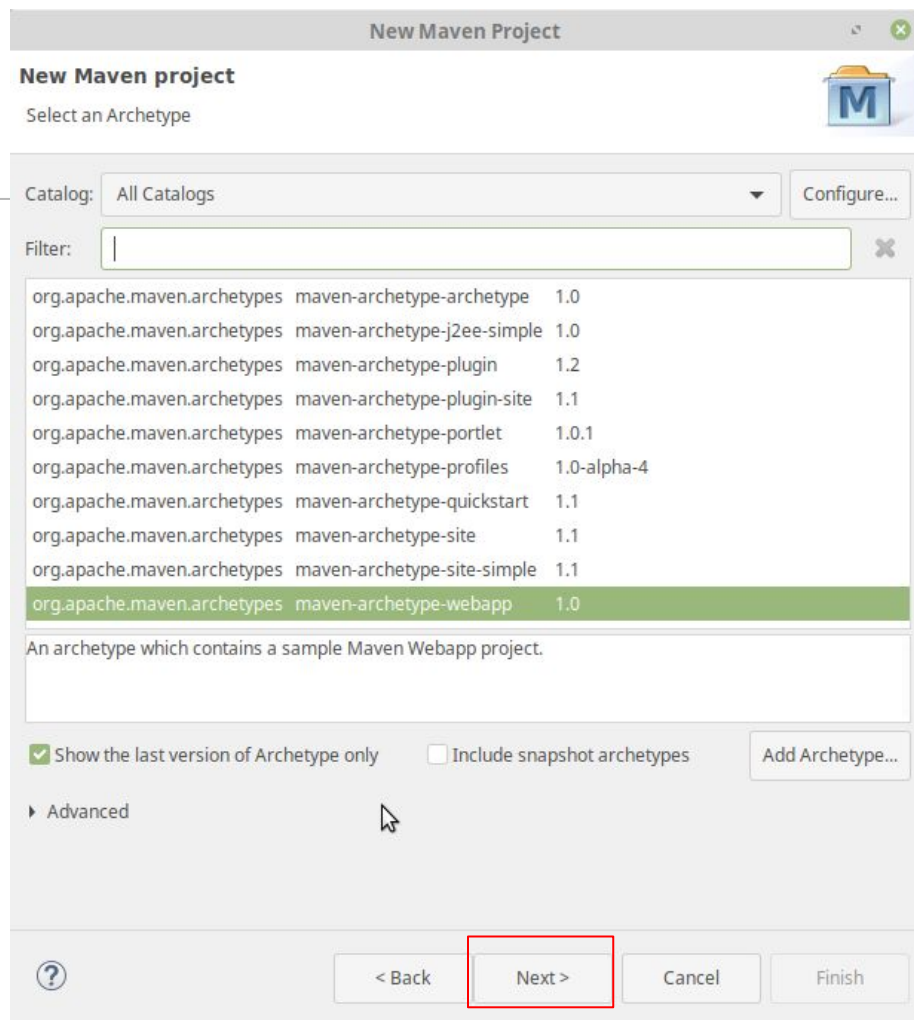
☐ Add project(s) to working set

Working set:  More...

▶ Advanced


? < Back Next > Cancel Finish





New Maven Project

**New Maven project**  
Specify Archetype parameters



Group Id:

Artifact Id:

Version:

Package:

Properties available from archetype:

Name	Value
------	-------

Add...

Remove

▸ Advanced

?

< Back

Next >

Cancel

Finish



The screenshot shows the Eclipse IDE interface. The 'Window' menu is open, and the 'Preferences' option is highlighted. The 'Project Explorer' on the left shows the project structure, including 'hello' and its sub-projects. The 'Outline' view on the right shows the 'html' file. The 'Console' view at the bottom shows the 'Tomcat v8.0 Server at localhost' status.

**Project Explorer:**

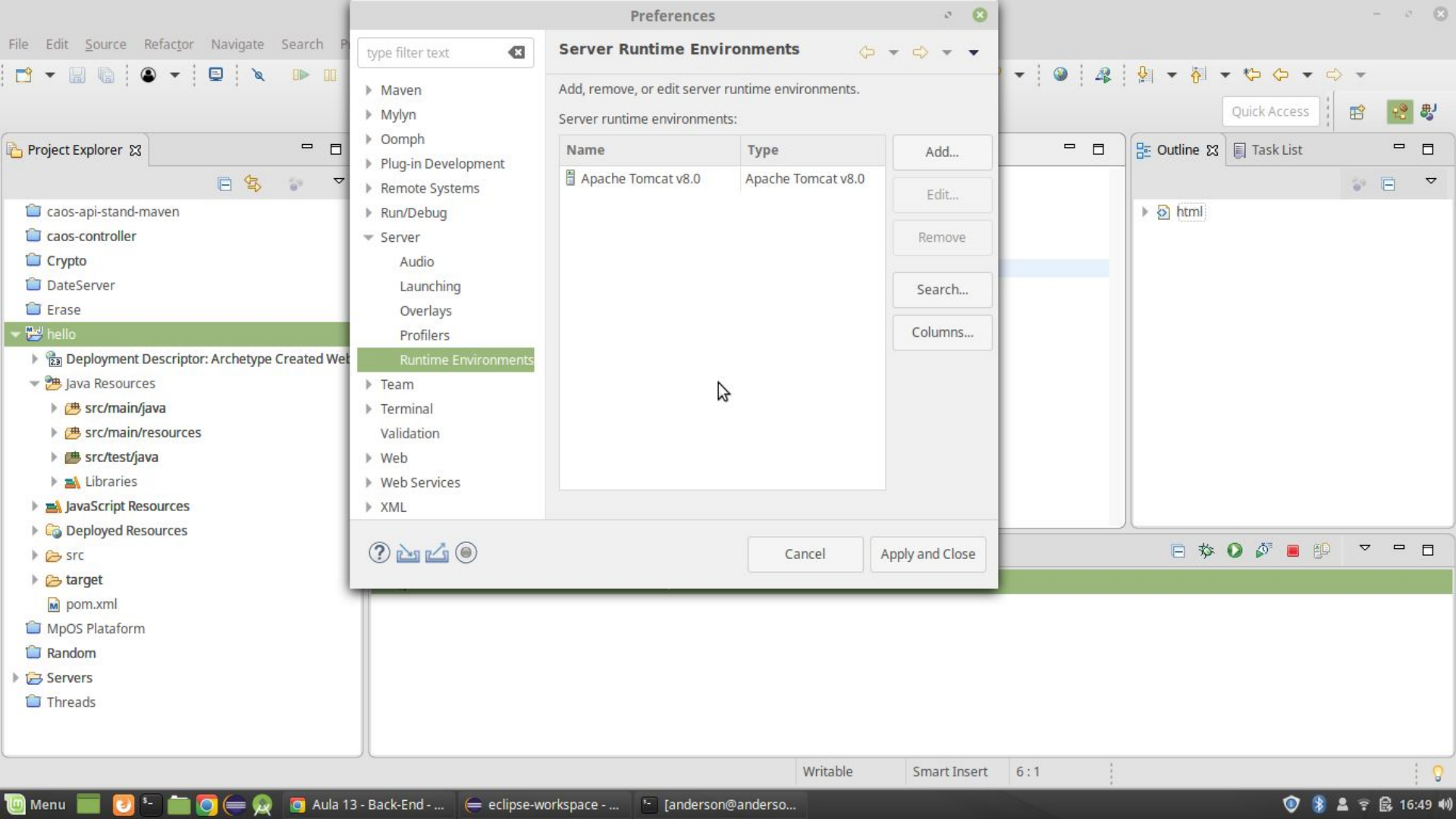
- caos-api-stand-maven
- caos-controller
- Crypto
- DateServer
- Erase
- hello
  - Deployment Descriptor: Archetype Created Web A
  - Java Resources
    - src/main/java
    - src/main/resources
    - src/test/java
    - Libraries
  - JavaScript Resources
  - Deployed Resources
  - src
  - target
  - pom.xml
- MpOS Plataforma
- Random
- Servers
- Threads

**Outline:**

- html

**Console:**

- Tomcat v8.0 Server at localhost [Started, Synchronized]



## Preferences

### Server Runtime Environments

Add, remove, or edit server runtime environments.

Server runtime environments:

Name	Type
Apache Tomcat v8.0	Apache Tomcat v8.0

Add...

Edit...

Remove

Search...

Columns...

Cancel

Apply and Close



- type filter text
- ▶ Maven
- ▶ Mylyn
- ▶ Oomph
- ▶ Plug-in Development
- ▶ Remote Systems
- ▶ Run/Debug
- ▼ Server
  - Audio
  - Launching
  - Overlays
  - Profilers
  - Runtime Environments**
  - Team
  - Terminal
  - Validation
  - Web
  - Web Services
  - XML

Quick Access

Outline

Task List

▶ html

Writable

Smart Insert

6 : 1





## Project Explorer

- caos-api-stand-maven
- caos-controller
- Crypto
- DateServer
- Erase
- hello
  - Deployment Descriptor: Archetype C...
  - Java Resources
    - src/main/java
    - src/main/resources
    - src/test/java
    - Libraries
  - JavaScript Resources
  - Deployed Resources
  - src
  - target
  - pom.xml
  - MpOS Plataforma
  - Random
  - Servers
  - Threads

- Paste Ctrl+V
- Delete
- Remove from Context
- Build Path
- Refactor Shift+Alt+T
- Import
- Export
- Refresh F5
- Close Project
- Close Unrelated Project
- Show in Remote Systems view
- Validate
- Coverage As
- Run As
- Debug As
- Profile As
- Restore from Local History...
- Java EE Tools
- Maven
- Team
- Compare With
- Configure
- Source
- Properties Alt+Enter



Quick Access

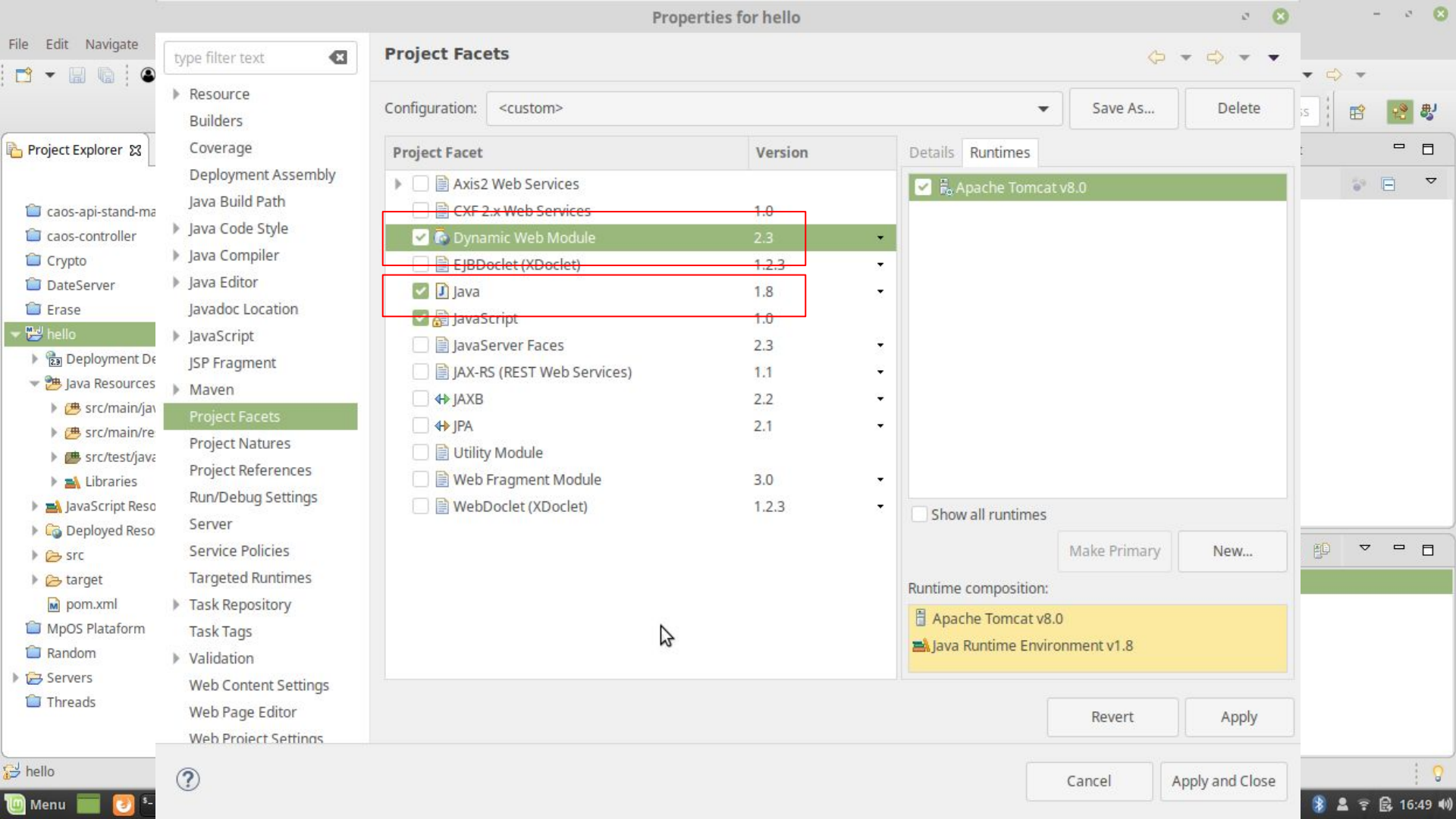


## Outline

## Task List

html

hello



## Properties for hello

File Edit Navigate

type filter text

### Project Facets

Configuration: <custom>

Save As...

Delete

#### Project Facet

#### Version

<input type="checkbox"/>	Axis2 Web Services	
<input type="checkbox"/>	CXF 2.x Web Services	1.0
<input checked="" type="checkbox"/>	Dynamic Web Module	2.3
<input type="checkbox"/>	EJBDoclet (XDoclet)	1.2.3
<input checked="" type="checkbox"/>	Java	1.8
<input checked="" type="checkbox"/>	JavaScript	1.0
<input type="checkbox"/>	JavaServer Faces	2.3
<input type="checkbox"/>	JAX-RS (REST Web Services)	1.1
<input type="checkbox"/>	JAXB	2.2
<input type="checkbox"/>	JPA	2.1
<input type="checkbox"/>	Utility Module	
<input type="checkbox"/>	Web Fragment Module	3.0
<input type="checkbox"/>	WebDoclet (XDoclet)	1.2.3

#### Details

#### Runtimes

☒ Apache Tomcat v8.0

☐ Show all runtimes

Make Primary

New...

Runtime composition:

☒ Apache Tomcat v8.0

☒ Java Runtime Environment v1.8

Revert

Apply

Cancel

Apply and Close



hello

Menu

16:49

# POM.XML

---

- **Project Object Model**
  - Unidade básica do Maven
  - Centraliza todas as configurações
  - Arquivo XML com todas as informações do projeto
  - Através do pom, Maven pode compilar, testar, empacotar, etc.

The screenshot displays the Eclipse IDE interface with the following components:

- Project Explorer:** Shows the project structure. The 'hello' project is expanded, revealing 'src/main/java', 'src/main/resources', 'src/test/java', 'Libraries' (including Apache Tomcat v8.0 and JRE System Library), 'JavaScript Resources', 'Deployed Resources', 'src' (with 'main' and 'test' subfolders), and 'target'.
- Editor:** Displays the 'pom.xml' file with the following XML content:

```
1 <?xml version="1.0" encoding="UTF-8" ?>
2 <project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
3       xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/maven-v4_0_0.xsd">
4   <groupId>anderson</groupId>
5   <artifactId>hello</artifactId>
6   <packaging>war</packaging>
7   <version>1.0.0</version>
8   <name>hello Maven Webapp</name>
9   <url>http://maven.apache.org</url>
10  <dependencies>
11    <dependency>
12      <groupId>junit</groupId>
13      <artifactId>junit</artifactId>
14      <version>3.8.1</version>
15      <scope>test</scope>
16    </dependency>
17  </dependencies>
18  <build>
19    <finalName>hello</finalName>
20  </build>
21 </project>
```
- Outline:** Shows the project structure, including the 'pom.xml' file.
- Task List:** Empty.
- Markers:** Empty.
- Properties:** Empty.
- Servers:** Shows 'Tomcat v8.0 Server at localhost [Started, Synchronized]'.
- Data Source Explorer:** Empty.
- Snippets:** Empty.
- Console:** Empty.

# Links importantes

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- <https://httpd.apache.org/>
- <http://tomcat.apache.org/>
- <https://maven.apache.org/>
- <https://stackoverflow.com/questions/3535078/tomcat-manager-html-is-not-available>



# Dúvidas??

E-mail: [almada@crateus.ufc.br](mailto:almada@crateus.ufc.br)