

Universidade Presbiteriana Mackenzie



Configuração do Servlet Container

Prof. Fabio Kawaoka Takase

Prof. Leandro Pupo Natale

Prof. Pedro Henrique Cacique Braga

Faculdade de Computação e Informática

Objetivos

- Configurar um Servlet Container para implantação e execução de aplicações WEB.
 - Instalação do Servlet Container
 - Execução do Servlet Container
 - Implantação de uma aplicação WEB no Servlet Container

Instalação do Tomcat

- O Servlet Container pode ser instalado em um diretório de preferencia.
- No Lab instalaremos em `c : \Temp`

Instalação do Tomcat

- Copiar o arquivo apache-tomcat-9.0.0.M11.zip para a pasta `c:\Temp` e descompactar o conteúdo do arquivo.

Verificação da Instalação

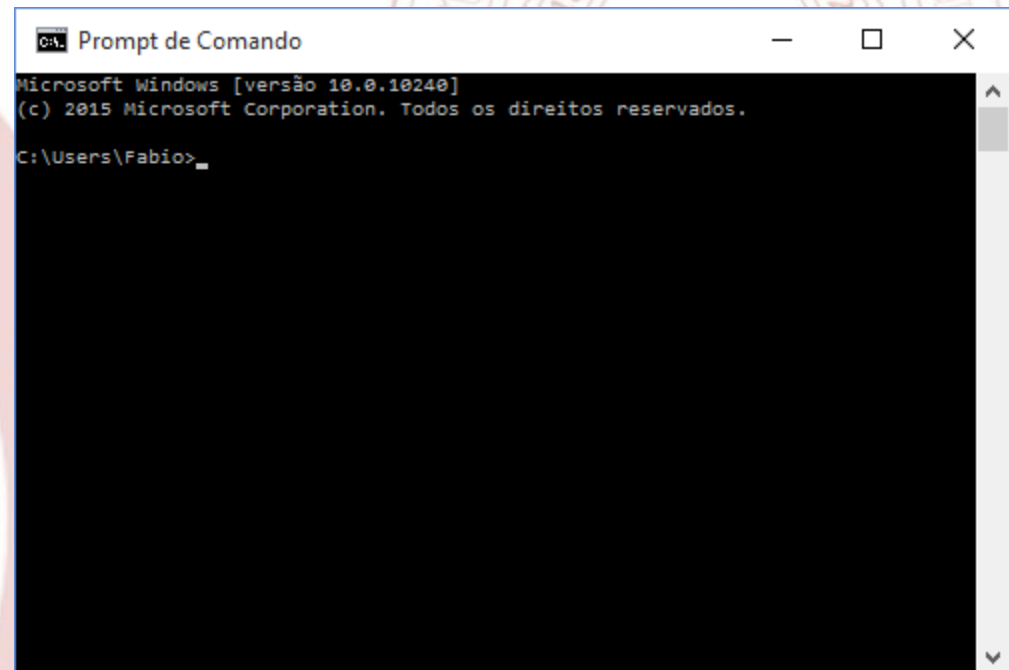
- Verifique se o arquivo `startup.bat` se encontra na pasta `c:\Temp\apache-tomcat-9.0.0.M11\bin`.

Ambiente de Execução

- O Servlet Container é uma aplicação Java e por isto precisa do ambiente de execução Java instalado e acessível.
 - Quando instalamos o kit de desenvolvimento Java (JDK = Java Development Kit), o ambiente de execução Java (JRE = Java Runtime Environment) também é instalado.
 - Em ambientes de execução, podemos instalar apenas o JRE.
 - No laboratório temos o JDK instalado.

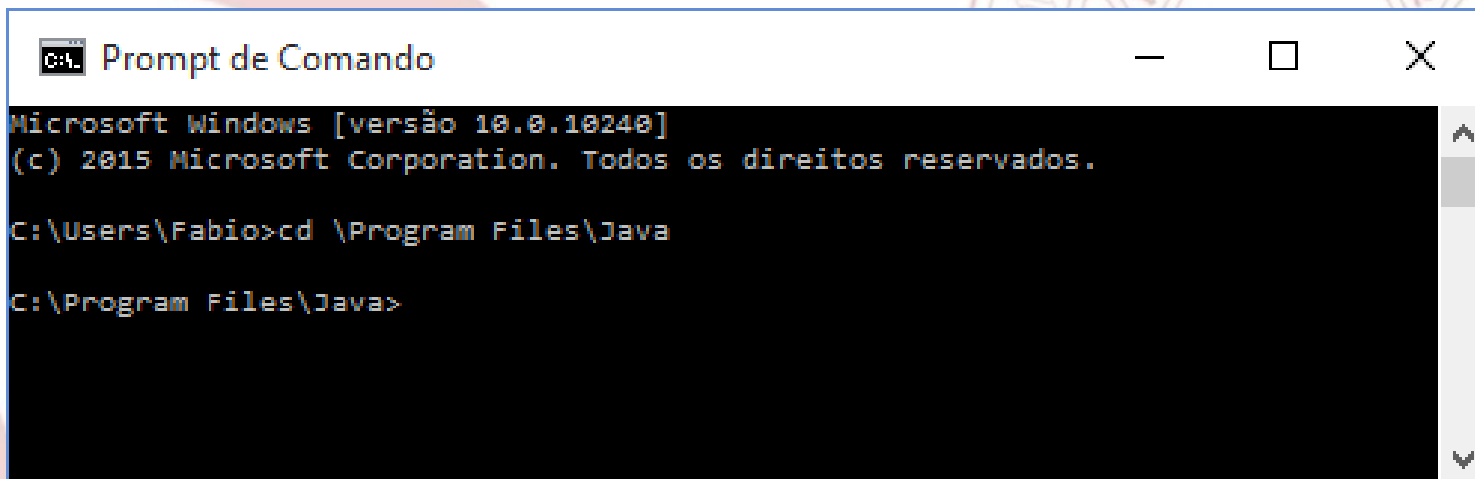
Verificação do Ambiente de Execução

- Verifique onde o JDK foi instalado em seu computador.
 - No laboratório, abra uma janela de *prompt* de comando



Verificação do Ambiente de Execução

- Digite o comando: `cd \Program Files\Java <enter>`



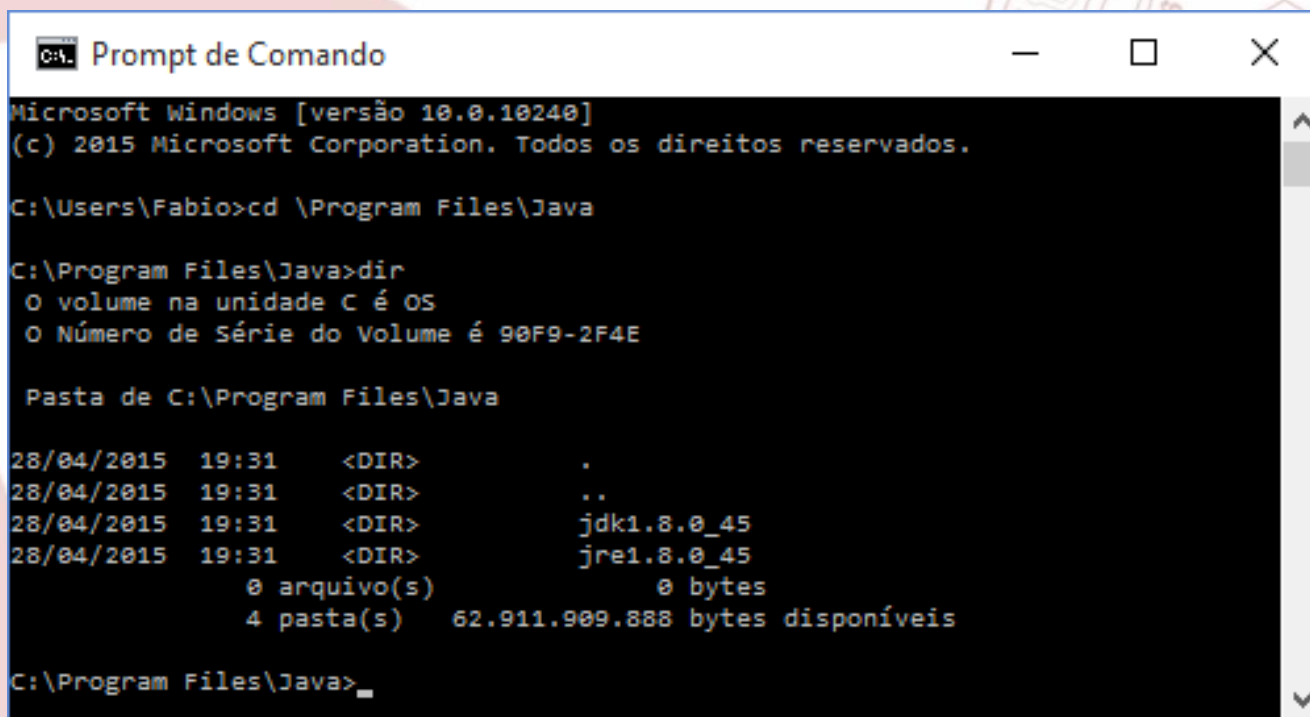
```
Microsoft Windows [versão 10.0.10240]
(c) 2015 Microsoft Corporation. Todos os direitos reservados.

C:\Users\Fabio>cd \Program Files\Java

C:\Program Files\Java>
```


Verificação do Ambiente de Execução

- Digite o comando: dir <enter>



```
C:\> Prompt de Comando

Microsoft Windows [versão 10.0.10240]
(c) 2015 Microsoft Corporation. Todos os direitos reservados.

C:\Users\Fabio>cd \Program Files\Java

C:\Program Files\Java>dir
O volume na unidade C é OS
O Número de Série do Volume é 90F9-2F4E

Pasta de C:\Program Files\Java

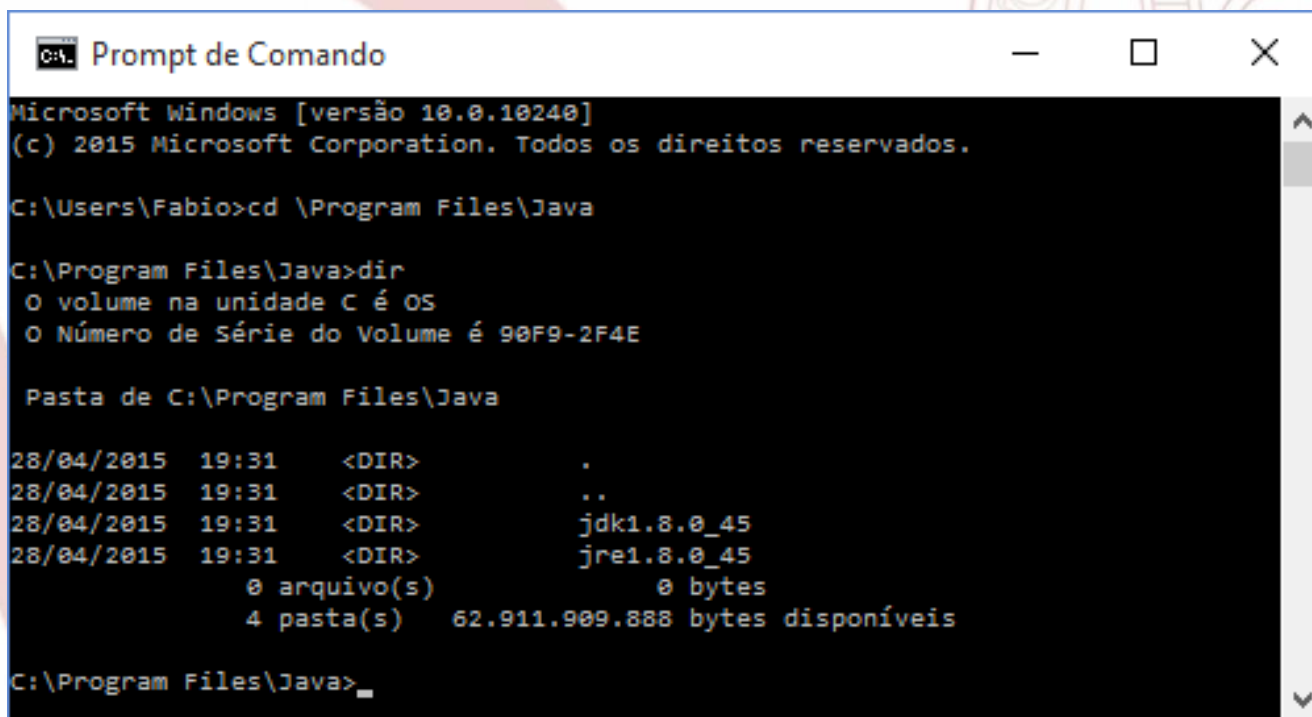
28/04/2015  19:31    <DIR>          .
28/04/2015  19:31    <DIR>          ..
28/04/2015  19:31    <DIR>          jdk1.8.0_45
28/04/2015  19:31    <DIR>          jre1.8.0_45
                0 arquivo(s)          0 bytes
                4 pasta(s) 62.911.909.888 bytes disponíveis

C:\Program Files\Java>
```

Verificação do Ambiente de Execução

– Neste computador, o jdk foi instalado em:

C:\Program Files\Java\jdk1.8.0_45



```
CH: Prompt de Comando
Microsoft Windows [versão 10.0.10240]
(c) 2015 Microsoft Corporation. Todos os direitos reservados.

C:\Users\Fabio>cd \Program Files\Java

C:\Program Files\Java>dir
O volume na unidade C é OS
O Número de Série do Volume é 90F9-2F4E

Pasta de C:\Program Files\Java

28/04/2015  19:31    <DIR>          .
28/04/2015  19:31    <DIR>          ..
28/04/2015  19:31    <DIR>          jdk1.8.0_45
28/04/2015  19:31    <DIR>          jre1.8.0_45
               0 arquivo(s)                0 bytes
               4 pasta(s) 62.911.909.888 bytes disponíveis

C:\Program Files\Java>
```

Execução do Servlet Container

1. No prompt de comando, execute o comando:

```
cd C:\Temp\apache-tomcat-9.0.0.M11\bin <enter>
```

2. Ainda no prompt de comando, execute:

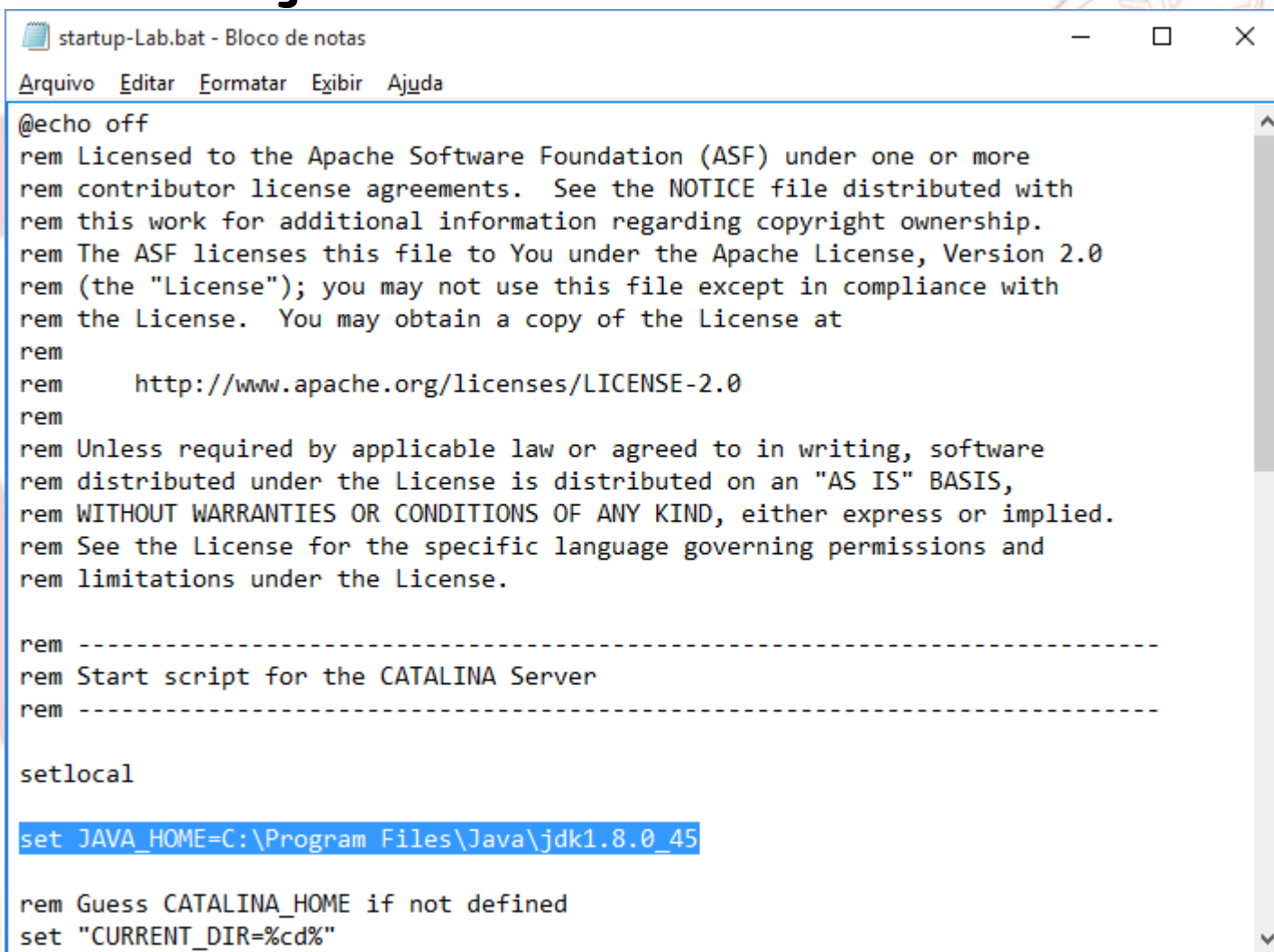
```
copy startup.bat startup-lab.bat <enter>
```

3. No prompt de comando execute:

```
notepad.exe startup-lab.bat <enter>
```

4. Edite o arquivo inserindo a linha evidenciada na figura a seguir. (note que você deve indicar onde foi instalado o jdk da máquina que você está utilizando). Salve suas alterações.

Execução do Servlet Container



```
startup-Lab.bat - Bloco de notas
Arquivo  Editar  Formatar  Exibir  Ajuda

@echo off
rem Licensed to the Apache Software Foundation (ASF) under one or more
rem contributor license agreements.  See the NOTICE file distributed with
rem this work for additional information regarding copyright ownership.
rem The ASF licenses this file to You under the Apache License, Version 2.0
rem (the "License"); you may not use this file except in compliance with
rem the License.  You may obtain a copy of the License at
rem
rem      http://www.apache.org/licenses/LICENSE-2.0
rem
rem Unless required by applicable law or agreed to in writing, software
rem distributed under the License is distributed on an "AS IS" BASIS,
rem WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
rem See the License for the specific language governing permissions and
rem limitations under the License.

rem -----
rem Start script for the CATALINA Server
rem -----

setlocal

set JAVA_HOME=C:\Program Files\Java\jdk1.8.0_45

rem Guess CATALINA_HOME if not defined
set "CURRENT_DIR=%cd%"
```

Execução do Servlet Container

1. Execute o Tomcat:

```
startup-lab.bat <enter>
```

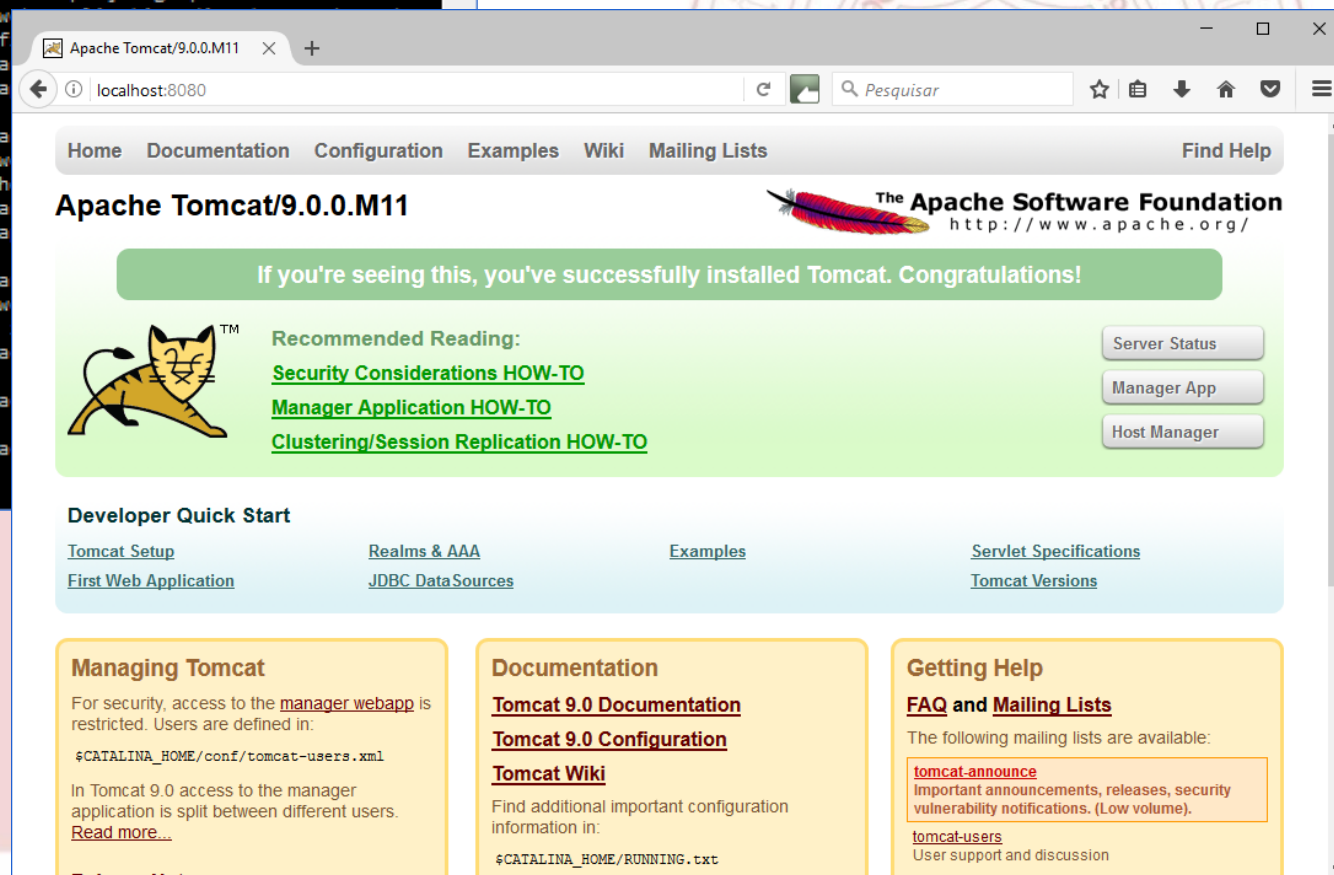
2. Verifique se o tomcat está em execução:

1. Execute o navegador

2. Entre com a seguinte URL: <http://localhost:8080>

Execução do Servlet Container

```
Tomcat
04-Feb-2016 09:36:43.193 INFO [localhost-startStop-1] org.apache.catalina.startup
p.HostConfig.deployDirectory Deploying web application directory C:\Temp\apache-
tomcat-8.0.24\webapps\host-manager
04-Feb-2016 09:36:43.240 INFO [localhost-startStop-1] org.apache.catalina.startup
p.HostConfig.deployDirectory Deployment of web application at C:\Temp\apache-
tomcat-8.0.24\webapps\host-manager has finished
04-Feb-2016 09:36:43.240 INFO [localhost-startStop-1] org.apache.catalina.startup
p.HostConfig.deployDirectory Deploying web application at C:\Temp\apache-
tomcat-8.0.24\webapps\manager
04-Feb-2016 09:36:43.271 INFO [localhost-startStop-1] org.apache.catalina.startup
p.HostConfig.deployDirectory Deployment of web application at C:\Temp\apache-
tomcat-8.0.24\webapps\manager has finished
04-Feb-2016 09:36:43.271 INFO [localhost-startStop-1] org.apache.catalina.startup
p.HostConfig.deployDirectory Deploying web application at C:\Temp\apache-
tomcat-8.0.24\webapps\ROOT
04-Feb-2016 09:36:43.302 INFO [localhost-startStop-1] org.apache.catalina.startup
p.HostConfig.deployDirectory Deployment of web application at C:\Temp\apache-
tomcat-8.0.24\webapps\ROOT has finished
04-Feb-2016 09:36:43.302 INFO [main] org.apache.catalina.core.StandardEngine
Starting ProtocolHandler ["http-nio-8080"]
04-Feb-2016 09:36:43.318 INFO [main] org.apache.catalina.core.StandardEngine
Starting ProtocolHandler ["ajp-nio-8009"]
04-Feb-2016 09:36:43.318 INFO [main] org.apache.catalina.core.StandardEngine
Server startup in 789 ms
```

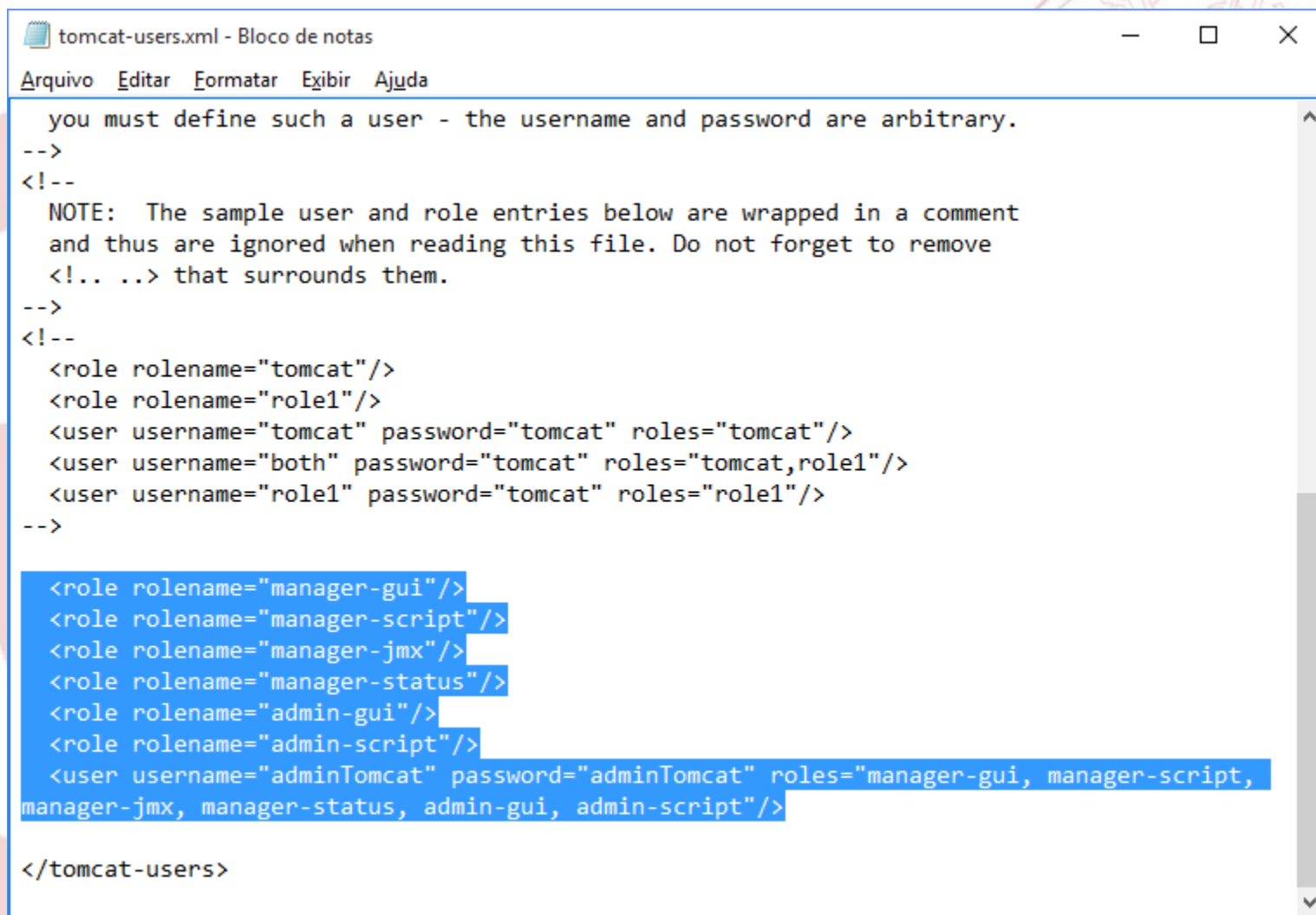


The screenshot shows the Apache Tomcat 9.0.0.M11 web interface in a browser. The address bar shows 'localhost:8080'. The page has a navigation bar with links: Home, Documentation, Configuration, Examples, Wiki, Mailing Lists, and Find Help. The main heading is 'Apache Tomcat/9.0.0.M11' with the Apache Software Foundation logo and URL 'http://www.apache.org/'. A green banner states: 'If you're seeing this, you've successfully installed Tomcat. Congratulations!'. Below this is a 'Recommended Reading' section with links to 'Security Considerations HOW-TO', 'Manager Application HOW-TO', and 'Clustering/Session Replication HOW-TO'. To the right of these links are buttons for 'Server Status', 'Manager App', and 'Host Manager'. A 'Developer Quick Start' section contains links for 'Tomcat Setup', 'First Web Application', 'Realms & AAA', 'JDBC DataSources', 'Examples', 'Servlet Specifications', and 'Tomcat Versions'. At the bottom, there are three yellow boxes: 'Managing Tomcat' (with links to 'manager webapp' and 'tomcat-users.xml'), 'Documentation' (with links to 'Tomcat 9.0 Documentation', 'Tomcat 9.0 Configuration', and 'Tomcat Wiki'), and 'Getting Help' (with links to 'FAQ and Mailing Lists' and 'tomcat-announce'/'tomcat-users' mailing lists).

Usuário de Gerenciamento

1. O Tomcat possui uma aplicação de gerenciamento do servidor.
2. Por padrão, ela vem sem nenhum usuário definido.
3. Devemos criar um usuário.
 - Editar o arquivo `tomcat-users.xml` que se encontra no diretório `c:\Temp\apache-tomcat-9.0.0.M11\conf`
 - Acrescente as linhas indicadas na figura e salve o arquivo.

Usuário de Gerenciamento



```
tomcat-users.xml - Bloco de notas
Arquivo  Editar  Formatar  Exibir  Ajuda

you must define such a user - the username and password are arbitrary.
-->
<!--
NOTE: The sample user and role entries below are wrapped in a comment
and thus are ignored when reading this file. Do not forget to remove
<!-- ... --> that surrounds them.
-->
<!--
<role rolename="tomcat"/>
<role rolename="role1"/>
<user username="tomcat" password="tomcat" roles="tomcat"/>
<user username="both" password="tomcat" roles="tomcat,role1"/>
<user username="role1" password="tomcat" roles="role1"/>
-->

<role rolename="manager-gui"/>
<role rolename="manager-script"/>
<role rolename="manager-jmx"/>
<role rolename="manager-status"/>
<role rolename="admin-gui"/>
<role rolename="admin-script"/>
<user username="adminTomcat" password="adminTomcat" roles="manager-gui, manager-script,
manager-jmx, manager-status, admin-gui, admin-script"/>

</tomcat-users>
```

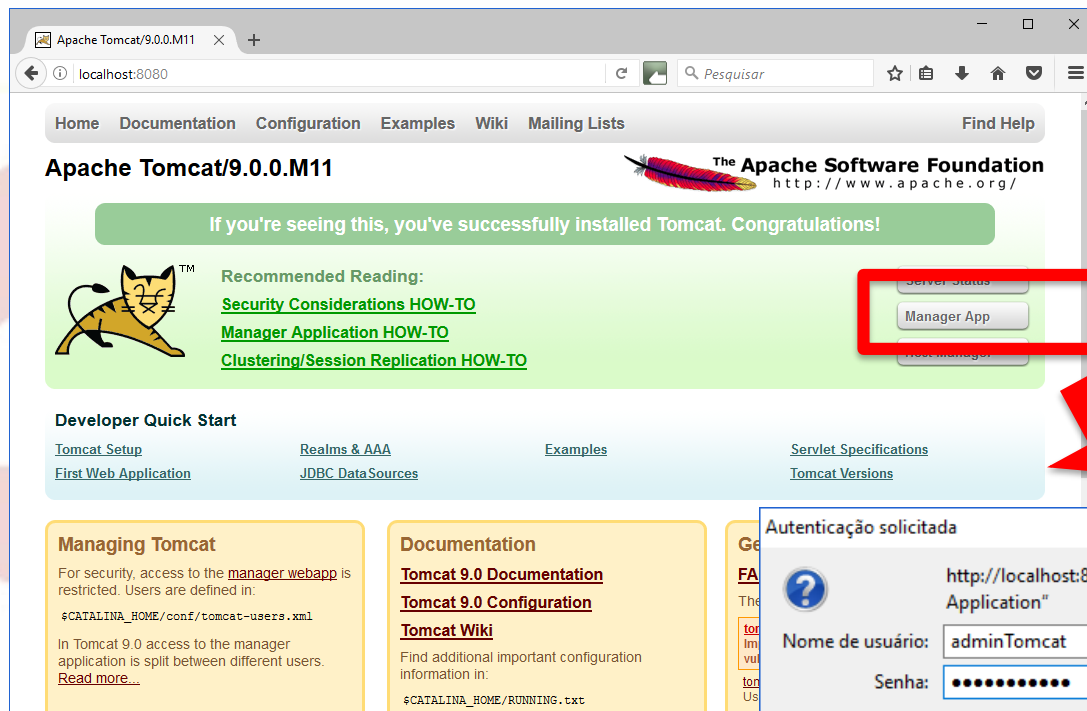
Usuário de Gerenciamento

```
<role rolename="manager-gui"/>
<role rolename="manager-script"/>
<role rolename="manager-jmx"/>
<role rolename="manager-status"/>
<role rolename="admin-gui"/>
<role rolename="admin-script"/>
<user username="adminTomcat"
password="adminTomcat" roles="manager-gui,
manager-script, manager-jmx, manager-status, admin-
gui, admin-script"/>
```

Aplicação de Gerenciamento

1. Encerre a execução do Tomcat (execute o arquivo **shutdown.bat**)
2. Execute novamente o arquivo **startup-lab.bat**
3. Abra a página inicial no navegador (**<http://localhost:8080>**).
4. Clique no botão **Manager App**
5. Entre com as credenciais...

Aplicação de Gerenciamento



Apache Tomcat/9.0.0.M11

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](#)

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

Documentation

- [Tomcat 9.0 Documentation](#)
- [Tomcat 9.0 Configuration](#)
- [Tomcat Wiki](#)

Find additional important configuration information in:

```
$CATALINA_HOME/RUNNING.txt
```

Autenticação solicitada

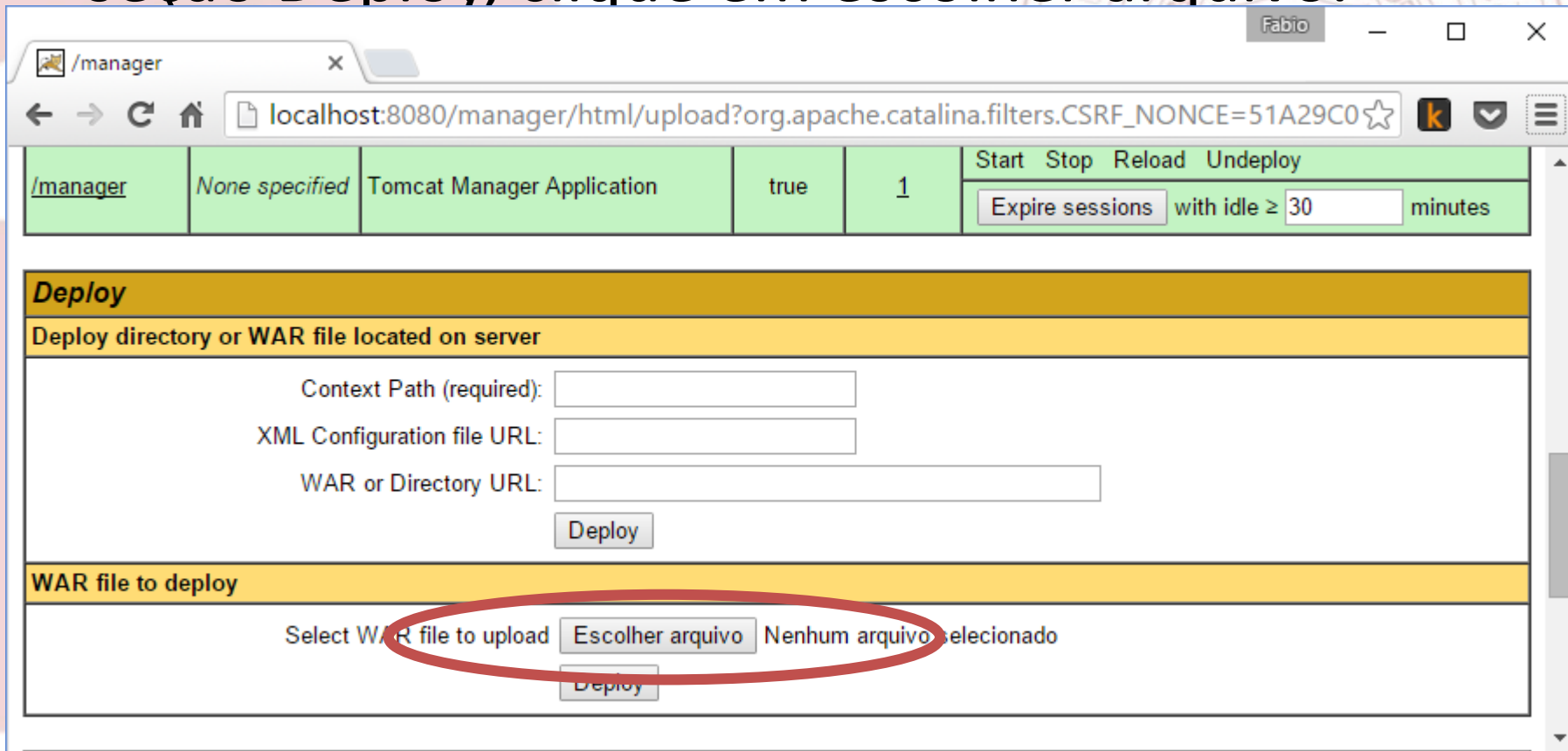
http://localhost:8080 está solicitando seu nome de usuário e senha. O site diz: "Tomcat Manager Application"

Nome de usuário:

Senha:

Implantação de uma aplicação WEB

- Na página de gerenciamento do servidor, na seção Deploy, clique em escolher arquivo.



The screenshot shows the Tomcat Manager web interface. The browser address bar displays `localhost:8080/manager/html/upload?org.apache.catalina.filters.CSRF_NONCE=51A29C0`. The interface includes a table with application details and a 'Deploy' section. The 'Deploy' section has two sub-sections: 'Deploy directory or WAR file located on server' and 'WAR file to deploy'. The 'WAR file to deploy' section contains the text 'Select WAR file to upload' followed by a button labeled 'Escolher arquivo' and the text 'Nenhum arquivo selecionado'. The 'Escolher arquivo' button is circled in red.

/manager	None specified	Tomcat Manager Application	true	1	Start Stop Reload Undeploy
					Expire sessions with idle ≥ 30 minutes

Deploy

Deploy directory or WAR file located on server

Context Path (required):

XML Configuration file URL:

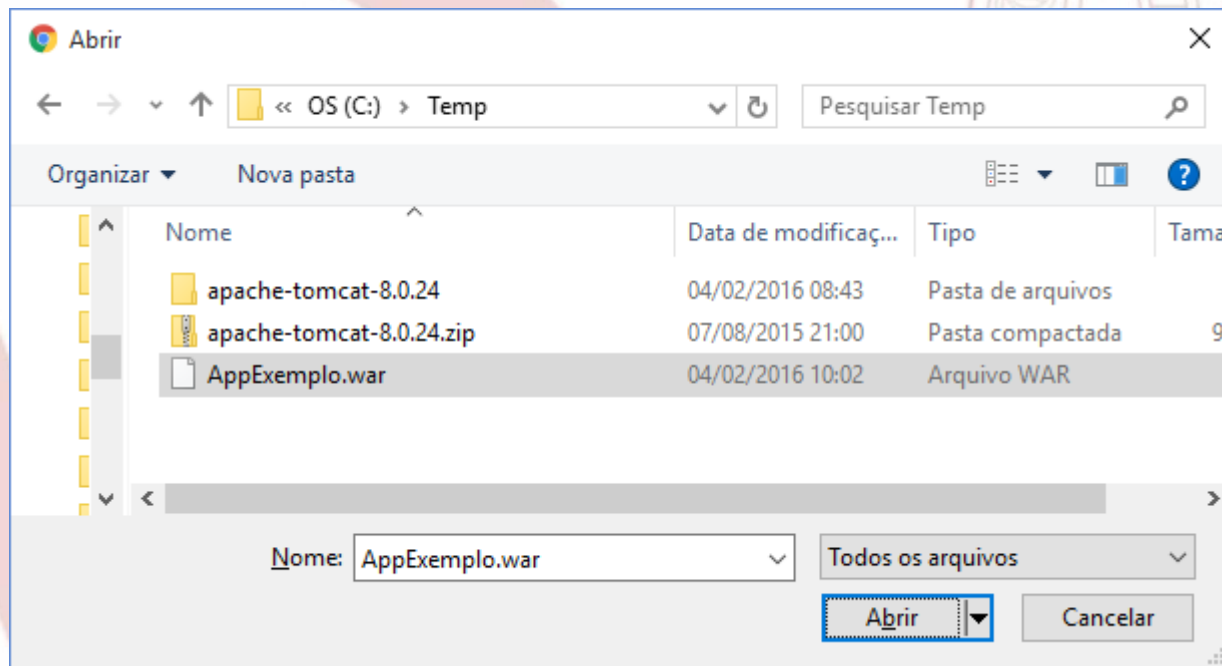
WAR or Directory URL:

WAR file to deploy

Select WAR file to upload Nenhum arquivo selecionado

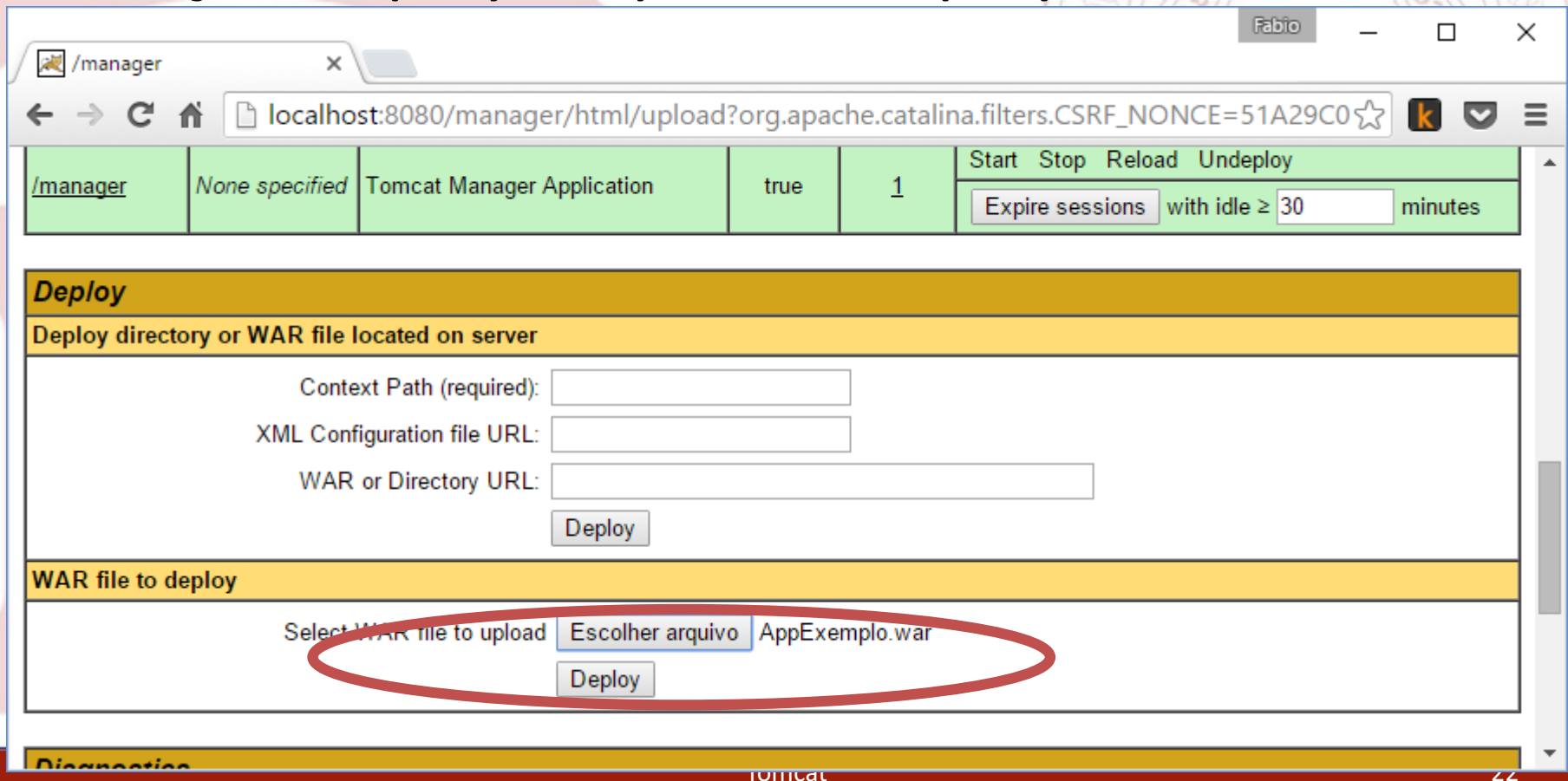
Implantação de uma aplicação WEB

- Selecione o arquivo `AppExemplo.war`.
- Abra o arquivo.



Implantação de uma aplicação WEB

- Na página de gerenciamento do servidor, na seção Deploy, clique em Deploy.



The screenshot shows the Tomcat Manager web interface in a browser window. The address bar shows the URL: `localhost:8080/manager/html/upload?org.apache.catalina.filters.CSRF_NONCE=51A29C0`. The interface has a top navigation bar with links: [/manager](#), [None specified](#), [Tomcat Manager Application](#), [true](#), [1](#), and a section for session management: [Start](#), [Stop](#), [Reload](#), [Undeploy](#), [Expire sessions](#) with idle minutes.

The main content area is divided into sections. The **Deploy** section is highlighted in yellow. It contains the following fields and buttons:

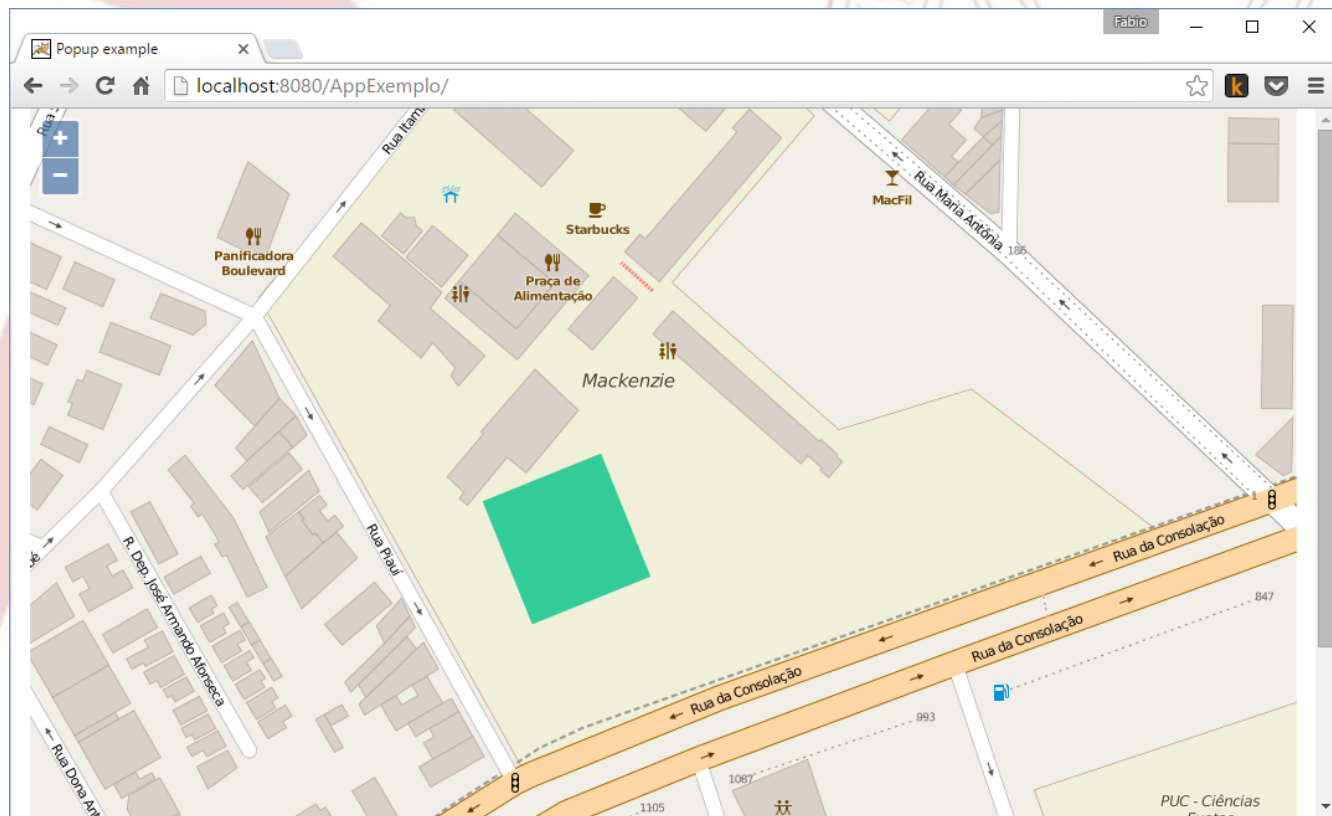
- Deploy directory or WAR file located on server**
 - Context Path (required):
 - XML Configuration file URL:
 - WAR or Directory URL:
 - [Deploy](#)
- WAR file to deploy**
 - Select WAR file to upload: [Escolher arquivo](#) AppExemplo.war
 - [Deploy](#)

A red oval highlights the [Escolher arquivo](#) button and the [Deploy](#) button in the WAR file to deploy section.

Implantação de uma aplicação WEB

- Abra a aplicação WEB no navegador:

`http://localhost:8080/AppExemplo/`



Prof. Fabio Kawaoka Takase
fabio.takase@mackenzie.br

Prof. Leandro Pupo Natale
1146355@mackenzie.br

Prof. Pedro Henrique Cacique Braga
1147106@mackenzie.br