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Installing and Evaluating Audit Control Environment's (ACE) Audit Manager v1.6

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Installing and Evaluating Audit Control Environment's (ACE) Audit Manager v1.6

Michael J. Bennett

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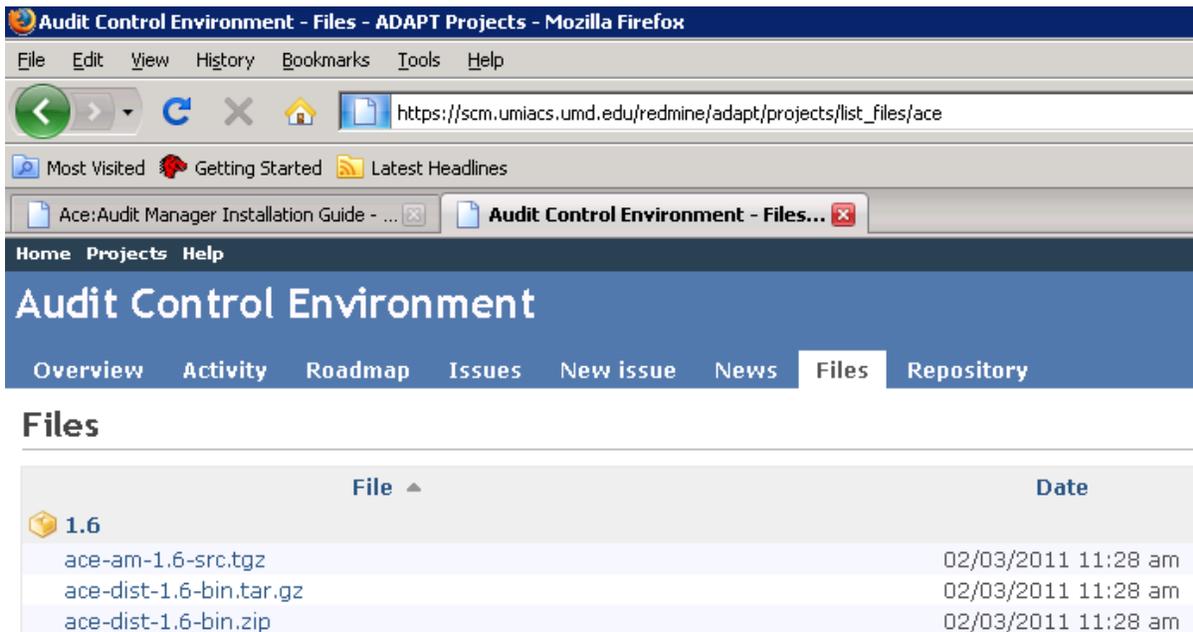
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These directions are in part a more granular and visual version of the useful installation information that can be found on developers' site at: <http://tinyurl.com/7wajxq2>

1. Download the following to the device on which ACE will be running (make sure to note where Tomcat and MySQL Connector end up being stored on the device):

- Java 1.6+ (<http://java.com/en/>)
- Tomcat 6.0+ (<http://tomcat.apache.org/>)
- MySQL 4.0+ (<http://www.mysql.com/>)
- MySQL Connector 5.1.X+ (<http://www.mysql.com/>)

2. Download ACE (whatever version is chosen, note where distribution gets stored on device and unpack):

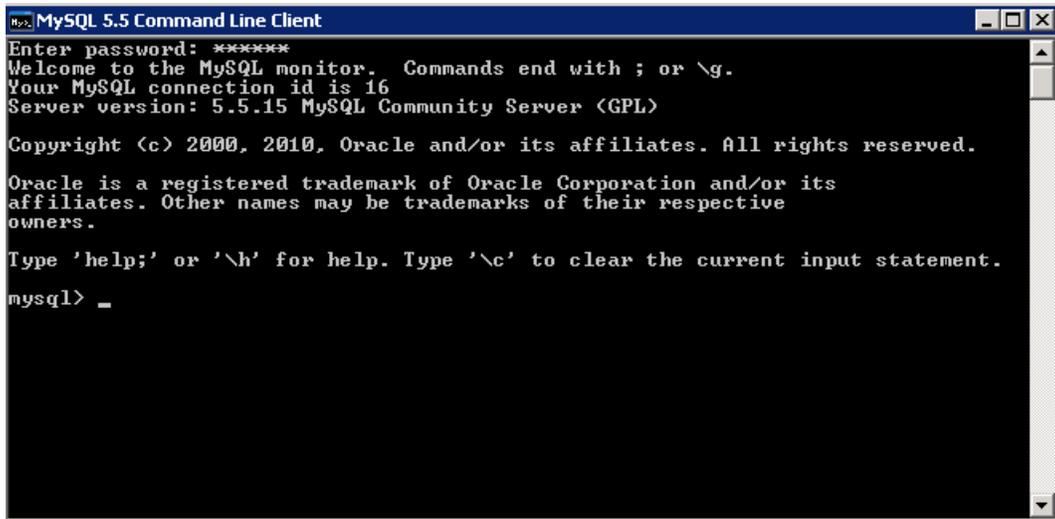


The screenshot shows a web browser window with the following details:

- Browser: Mozilla Firefox
- Page Title: Audit Control Environment - Files - ADAPT Projects - Mozilla Firefox
- Address Bar: https://scm.umiacs.umd.edu/redmine/adapt/projects/list_files/ace
- Navigation Menu: Home, Projects, Help
- Sub-Menu: Overview, Activity, Roadmap, Issues, New issue, News, **Files**, Repository
- Section Header: Files
- Table of Files:

File ▲	Date
1.6	
ace-am-1.6-src.tgz	02/03/2011 11:28 am
ace-dist-1.6-bin.tar.gz	02/03/2011 11:28 am
ace-dist-1.6-bin.zip	02/03/2011 11:28 am

3. Create ACE Database and User (Open MySQL Command Line Client and run the following commands where 'YOUR_PASSWORD' is a novel password to be set for the database.)



```
mysql> create database aceam;  
Query OK, 1 row affected (0.01 sec)
```

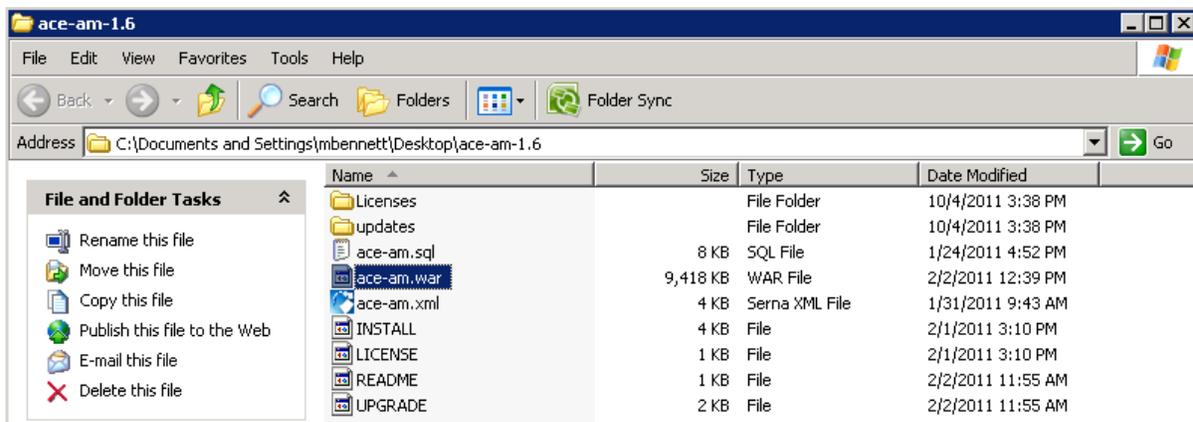
```
mysql> grant all on aceam.* to 'aceam'@'localhost' identified by 'YOUR_PASSWORD';  
Query OK, 0 rows affected (0.00 sec)
```

```
mysql> use aceam;  
Database changed
```

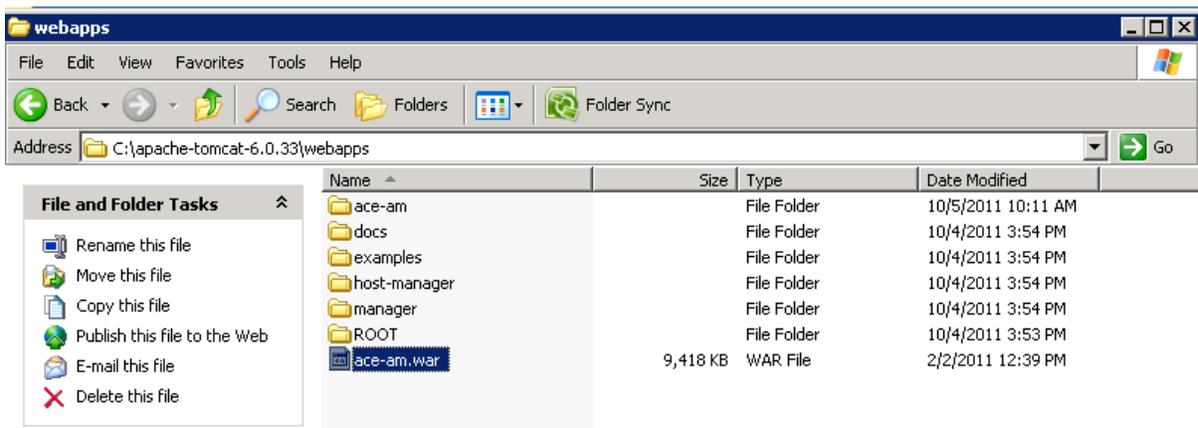
```
mysql> source ace.sql;  
ERROR 1146 (42S02): Table 'aceam.ACTIVITY_LOG_ENTRY' doesn't exist  
ERROR 1146 (42S02): Table 'aceam.ACTIVITY_LOG_ENTRY' doesn't exist  
...  
...  
Query OK, 0 rows affected (0.00 sec)  
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> exit  
Bye
```

4. From the unpacked ACE download, copy ace-am.war to the \webapps folder of Tomcat.

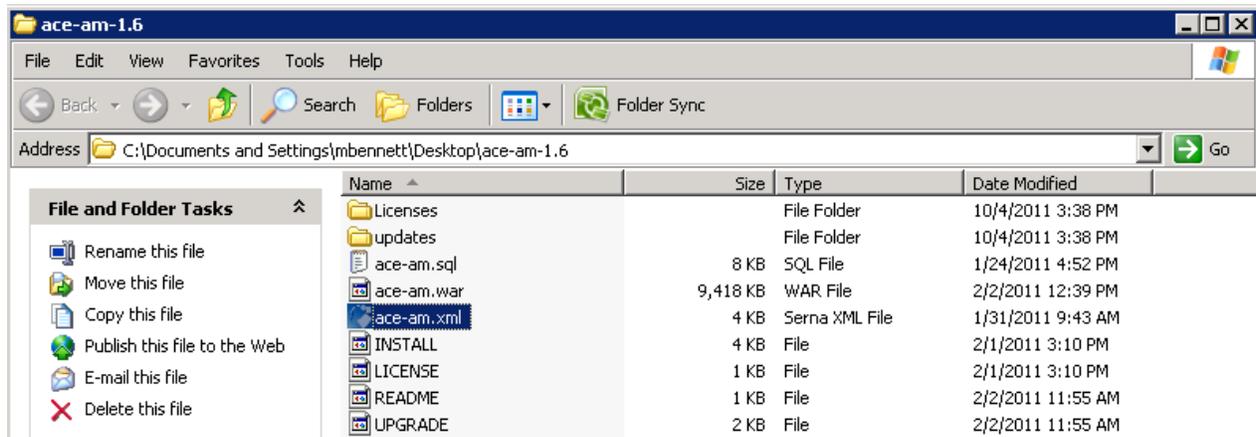


...copy

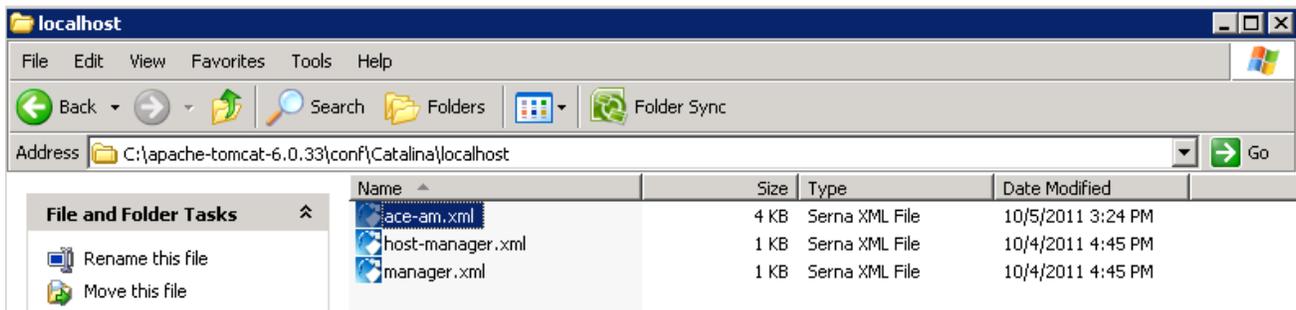


...paste

5. Place a copy of the configuration file ace-am.xml in Tomcat's \conf\Catalina\localhost directory.



...copy

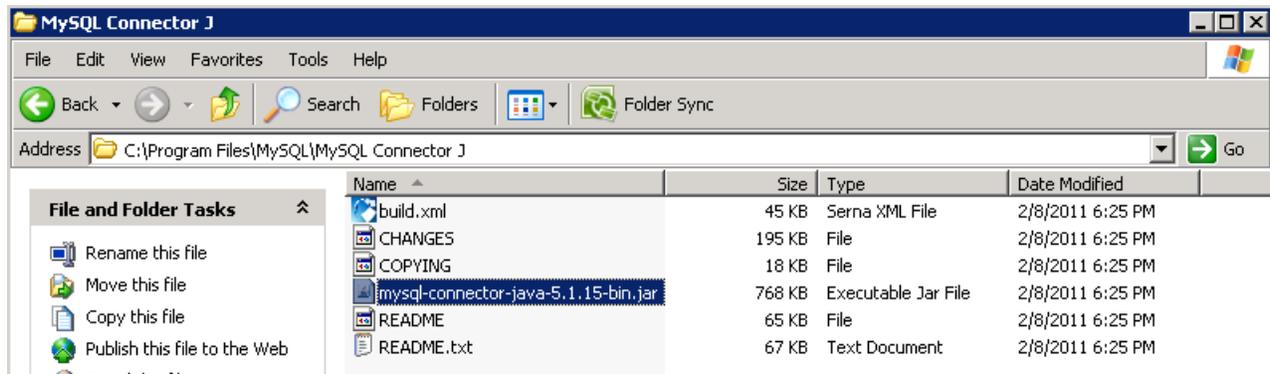


...paste

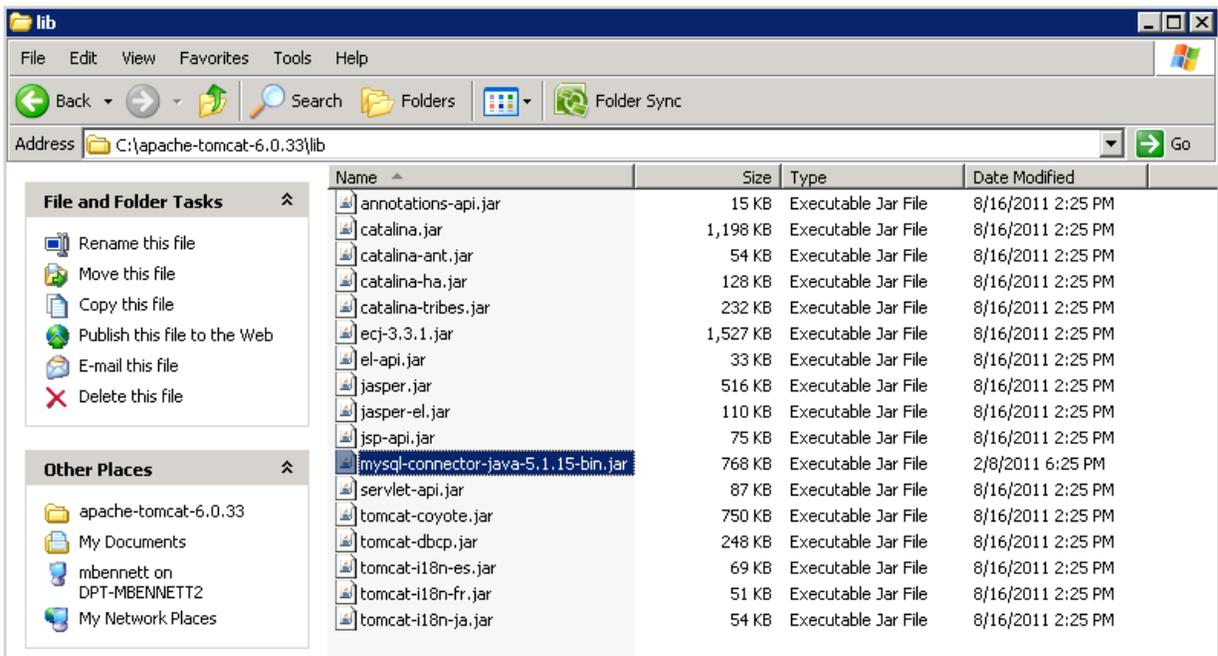
6. Edit Tomcat's \conf\Catalina\localhost\ace-am.xml configuration file with the following setting (using the previously set password in place of "YOUR_PASSWORD"):

```
<Resource auth="Container" driverClassName="com.mysql.jdbc.Driver"
maxActive="20" maxIdle="10" maxWait="-1" name="jdbc/aceamdb"
testOnBorrow="true" type="javax.sql.DataSource"
url="jdbc:mysql://localhost/aceam" username="aceam" validationQuery="SELECT 1"
password="YOUR_PASSWORD" />
```

7. Place a copy of the mysql-connector-java-5.1.XX-bin.jar in Tomcat's \lib directory:

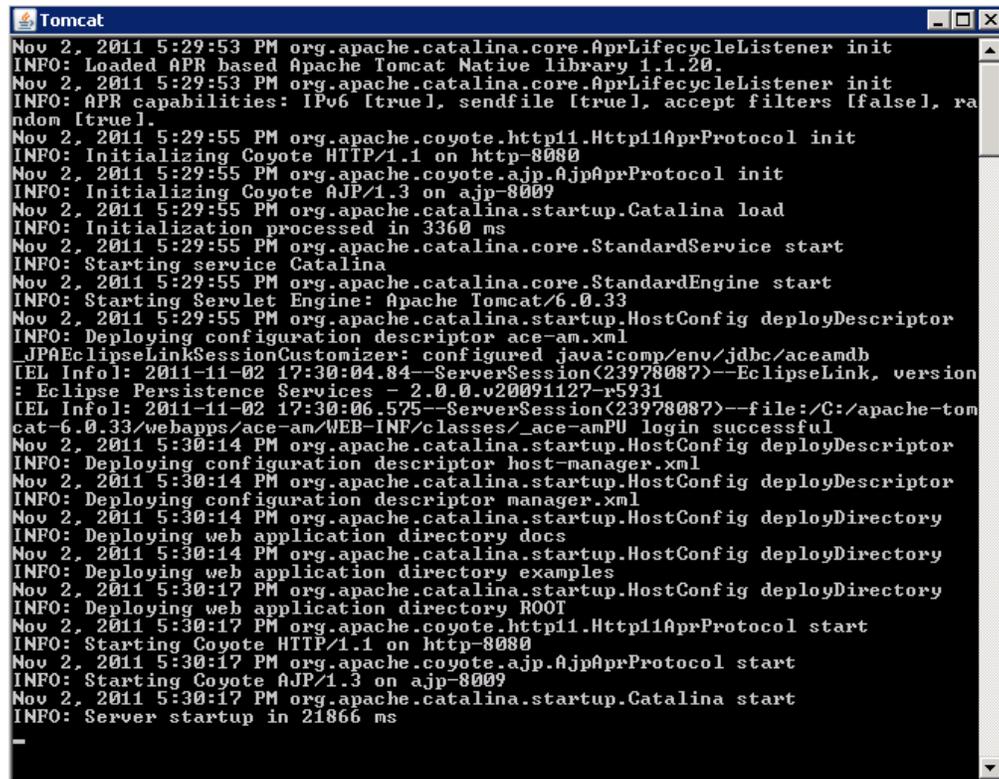
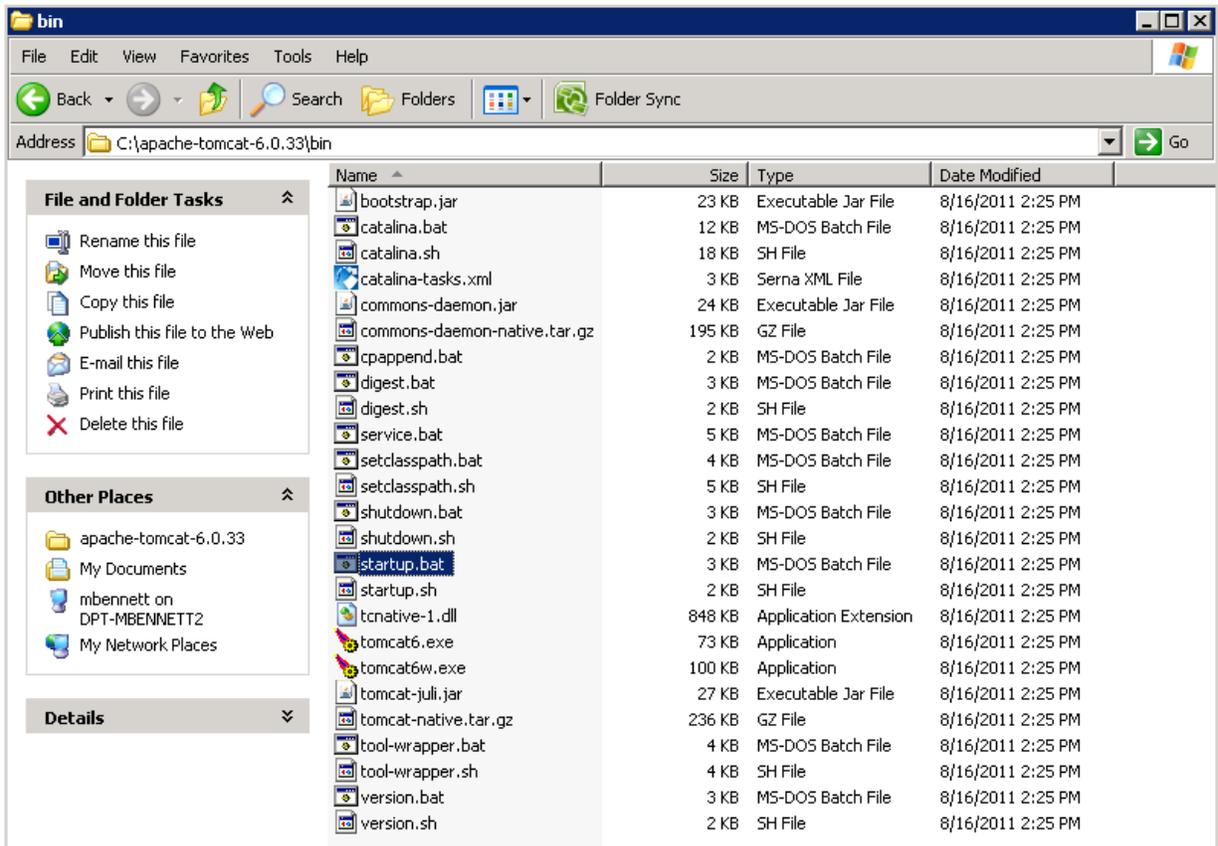


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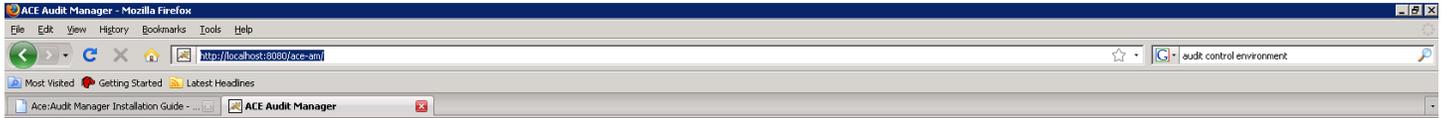


...paste

8. Start up Tomcat from \bin (double-click “startup.bat” for Win OS, or “startup.sh” for Unix OS)



9. Open a browser and navigate to <http://localhost:8080/ace-am/> The ACE Audit Manager should appear. To add or use an existing collection, enter username, “admin” password, “admin” at the prompt.



Status



Collection Name	Type	Total Files*	Last Audit	Next Audit
TEST: Puerto Rican Legal Docs	local	36	Oct 05 2011	Unknown
PAN_UCL	local	90754	Oct 27 2011	Unknown

Add Collection

- Audit in progress
 - Audit idle
 * - Total files and status not updated until after first sync.
Automated auditing is currently paused.

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Status Event Log Accounts



PAN_UCL x

Audit Status: Idle
 Last Complete Update: Thu Oct 27 05:41:37 EDT 2011
 Allow Outside Data Access: false
 Directory: \\Lib-staff\panucl
 Collection Type: local
 Digest Type: SHA-256
 Collection Size: 948.4 GB
 Audit Period: 7 Automated auditing is paused
 Total Monitored Files: 90754
 Total Errors: 0







 more...

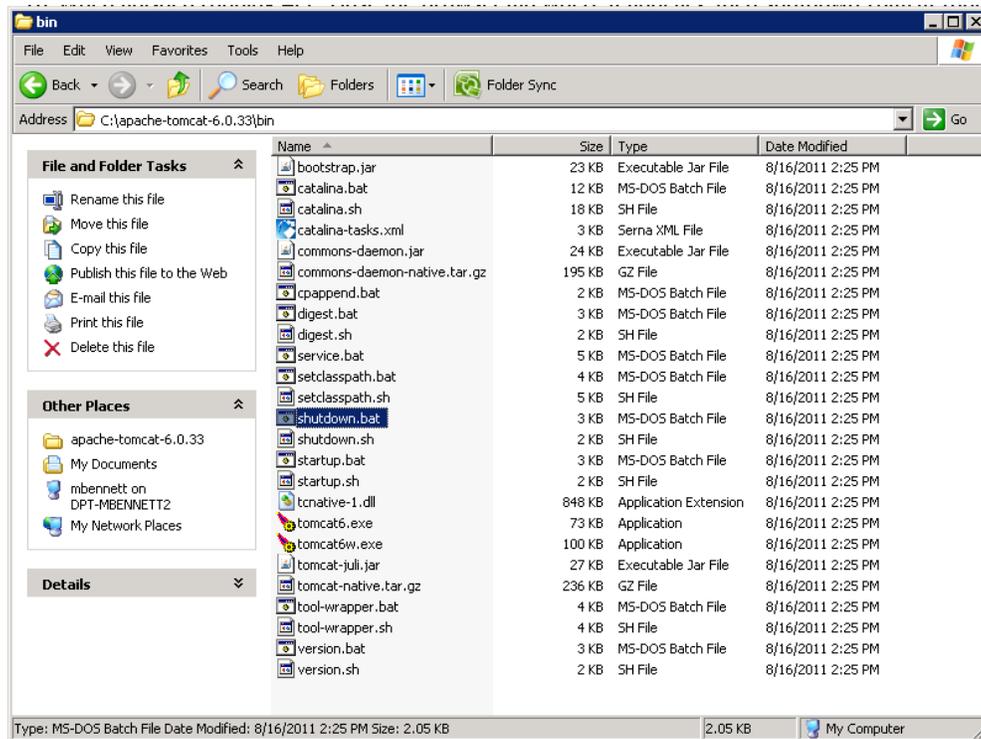
Collection Name	Type	Total Files*	Last Audit	Next Audit
TEST: Puerto Rican Legal Docs	local	36	Oct 05 2011	Unknown
PAN_UCL	local	90754	Oct 27 2011	Unknown

[Add Collection](#) [Enable Automated Auditing](#)

- Audit in progress
 - Audit idle
 * - Total files and status not updated until after first sync.
Automated auditing is currently paused.

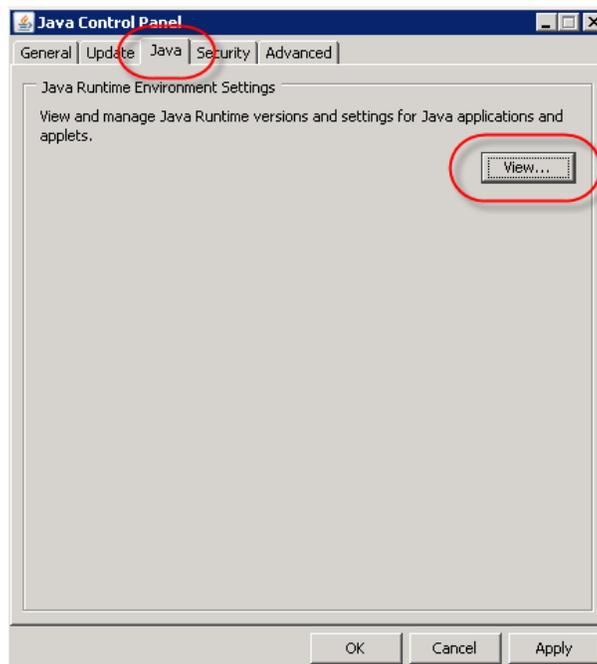
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10. When finished running ACE, close the browser tab where it appears, then shutdown Tomcat (double-click either shutdown.bat for Win OS or shutdown.sh for Unix OS):

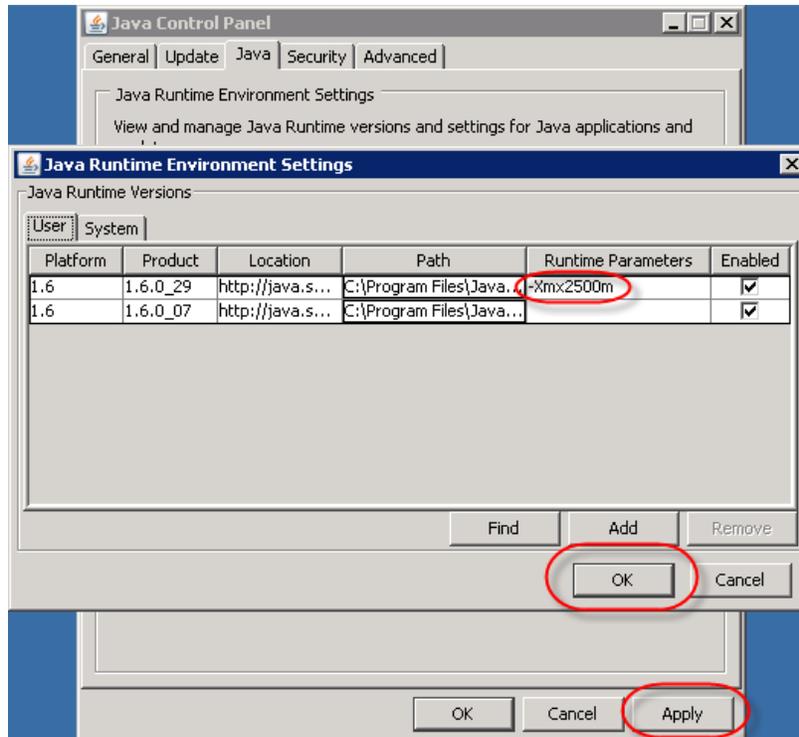


NOTES:

1) ACE can crash and throw “out of memory, Java heap space” error messages in the browser if not enough memory is allocated to the installation device’s Java Virtual Machine (JVM). Based upon testing, more than 2.5GB is recommended if the device can spare the dedicated allotment. On Windows-based devices, JVM memory can be set through the Java Control Panel:



Find the most recent Java version, double click on the 'Java Runtime Parameters' box, add the statement "-Xmx2500m" then hit the Enter key for a total of 2.5GB. Click OK, and then click Apply.



2) In order to create and store file hashes, ACE needs to read the entire bit stream of a given archived file. In turn, ACE performs most efficiently across high speed connections to a given archival file storage system. Based upon tests with roughly 91,000 files that take up 1TB of storage space, ACE can complete SHA-256 hashes in about 8-10 hours across a gigabit network. In comparison, these same hashes require more than 1 week of time to finish across a 10mbps network.

3) To take advantage of ACE's Integrity Management System (IMS), the device from which ACE is running needs Internet connectivity to the ACE home site at University of Maryland (UMD) where integrity tokens are created. These tokens are stored both at UMD and within the local ACE database.

4) One of ACE/IMS's unique characteristics is that it allows for the monitoring of not only archival files through created hashes but it can also monitor the integrity of the hashes themselves. Additionally this can be accomplished through third party audits.

5) See ACE's main page which is the best central source of the program's purpose, scope, and foundational technical description: <http://tinyurl.com/7ceews>