



Testing of Web Portals : A Path Where to Start and Where to End Your Testing And Prioritizing What to Test

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Abstract: This paper introduces a path to follow while testing a web portal to deliver it on time.

Keywords: Web Portals, Deploying WAR, Tomcat Web Application Manager, Deploying TAR file, Postgres Studio, Time Constraint, Automation testing, Functional Testing, GUI Testing, Usability Testing, Security Testing, Cross Browser Testing, Performance Testing

I. INTRODUCTION

Web Portal is a way to organize your business process over the Internet. Using Web Portals users can register themselves & can interact with concerned business organization. No more need to stand in queues for collecting & submitting the registration forms & going again & again to the offices for knowing status of their proposals (purpose for which registration was done), you can easily track the status of your application over the internet[1]. Web Portal can be of school, university, government or semi-government organization. Some government web portals are ESI (Electronic Standards of India, www.electronicstds.gov.in), ICMR (Indian Council of Medical Research, www.icmr.nic.in), and BASe (Basic Archival Solution for e-Courts, yet to be launched)

Now talking about testing, testing a web portal is sometimes very hectic & tedious job. You need to test number of processes present on number of logins & you get confused where to start, what to start, whether you should test a positive flow, negative flow or both, validations, masters (i.e. database created online), GUI, security, performance, each link, cross browser testing, etc., number of things to test & you have limited time.

While testing time is a biggest constraint that is needed to be kept in mind. You should always be completed with your testing on time by testing in a prioritize manner, i.e., giving priority what to test first.

When development team develops their web portals, they want them to put through functional testing & on further release of patches regression & functional testing are carried out in parallel[2].

When web portal is developed a WAR (Web Archive) File is deployed over the testing server. In some organizations, Tomcat Web Application Manager is used to deploy WAR file in testing environment.

Steps to deploy a WAR are shown here using snapshots.

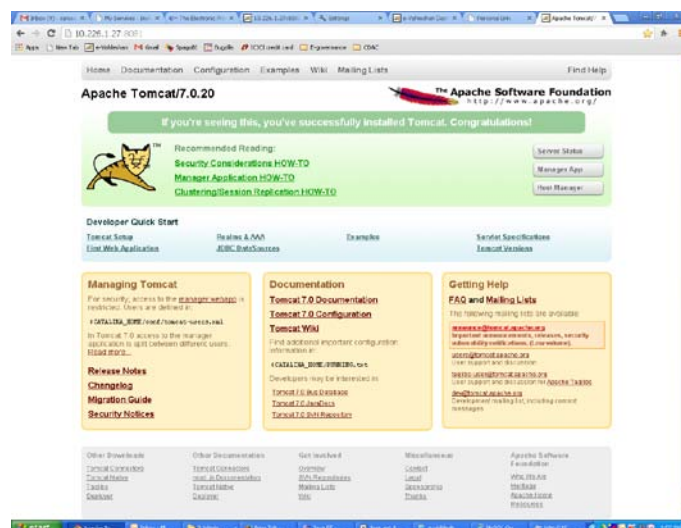


Figure 1: Opening Tomcat Web Application Manager

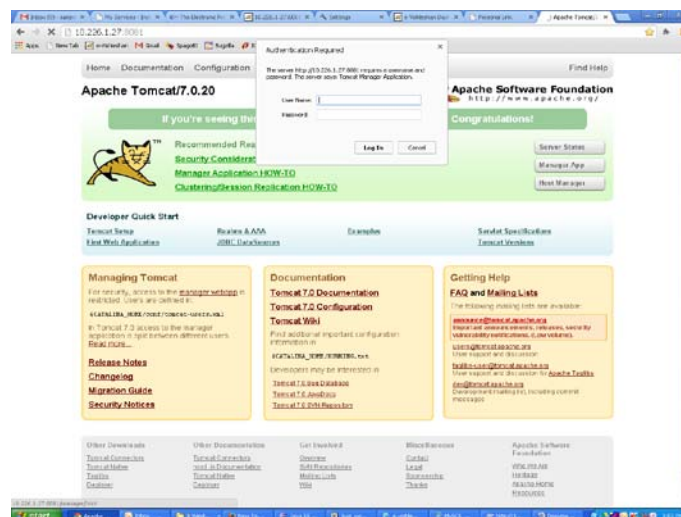


Figure 2: Entering credentials for deploying the WAR

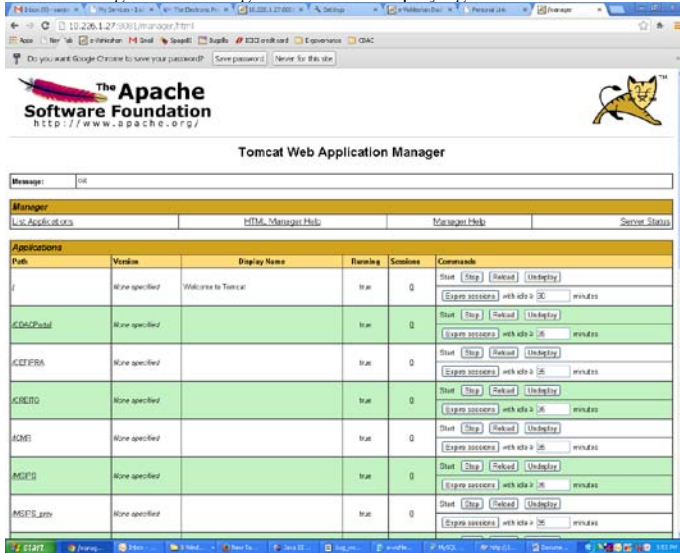


Figure 3: List of Applications already deployed

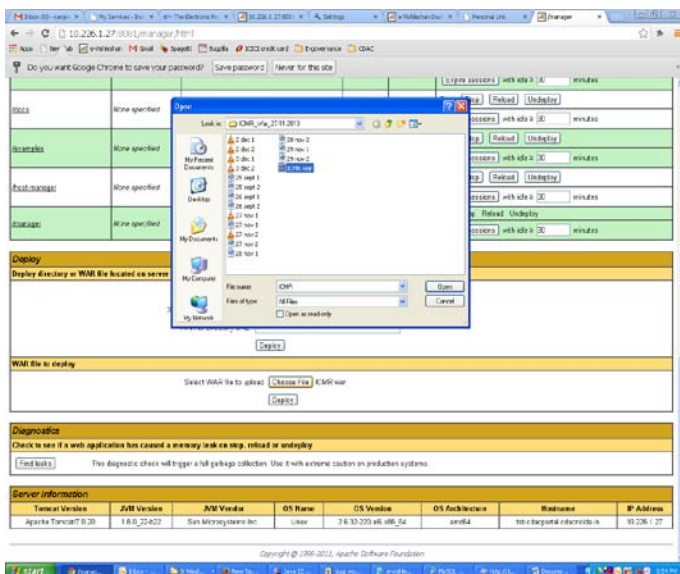


Figure 4: Browsing a WAR file

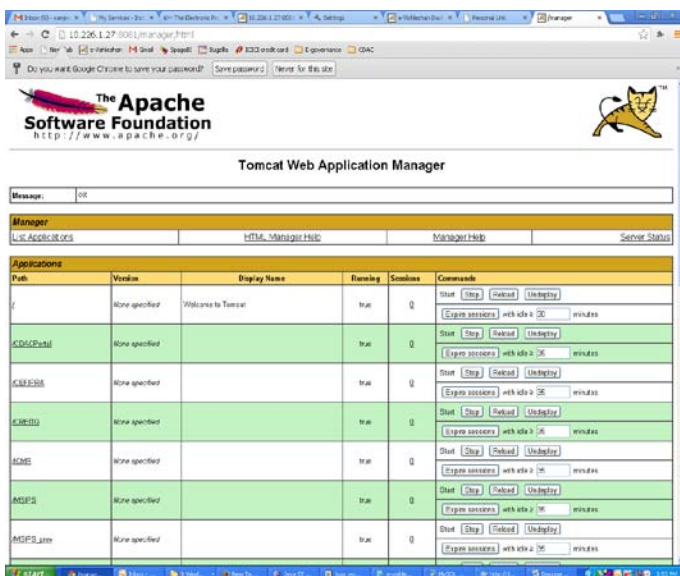


Figure 5: WAR successfully deployed with OK message

After WAR file has been deployed, TAR (Tape Archive) file is also deployed TAR file is a file consisting of database which is imported to the application to be tested by importing this TAR file on testing server. In some organizations Postgres Studio is used to import database on testing server.

Steps to import a TAR file are shown here using snapshots.

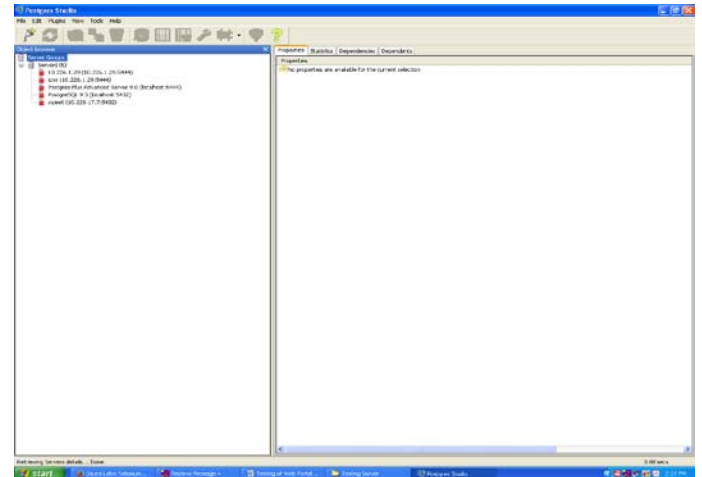


Figure 6: Opening Postgres Studio

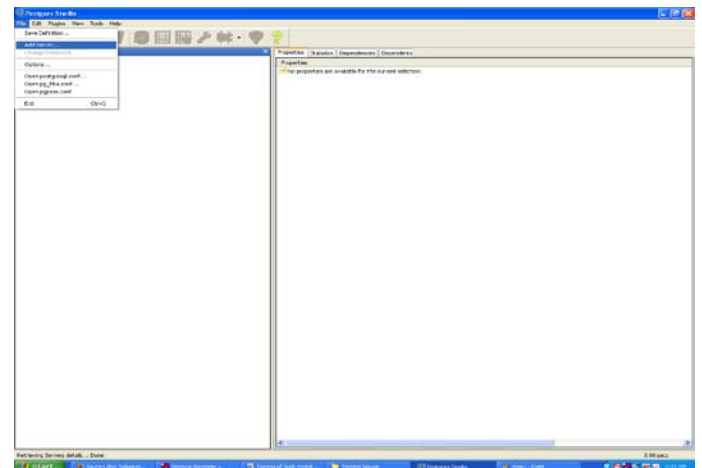


Figure 7: Adding the server

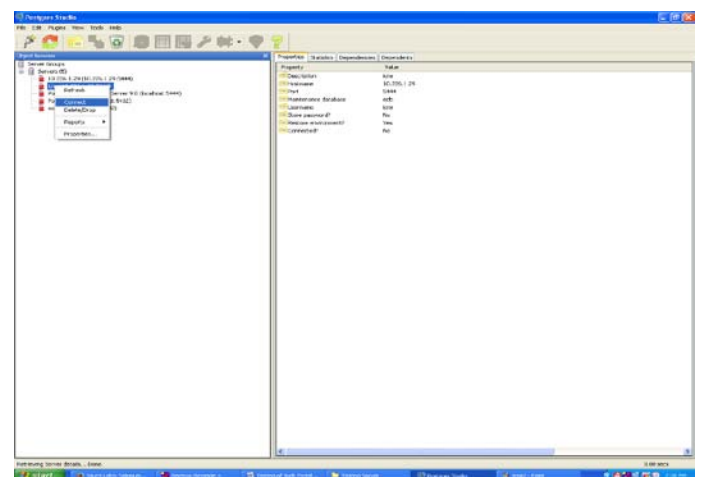


Figure 8: Once server is added connect the server

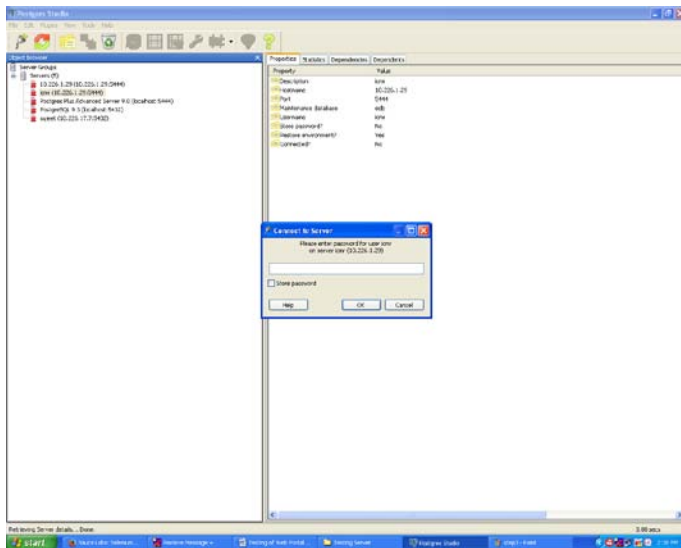


Figure 9: Enter credentials for connecting the server

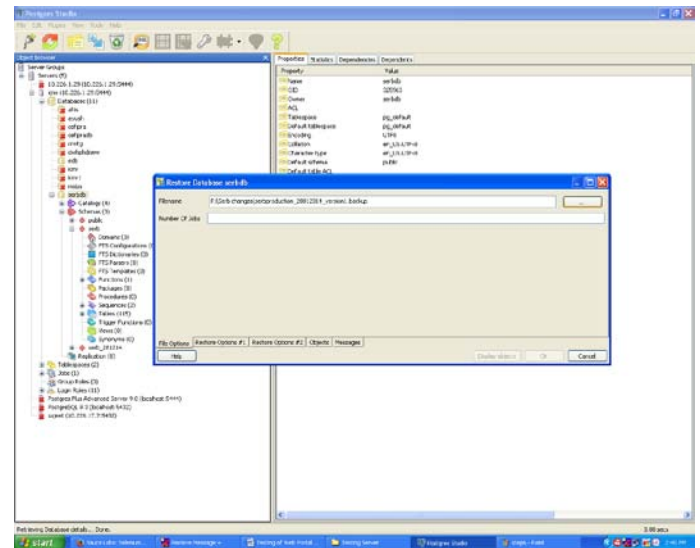


Figure 12: Browsing the TAR file

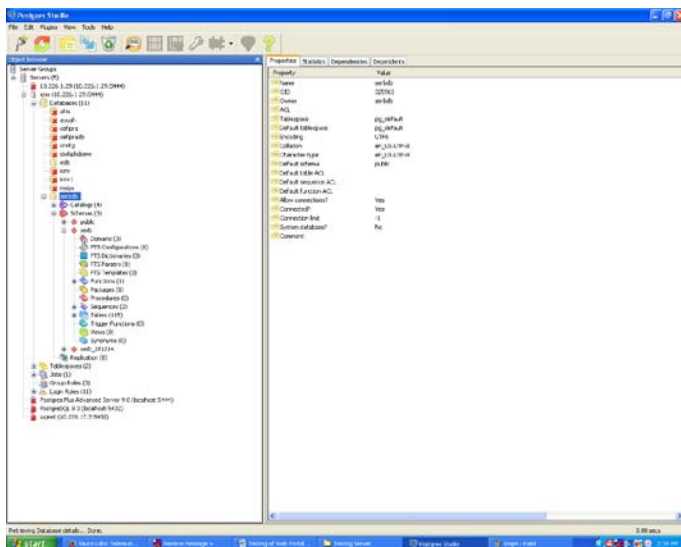


Figure 10: Adding schema to the application

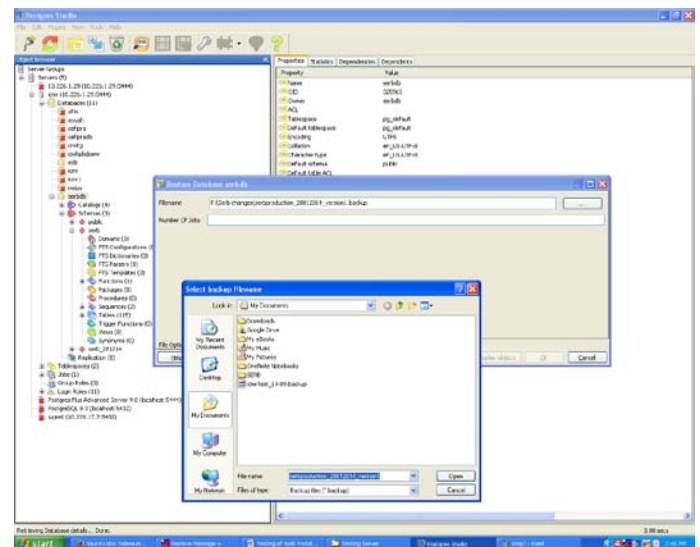


Figure 13: Selecting the TAR file

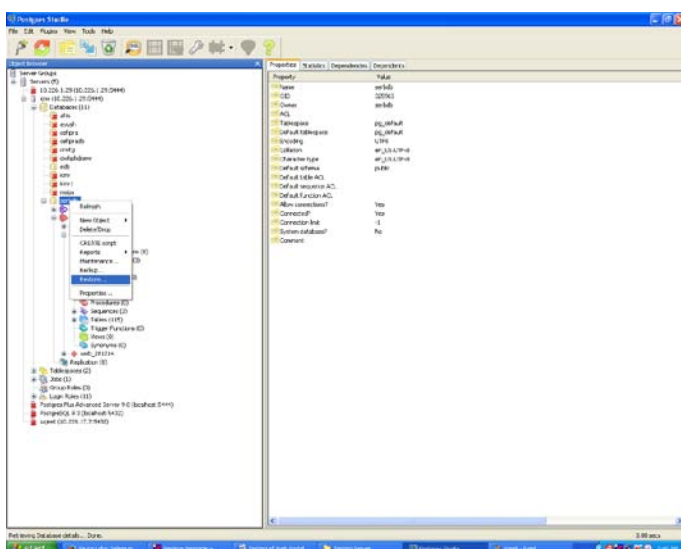


Figure 11: Clicking restore to browse the TAR file

Once TAR file is selected database log starts transferring.

When testing of a project is at its initial stage, for a quality testing we should have minimum three testers for a project, one for making test cases, one for executing them & last for testing as an end user without considering test cases so that scenarios left in test cases can be covered. Always remember single tester cannot test a web portal at its initial stage because at that time portals are not at all stable. Now while testing following testing should be considered: functionality, usability, browser compatibility, security, performance.

As we talk before, testing of web portal is very hectic & tedious & it becomes chaotic where to start & where to end so that we can complete our testing within a given time frame. Now look at how to do, priority should be given according to this series only [4]:

1. First of all we start with functional testing in which first we do positive testing (positive flow & positive validations) & then negative testing (negative flow & negative validations). We can do functional testing either manually or using automation testing. While automating your test, sometimes

it looks waste of time but on further release of WARs it reduces your job, i.e. work once on it & then let it do your work as many times you want. Some automation functional testing tools are TestComplete, Selenium, SilkTest, WinRunner, and IBM Rational Functional Tester.

2. When functional testing is complete, we move to User Interface testing, i.e. GUI Testing in which we check hyperlinks, tables, forms, frames, other user interfaces like text fields, checkboxes, radio buttons, menu etc.
3. Now after GUI testing, we come to Usability Testing where we check whether portal is fulfilling the user's specifications & expectations, is portal complete in itself & on the basis of our understanding we give our feedback to developer what he can put in his portal, i.e. we log a bug as an enhancement. In usability testing, our main aim is portal should be satisfactory to the client & its users.
4. Now, when we get sure that portal is functioning properly, look & feel is good, required enhancements has been logged, next turn is of security which is required to secure portal from various threats. The most basic step when starting security testing is login & logout & click on go back button of browser. User should not be able to access the last login. We also check for authentication, access control, SQL injection, etc. We can also check our web portal security by using some security automation tools like BurpSuite, HackBar, Watcher, etc.
5. When we are done with security testing next aim is Cross Browser testing. When web portal is developed, it is developed on a certain web browser like chrome, Mozilla, etc., but this is not hard & fast rule that user will run the application on same browser & there may be possibilities that some function of portals will malfunction on different web browser or may be GUI will not be displayed properly. We should always do cross browser testing after functional testing has been performed because it may confuse you whether fault is of functionality or compatibility. Doing cross browser testing is a very painful task, so you should always use cross browser testing tool. Some tools are

BrowserStack, Spoon Browser Sandbox, Browsershots, Browsera, CrossBrowserTesting etc. [3]

6. Now when we are fully satisfied that we have gone through all the checkpoints need to be tested, we move to Performance Testing. Performance testing is mostly required on the pages where multiple numbers of users interact simultaneously. Besides this, there are also some other pages like which requires downloading or opening a child window. You may observe the time taken to download or time taken to open a child window but how you can observe the performance where thousands of users interact, so you always need some tool while doing performance testing. Some of them are Apache JMeter, LoadRunner, Rational Performance Tester, etc.

Follow this series & your application will be tested on time and you won't confuse where to start & where to end. You can prioritize this series in same order & most priority test will be tested first & you will have less conflict with timing, developers & your seniors & portal tested will surely be a quality web portal.

II. CONCLUSION

To deliver a quality web portal on time, testing team should follow the sequence defined in this paper. When web portal is at its initial stage, three testers should carry out the testing: making test cases, executing test cases, & just running the application. Automation testing should also be used where it is reducing your burden on further release of WARs.

III. REFERENCES

- [1] http://engineering-inventions.blogspot.in/2010_11_01_archive.html/
- [2] <http://www.slideshare.net/rockden/web-portal-testing>
- [3] http://www.xmarks.com/topic/cross_browser_testing
- [4] <http://www.qms.cdacnoida.in>