Improving the Manageability of OSCAR

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www.csm.ornl.gov/Internships/abstracts/SelimaRollins.pdf

http:// oscar.openclustergroup.org

Abstract

Open Source Cluster Application Recourses (OSCAR) is a cluster distribution and toolkit, developed by the Open Cluster Group, intended for the installation, configuration, and operation of a high-performance computing (HPC) cluster. After OSCAR is installed, several testing scripts are executed. The purpose of the testing scripts are to ensure that the cluster was installed and configured properly. In the current release of OSCAR, there are several testing issues that should be addressed. The first is to isolate the testing framework from the batch queue system. The removal of this dependency will improve the manageability of the testing framework. A second issue is to improve the error reporting. Currently there is no system that reports why a test script failed. A third issue is to decrease the testing granularity to provide a more fine level of testing. To address these issues, the API test tool will be used as the new framework for the testing scripts. These scripts will be broken up into a finer granularity providing more manageable and independent modules. API test will then manage how and when the tests are run. This work will benefit all those installing a HPC cluster, and in particular, it will benefit those with large cluster installations, such as government research agencies.

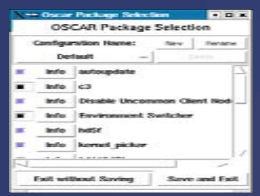
Research Methods

- Review and analyze testing scripts
- Determine interdependencies among testing scripts
- Evaluate API test tool as a replacement testing framework

Software/Operating Systems /Applications

- API test tool
- Linux – RedHat 9.0
- XML
- Perl
- Shell programming

Step 1 Start…



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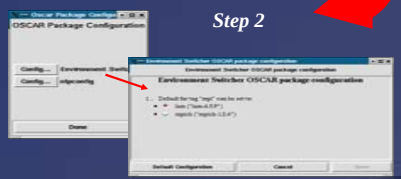

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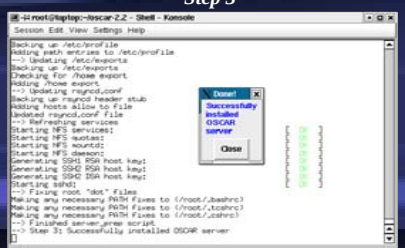

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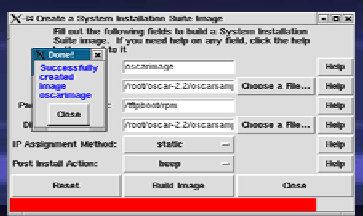

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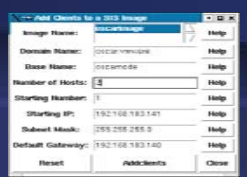

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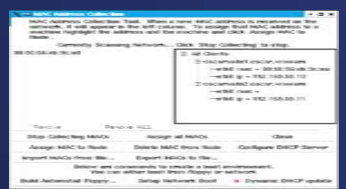
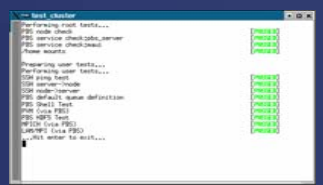


Step 7

Step 8 Finish!



Conclusions

- **OSCAR is a freely distributed cluster toolkit that could benefit from an improved testing framework**
- **API test tool looks promising for the new OSCAR testing framework**
- **Breaking the tests into small pieces and using the API test framework simplifies the tests and improves manageability**
- **My work included evaluating the current testing framework in order convert it into APItest framework**

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