

Championing CloudStack Development with Tools

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About Me

- ❖ Software Architect at ShapeBlue
- ❖ Specialise in...
 - ❖ 3rd party integrations and features
 - ❖ API, Auth and DB layer, SystemVMs and Virtual Router
 - ❖ KVM, Build system, Repository, tooling and automation etc.
 - ❖ Author: CloudMonkey, SAML2 plugin, API discovery, SystemVM building and exporting using VirtualBox etc.
- ❖ CloudStack contributor and committer since 2012
- ❖ B.Tech and M.Tech from IIT-BHU

About ShapeBlue

“ShapeBlue are expert builders of public & private clouds. They are the leading global Apache CloudStack integrator & consultancy”



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Scope of talk

- ❖ Not a talk on how to install or setup talk or about development, testing, release, documentation processes
- ❖ Focus on current set of tools used to develop, test, build, document and release CloudStack
- ❖ Discuss how and why to build tools
- ❖ Lots of demos, lots of discussion and fun

Why we build tools

- ❖ Existing ones are not good enough
- ❖ The developer in you just wants something working
- ❖ The hacker in you wants to hack something useful
- ❖ The artist in you wants to craft tool in a certain way
- ❖ The managers in you wants other to do all of above 😊

Tools: Documentation

- ❖ Getting started project Docs
- ❖ Install Docs, Admin Docs, Release Notes, API Docs, Cwiki
- ❖ Issue tracking: JIRA
- ❖ Sphinx and reStructuredText, readthedocs.org
- ❖ Git and Github PR
- ❖ Website: Apache CMS

Tools: Users and operation

- ❖ Mailing lists
users@cloudstack.apache.org
users-cn@cloudstack.apache.org
- ❖ Bug reporting: JIRA
- ❖ CloudStack RPM/DEB hosting
- ❖ Automation: PXE, Ansible (CSForge, Peppercorn), Chef, Puppet etc.
- ❖ Demo: CloudMonkey and tricks

Tools: Development

- ❖ Development platform: Windows, Linux, OSX
- ❖ Editors: IntelliJ, Eclipse, Sublime Text, vim, emacs etc.
- ❖ Languages: Java, Python, Shell script, SQL
- ❖ Revision control system: Git
- ❖ Building: Maven
- ❖ Database: MySQL, DatabaseCreator
- ❖ Misc: Tomcat/Jetty, JDK, mkisofs, uuid-gen

Demo: Development Tools

- ❖ Zsh (Bash)
- ❖ IntelliJ (Sublime Text, vim)
- ❖ Java, Maven
- ❖ MySQL client and workbench
- ❖ Python/iPython, pip
- ❖ Git
- ❖ Tricks

Tools: Searching and Debugging

- ❖ Java: Remote port (Maven) debugger (jdb) and logs
- ❖ Python: Logs (and pdb)
- ❖ Shell Scripts: set -x logging
- ❖ UI: Chrome and Firefox Inspectors
- ❖ Misc: Git, grep

Demo: Searching and Debugging

- ❖ Logs
- ❖ Searching codebase – Git (commits, branches), grep, find
- ❖ Java – IntelliJ Remote debugging
- ❖ Python – Logs and pdb
- ❖ Shell Scripts – set -x, tricks
- ❖ CloudStack UI – Jetty tricks, Chrome/Firefox inspector

Tools: Building and Testing

- ❖ Simulator
- ❖ DevCloud (KVM/Xen)
- ❖ Physical Hosts (KVM, Xen, VMWare)
- ❖ Unit tests and Integration tests using Marvin
- ❖ CI: Jenkins and TravisCI
- ❖ Misc: RAT, FindBugs, Coverity
- ❖ Vagrant and veewee for SystemVM template building
- ❖ Automation: PXE, Ansible, Puppet, Chef etc.
- ❖ Building and hosting Deb/Rpm repository
- ❖ User platform: CentOS/RHEL/Fedora and Debian/Ubuntu

Demo: Building and testing

- ❖ Maven building, unit tests
- ❖ Simulator
- ❖ Travis CI: Smoke (integration) tests
- ❖ Vagrant, veewee, SystemVM templates
- ❖ Jenkins: Building, testing, packaging
- ❖ DevCloud (KVM/Xen)
- ❖ Ansible and Peppercorn

Tools: Discussion and Contribution

- ❖ Mailing lists and IRC meetings
- ❖ Issue tracking with JIRA
- ❖ Feature specification and documentation on Cwiki
- ❖ ReviewBoard and rb-tools
- ❖ Github PR

Thank You

Q&A