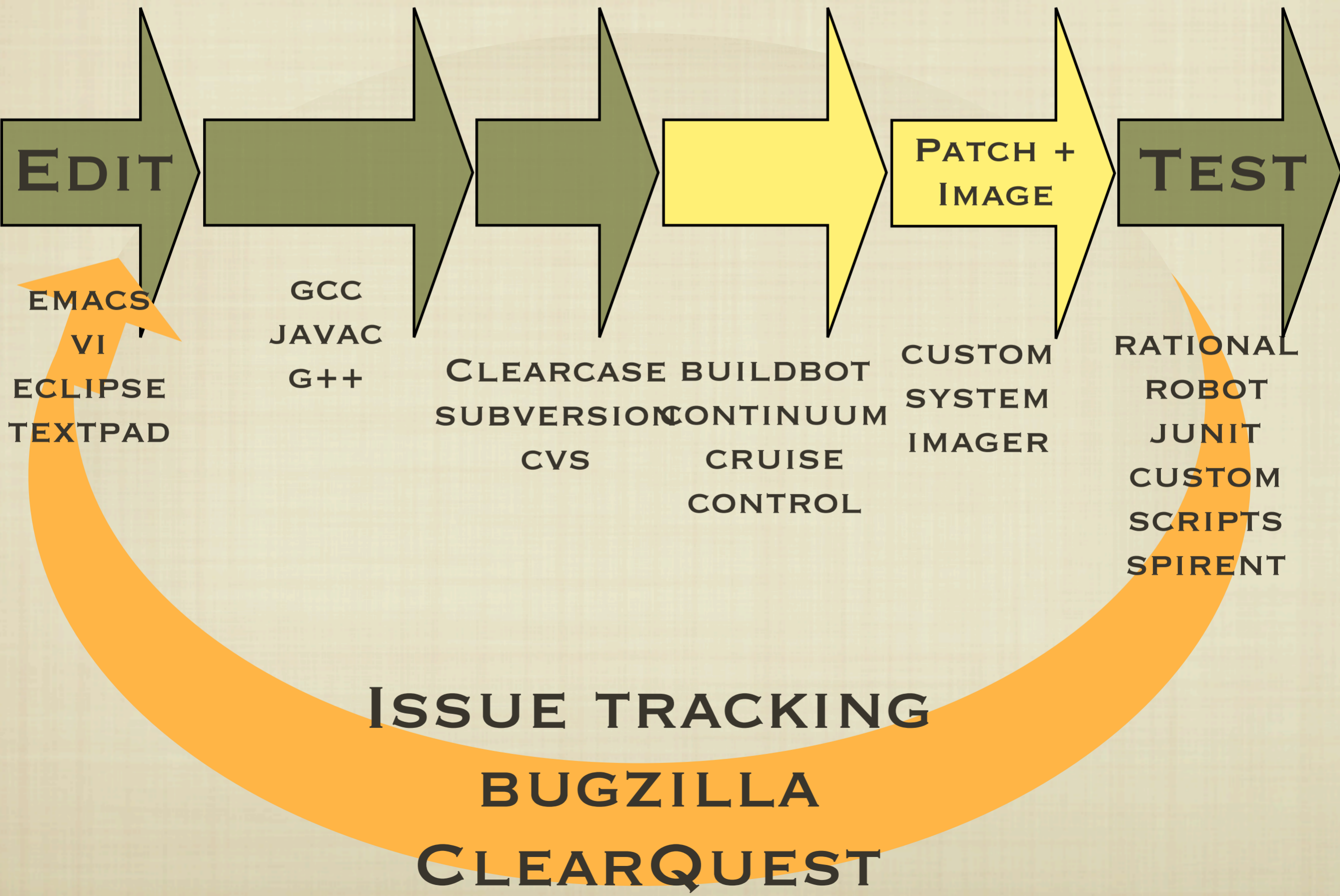


# BUILD AND RELEASE

TODD JACKSON  
8E6 TECHNOLOGIES  
[TJACKSON@8E6.COM](mailto:TJACKSON@8E6.COM)

# DEVELOPMENT



# RELEASE

- **AUTOMATED BUILD TOOLS**
- **IMAGING TOOLS FOR QUALITY ASSURANCE**
- **PRODUCTION IMAGING**
- **PATCH INSTALLATION TOOLS**
- **PATCH DISTRIBUTION MECHANISM**

# BUILDING

- THE “HEARTBEAT” OF RELEASE ENGINEERING
- ESSENTIAL FEATURES
  - TIME BASED SCHEDULING OF BUILDS
  - ON-DEMAND BUILDS
  - TRIGGERED BUILDS
  - AUTOMATIC NOTIFICATION OF BUILD

# BUILDING

- **ESSENTIAL FEATURES, CONTINUED**
- **MULTIPLE LANGUAGE SUPPORT**
  - **AT LEAST: C, C++, JAVA**
- **SUPPORT FOR AUTOMATED UNIT TESTING**
- **MULTIPLE SIMULTANEOUS BUILDS ON DIFFERENT PLATFORMS / TOOLCHAINS**

# BUILDING

- OPEN SOURCE TOOLS +  
CUSTOMIZATIONS VERSUS  
COMMERCIAL TOOLS, PROBABLY WITH  
CUSTOMIZATIONS
- APACHE
- CONTINUUM
- GUMP

# BUILDING

■ CRUISE CONTROL

■ HUDSON

■ LUNTBUILD

■ VULCAN

■ COMMERCIAL TOOLS

# BUILDING

- **BUILDBOT**

- **INTERFACES WITH CVS, SVN,  
PERFORCE, ARCH, BAZAAR, BZR,  
DARCS, MERCURIAL**

- **FLEXIBILITY IN BUILD PROCESS, NOT  
LANGUAGE SPECIFIC**

- **NOTIFICATIONS OF BUILD STATUS**

- **BUILD-MASTER, ONE OR MORE  
BUILD-SLAVES**

# BUILDING

- **BUILDBOT SOFTWARE REQUIREMENTS**
- **PYTHON 2.4 OR 2.5**
- **TWISTED 2.0 OR LATER**
- **BUILDMASTER INITIATES BUILDS, CONTROLS SLAVES.**
- **SLAVES ACCESS SOURCE REPOSITORY INDEPENDENTLY, SOURCE IS NOT SENT FROM MASTER**

# BUILDING

- **BUILDBOT CONFIGURATION**
  - **MANUALLY EDITED CONFIGURATION FILE**
    - **PROJECT**
    - **CHANGE SOURCES**
    - **SCHEDULERS**
    - **BUILDSLAVES**
    - **BUILDERS**
    - **STATUS TARGETS**

# BUILDING

■ **BUILDBOT DEMO**

# IMAGING

- **“FULL SYSTEM” IMAGING TOOLS**
  - **MONDO RESCUE**
  - **MKCDREC**
  - **PARTIMAGE + SYSTEM RESCUE CD**
  - **SYSTEMIMAGER**
  - **GHOST**
  - **G4U / G4L**

# IMAGING

- **SYSTEMIMAGER**

- **PERL**

- **PXE BOOT + BUSYBOX**

- **IMAGES STORED AS DIRECTORY TREE,  
NOT 'BLOBS'**

- **SYSTEMCONFIGURATOR**

# IMAGING

- **SYSTEMIMAGER, CONTINUED**
- **SUPPORTS RPM, DEB BASED DISTRIBUTIONS, CAN RECONFIGURE SYSTEM DURING RESTORE**
- **SUPPORTS CUSTOM KERNELS FOR PXE BOOT**
- **TRANSPORTS**
  - **RSYNC, MULTICAST, BITTORRENT**

# IMAGING

- **SI\_PREPARECLIENT STARTS RSYNC SERVER ON SYSTEM TO BE IMAGED**
- **SI\_GETIMAGE ON IMAGE SERVER COPIES IMAGE FROM CLIENT, CREATES AUTOINSTALL SETUP FOR NEW IMAGE**
- **PERL CODE BUILDS AUTOINSTALL SCRIPTS IN CONJUNCTION WITH /ETC/SYSTEMIMAGER/AUTOINSTALLSCRIPT.TEMPLATE**

# IMAGING

■ SYSTEMIMAGER DEMO

# PATCHING

- **TOP 7 PATCHING MISTEAKS,  
ACCORDING TO INFORMATION WEEK**
- **NOT TESTING THE PATCH PRIOR TO  
ROLLOUT**
- **NOT HAVING A ROLLBACK METHOD**
- **KILLING THE NETWORK DURING  
ROLLOUT**
- **'REBOOT REQUIRED' DURING**

# PATCHING

- **PATCHING MISTEAKS, CONTINUED**
- **MISSED PATCHES, INSUFFICIENT  
DEPENDENCY CHECKING**
- **NO PATCH AUDIT TRAIL**
- **NO FORMALIZED PATCH PROCESS**

# PATCHING

- PROPRIETARY DOWNLOAD AND INSTALLATION TOOLS
- LVS LOAD BALANCING FOR PATCH DOWNLOAD SERVERS
- AMAZON EC2 FOR LARGE PATCH DISTRIBUTIONS

# SYSTEM

- HEALTHCHECK PROCESS “PHONES HOME” DAILY
- TRANSMITTED INFORMATION INCLUDES
  - SYSTEM SERIAL NUMBER + UUID
  - SMART DISK STATUS
  - FILESYSTEM UTILIZATION
  - APPLICATION STATUS AND VERSION
  - NETWORK INTERFACE STATUS (ERRORS)

# REFERENCES

- HTTP://  
CONFLUENCE.PUBLIC.THUGHTW  
ORKS.ORG/DISPLAY/CC/CI  
+FEATURE+MATRIX

■ **APACHE SOFTWARE HTTP://  
WWW.APACHE.ORG**

■ **BUILDBOT HTTP://  
WWW.BUILDBOT.NET**

■ **SYSTEMIMAGER HTTP://  
WWW.SYSTEMIMAGER.ORG**

■ **CRUISE CONTROL**  
**CRUISECONTROL.SOURCEFORGE.**  
**NET**

■ **HUDSON HUDSON.DEV.JAVA.NET**

■ **LUNTBUILD**  
**LUNTBUILD.JAVAFORGE.COM**

■ **VULCAN CODE.GOOGLE.COM/P/**  
**VULCAN/**

■ **TWISTED**

[WWW.TWISTEDMATRIX.COM](http://WWW.TWISTEDMATRIX.COM)

■ **SYSTEM RESCUE CD**

[WWW.SYSRESCD.ORG](http://WWW.SYSRESCD.ORG)

■ **PARTIMAGE** [WWW.PARTIMAGE.ORG](http://WWW.PARTIMAGE.ORG)

■ **MONDO RESCUE**

[WWW.MONDORESCUE.ORG](http://WWW.MONDORESCUE.ORG)

■ **PXEKNIFE NET BOOTABLE  
DIAGNOSTICS HTTP://  
PXEKNIFE.EREBOR.ORG/**

■ **SYSLINUX PXELINUX AND  
MENU.C32 CONSOLE NETBOOT  
MENU HTTP://  
SYSLINUX.ZYTOR.COM/**