Build Env.
ANT & CruiseControl

200910793 임민우 / 200911388 박미관 / 200911412 이영준

Contents

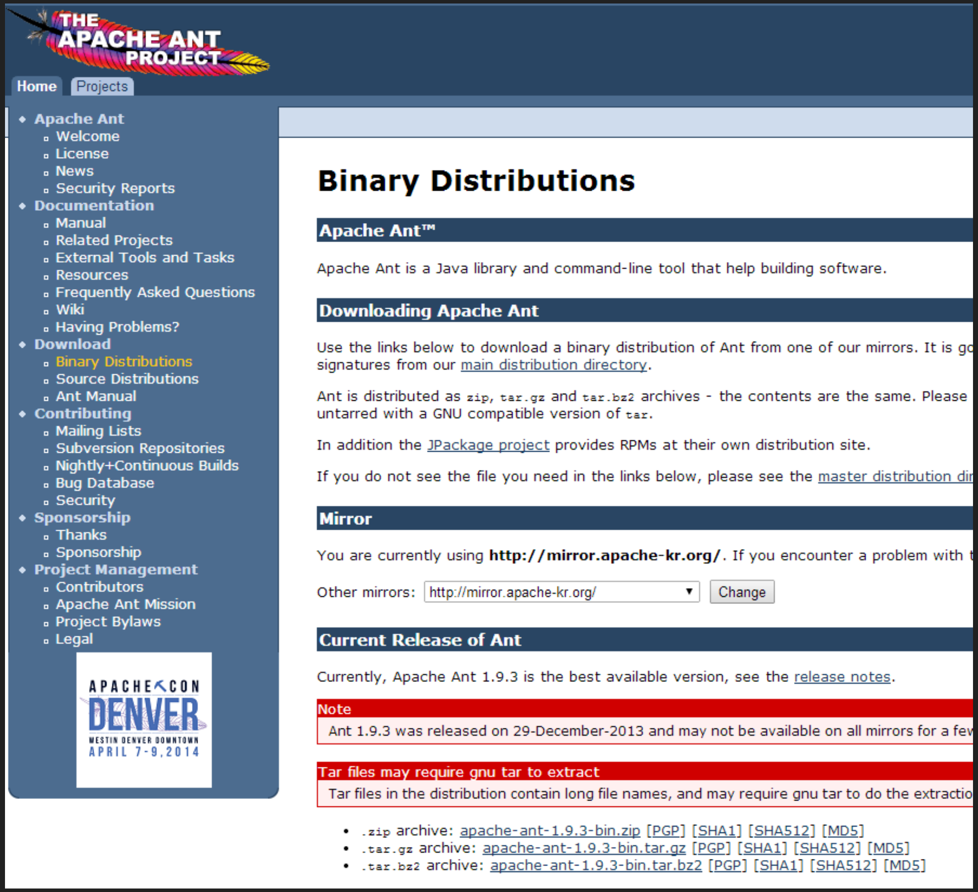
- ANT
- CruiseControl

ANT

- ANT(Another Neat Tool)
    1. Java Build Tool
    2. Using XML scheme for simplicity
    3. Comparison with previous Make compilation method
    4. Close with Junit testing tool

ANT

- Ant Installation
  1. Apache Distribution
  2. http://ant.apache.org for linux
  3. Basically, ANT is available after installation Eclipse. But, need to know how to install ANT in linux env.
  4. Download and Extract it.



Binary Distributions

Apache Ant™

Apache Ant is a Java library and command-line tool that help building software.

Downloading Apache Ant

Use the links below to download a binary distribution of Ant from one of our mirrors. It is go signatures from our main distribution directory.

Ant is distributed as `zip`, `tar.gz` and `tar.bz2` archives - the contents are the same. Please untarred with a GNU compatible version of `tar`.

In addition the JPackage project provides RPMs at their own distribution site.

If you do not see the file you need in the links below, please see the master distribution dir

Mirror

You are currently using **http://mirror.apache-kr.org/**. If you encounter a problem with t

Other mirrors: http://mirror.apache-kr.org/ ▾ Change

Current Release of Ant

Currently, Apache Ant 1.9.3 is the best available version, see the release notes.

Note

Ant 1.9.3 was released on 29-December-2013 and may not be available on all mirrors for a few

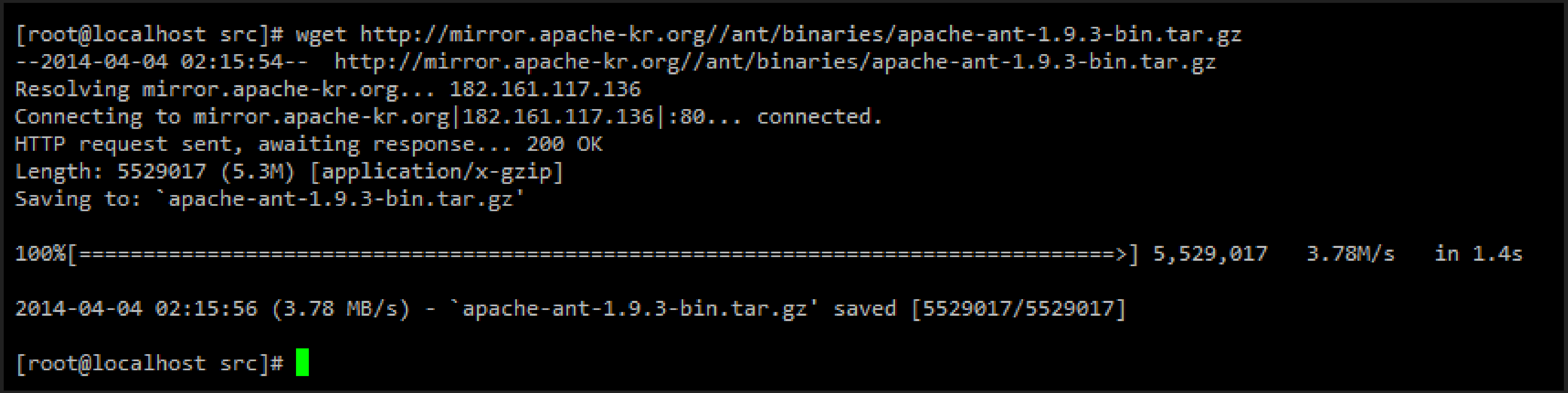
Tar files may require gnu tar to extract

Tar files in the distribution contain long file names, and may require gnu tar to do the extractio

- `.zip` archive: apache-ant-1.9.3-bin.zip [PGP] [SHA1] [SHA512] [MD5]
- `.tar.gz` archive: apache-ant-1.9.3-bin.tar.gz [PGP] [SHA1] [SHA512] [MD5]
- `.tar.bz2` archive: apache-ant-1.9.3-bin.tar.bz2 [PGP] [SHA1] [SHA512] [MD5]

ANT

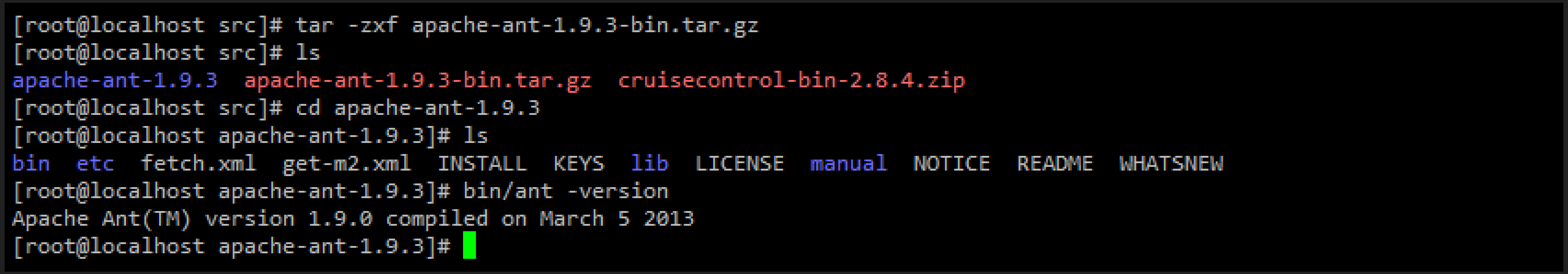
- Ant Installation



```
[root@localhost src]# wget http://mirror.apache-kr.org//ant/binaries/apache-ant-1.9.3-bin.tar.gz
--2014-04-04 02:15:54--  http://mirror.apache-kr.org//ant/binaries/apache-ant-1.9.3-bin.tar.gz
Resolving mirror.apache-kr.org... 182.161.117.136
Connecting to mirror.apache-kr.org|182.161.117.136|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 5529017 (5.3M) [application/x-gzip]
Saving to: `apache-ant-1.9.3-bin.tar.gz'

100%[=================================================================================>] 5,529,017   3.78M/s   in 1.4s

2014-04-04 02:15:56 (3.78 MB/s) - `apache-ant-1.9.3-bin.tar.gz' saved [5529017/5529017]

[root@localhost src]# 
```

ANT

- Ant Installation
  1. Surely we can set the PATH environment variable, but we just keep it away. Because we just want to know how to handle and use ANT build tool.
  2. Now, we get ready for using ANT.



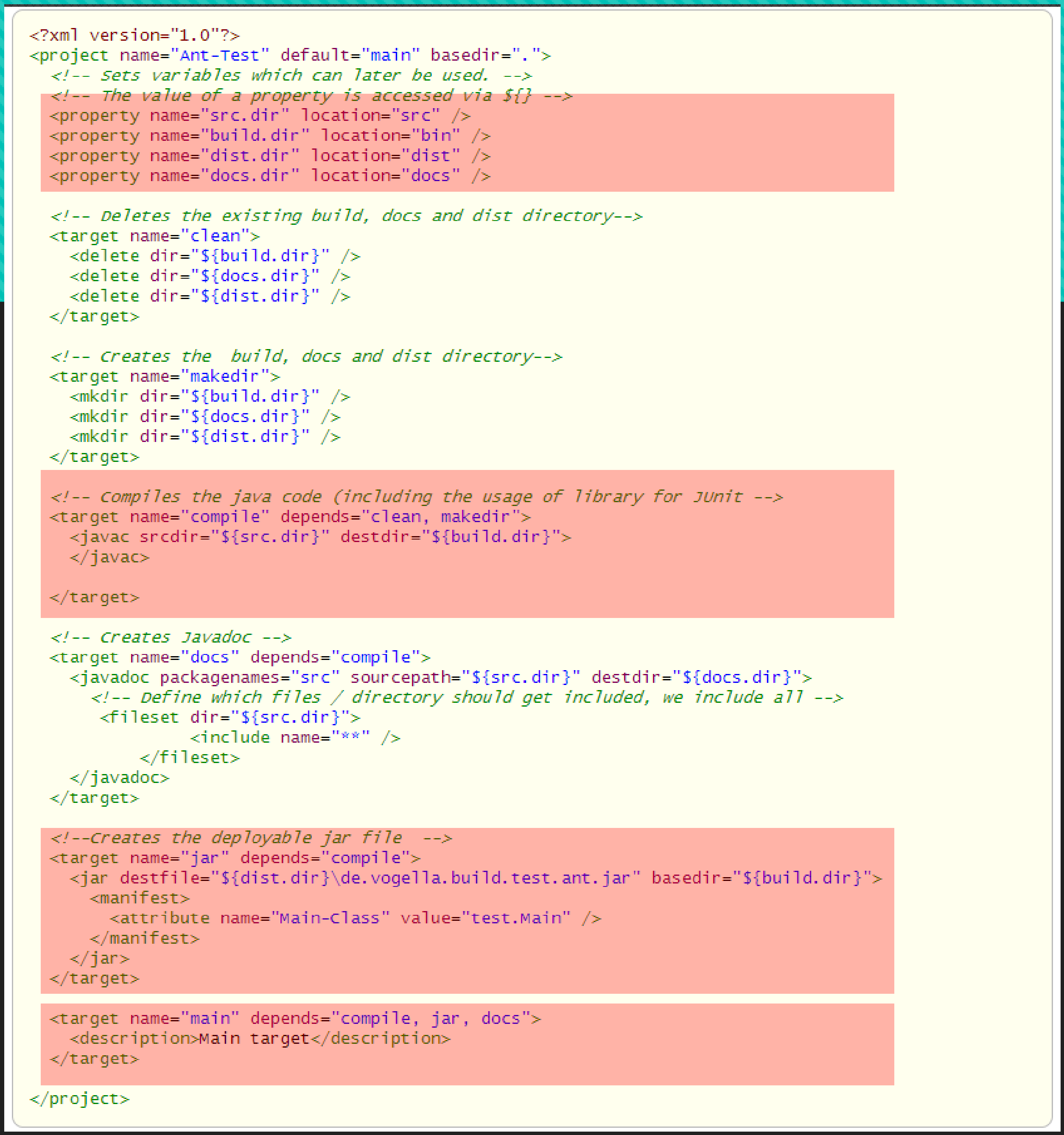
```
[root@localhost src]# tar -zxf apache-ant-1.9.3-bin.tar.gz
[root@localhost src]# ls
apache-ant-1.9.3  apache-ant-1.9.3-bin.tar.gz  cruisecontrol-bin-2.8.4.zip
[root@localhost src]# cd apache-ant-1.9.3
[root@localhost apache-ant-1.9.3]# ls
bin  etc  fetch.xml  get-m2.xml  INSTALL  KEYS  lib  LICENSE  manual  NOTICE  README  WHATSNEW
[root@localhost apache-ant-1.9.3]# bin/ant -version
Apache Ant(TM) version 1.9.0 compiled on March 5 2013
[root@localhost apache-ant-1.9.3]#
```

ANT

- Build.xml
  1. It determines how to build a Java project such as sequence, action, location, etc.
  2. Must write build.xml in project top-most location.
  3. Command “ant” is only working with build.xml.
  4. If we want to build a Java project, just do “**ant**”

ANT

- Build.xml
  1. Project > default :
     default target name
  2. Property :
     Variable with key and value
     Using by ${name}
  3. Target :
     Commonly, consists of compile, clean, jar, main, etc.
     Just like Makefile in GCC(all, clean, etc)
  4. Target > depends :
     make an rule that it depends on other target build job



```
<?xml version="1.0"?>
<project name="Ant-Test" default="main" basedir=".">
  <!-- Sets variables which can later be used. -->
  <!-- The value of a property is accessed via ${} -->
  <property name="src.dir" location="src" />
  <property name="build.dir" location="bin" />
  <property name="dist.dir" location="dist" />
  <property name="docs.dir" location="docs" />

  <!-- Deletes the existing build, docs and dist directory-->
  <target name="clean">
    <delete dir="${build.dir}" />
    <delete dir="${docs.dir}" />
    <delete dir="${dist.dir}" />
  </target>

  <!-- Creates the  build, docs and dist directory-->
  <target name="makedir">
    <mkdir dir="${build.dir}" />
    <mkdir dir="${docs.dir}" />
    <mkdir dir="${dist.dir}" />
  </target>

  <!-- Compiles the java code (including the usage of library for JUnit -->
  <target name="compile" depends="clean, makedir">
    <javac srcdir="${src.dir}" destdir="${build.dir}">
    </javac>

  </target>

  <!-- Creates Javadoc -->
  <target name="docs" depends="compile">
    <javadoc packagenames="src" sourcepath="${src.dir}" destdir="${docs.dir}">
      <!-- Define which files / directory should get included, we include all -->
       <fileset dir="${src.dir}">
                <include name="**" />
           </fileset>
    </javadoc>
  </target>

  <!--Creates the deployable jar file  -->
  <target name="jar" depends="compile">
    <jar destfile="${dist.dir}\de.vogella.build.test.ant.jar" basedir="${build.dir}">
      <manifest>
        <attribute name="Main-Class" value="test.Main" />
      </manifest>
    </jar>
  </target>

  <target name="main" depends="compile, jar, docs">
    <description>Main target</description>
  </target>

</project>
```

ANT

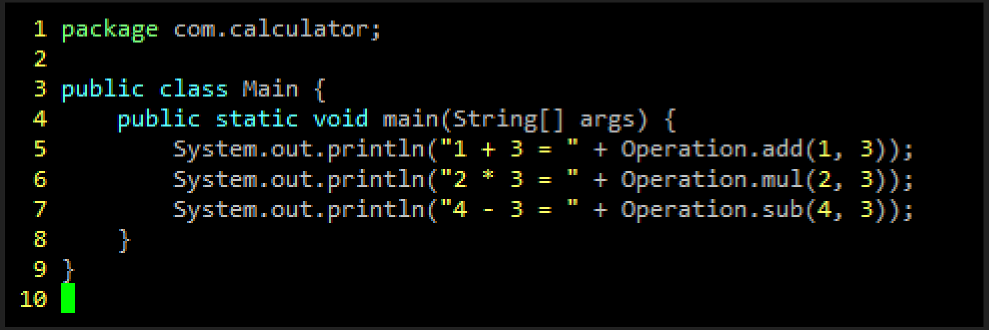
- Build.xml

Target
Typically, it has 7 possible tasks at least.

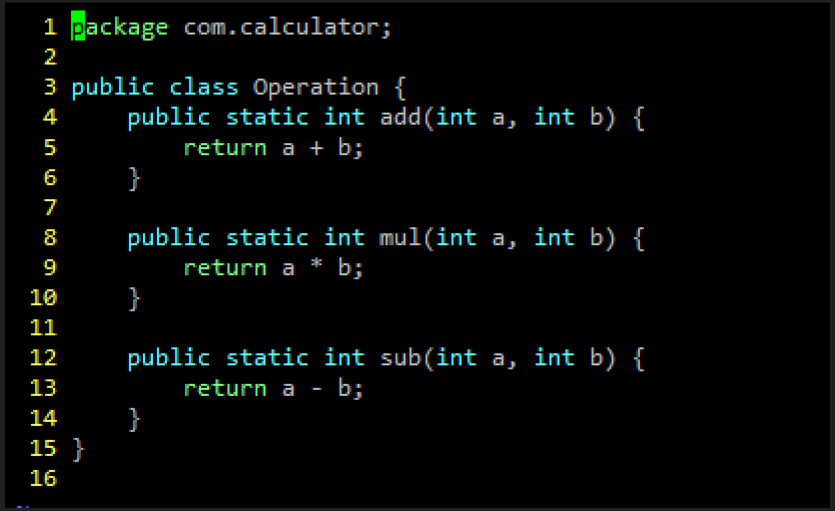
Property: Variable with key and value. Using by ${name}
mkdir: Make a directory. Given with "dir"
copy: Copy file. Given with "file", "tofile"
javac: Using for compilation only old-version java files. Given with "srcdir", "destdir", etc
jar: Package project into jar file
javadoc: Make a javadoc set
delete: Delete file or directory

ANT

- Ant Example With Java Project in Linux: **Calculator**
  1. Directory Architecture
     build.xml (same with previous slide's)
     src/com/calculator/Main.java
     src/com/calculator/Operation.java



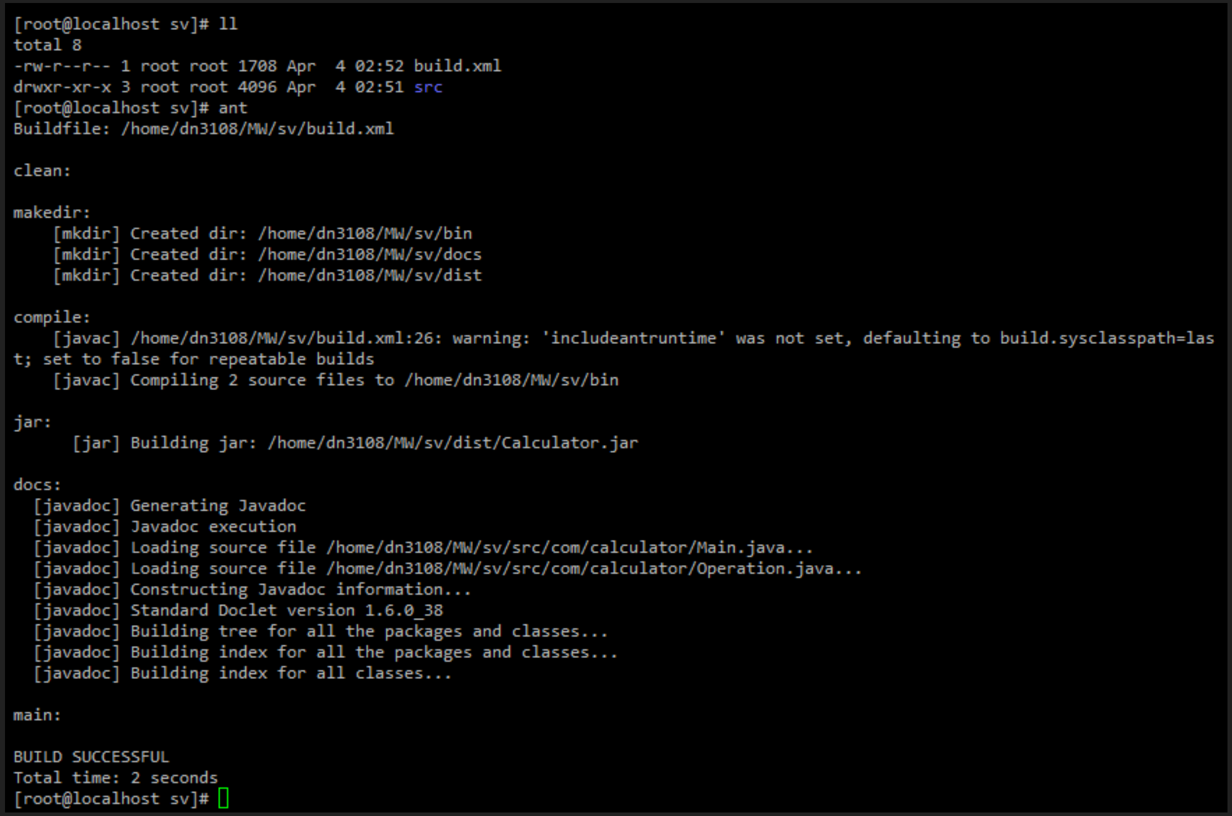
```java
package com.calculator;

public class Main {
    public static void main(String[] args) {
        System.out.println("1 + 3 = " + Operation.add(1, 3));
        System.out.println("2 * 3 = " + Operation.mul(2, 3));
        System.out.println("4 - 3 = " + Operation.sub(4, 3));
    }
}

```



```java
package com.calculator;

public class Operation {
    public static int add(int a, int b) {
        return a + b;
    }

    public static int mul(int a, int b) {
        return a * b;
    }

    public static int sub(int a, int b) {
        return a - b;
    }
}

```

ANT

- Ant Example With Java Project in Linux: **Calculator**

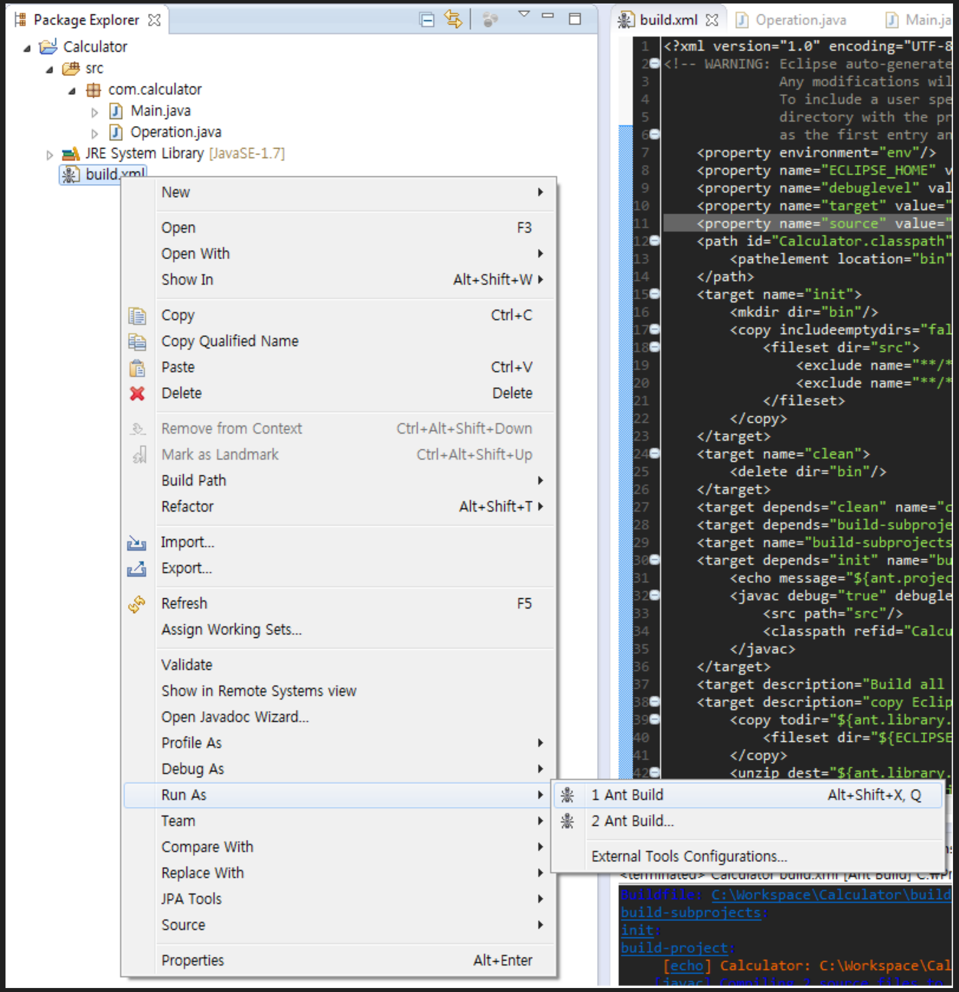


```
[root@localhost sv]# ll
total 8
-rw-r--r-- 1 root root 1708 Apr  4 02:52 build.xml
drwxr-xr-x 3 root root 4096 Apr  4 02:51 src
[root@localhost sv]# ant
Buildfile: /home/dn3108/MW/sv/build.xml

clean:

makedir:
    [mkdir] Created dir: /home/dn3108/MW/sv/bin
    [mkdir] Created dir: /home/dn3108/MW/sv/docs
    [mkdir] Created dir: /home/dn3108/MW/sv/dist

compile:
    [javac] /home/dn3108/MW/sv/build.xml:26: warning: 'includeantruntime' was not set, defaulting to build.sysclasspath=las
t; set to false for repeatable builds
    [javac] Compiling 2 source files to /home/dn3108/MW/sv/bin

jar:
      [jar] Building jar: /home/dn3108/MW/sv/dist/Calculator.jar

docs:
  [javadoc] Generating Javadoc
  [javadoc] Javadoc execution
  [javadoc] Loading source file /home/dn3108/MW/sv/src/com/calculator/Main.java...
  [javadoc] Loading source file /home/dn3108/MW/sv/src/com/calculator/Operation.java...
  [javadoc] Constructing Javadoc information...
  [javadoc] Standard Doclet version 1.6.0_38
  [javadoc] Building tree for all the packages and classes...
  [javadoc] Building index for all the packages and classes...
  [javadoc] Building index for all classes...

main:

BUILD SUCCESSFUL
Total time: 2 seconds
[root@localhost sv]# 
```

ANT

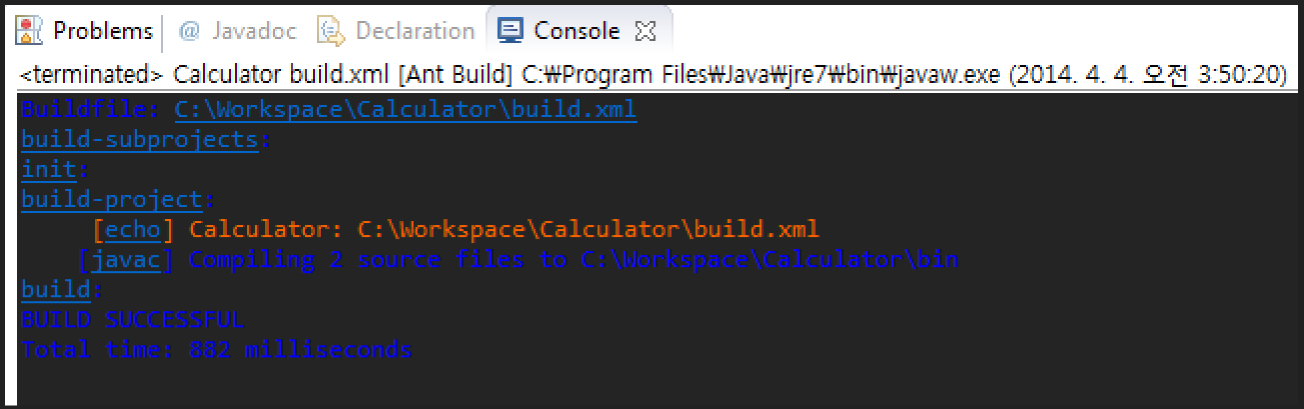
- Ant Example with Eclipse on Windows: **Calculator**

  Project > New > XML File > "build.xml"
  Run As > Ant Build (Alt+Shift+X, Q)



```
<?xml version="1.0" encoding="UTF-8
<!-- WARNING: Eclipse auto-generate
              Any modifications wil
              To include a user spe
              directory with the pr
              as the first entry an
    <property environment="env"/>
    <property name="ECLIPSE_HOME" v
    <property name="debuglevel" val
    <property name="target" value="
    <property name="source" value="
    <path id="Calculator.classpath"
        <pathelement location="bin"
    </path>
    <target name="init">
        <mkdir dir="bin"/>
        <copy includeemptydirs="fal
            <fileset dir="src">
                <exclude name="**/*
                <exclude name="**/*
            </fileset>
        </copy>
    </target>
    <target name="clean">
        <delete dir="bin"/>
    </target>
    <target depends="clean" name="c
    <target depends="build-subproje
    <target name="build-subprojects
    <target depends="init" name="bu
        <echo message="${ant.projec
        <javac debug="true" debugle
            <src path="src"/>
            <classpath refid="Calcu
        </javac>
    </target>
    <target description="Build all 
    <target description="copy Eclip
        <copy todir="${ant.library.
            <fileset dir="${ECLIPSE
        </copy>
        <unzip dest="${ant.library.
```

```
Buildfile: C:\Workspace\Calculator\build
build-subprojects:
init:
build-project:
     [echo] Calculator: C:\Workspace\Cal
```



```
<terminated> Calculator build.xml [Ant Build] C:₩Program Files₩Java₩jre7₩bin₩javaw.exe (2014. 4. 4. 오전 3:50:20)
Buildfile: C:\Workspace\Calculator\build.xml
build-subprojects:
init:
build-project:
     [echo] Calculator: C:\Workspace\Calculator\build.xml
    [javac] Compiling 2 source files to C:\Workspace\Calculator\bin
build:
BUILD SUCCESSFUL
Total time: 882 milliseconds
```

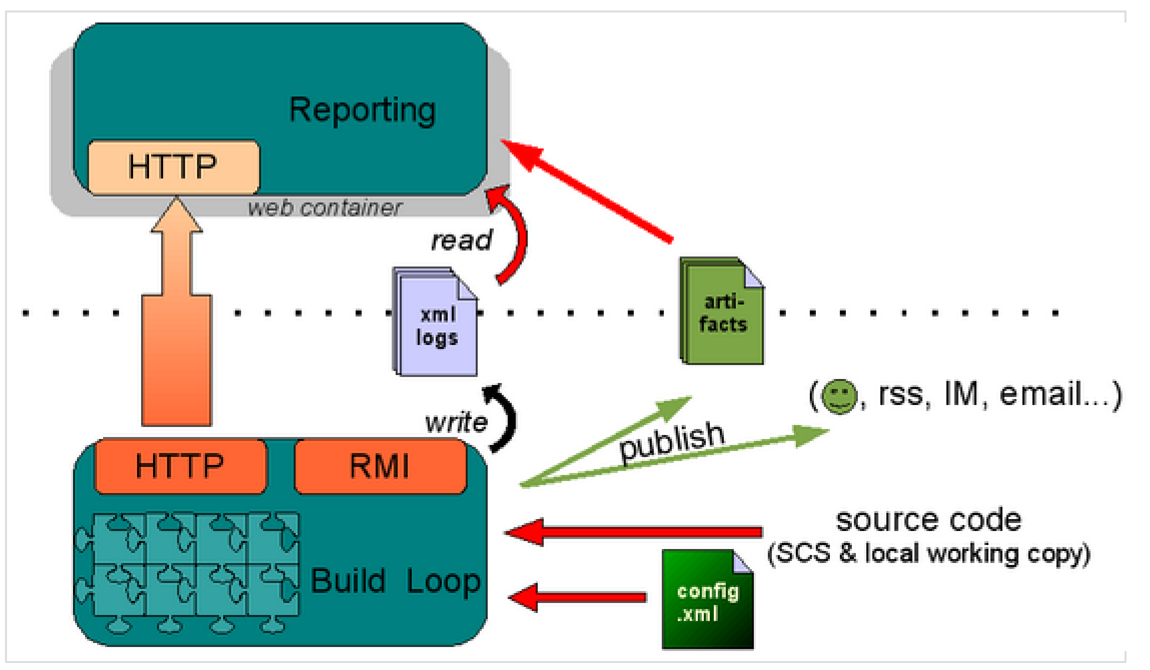
ANT

- Conclusion

Build.xml

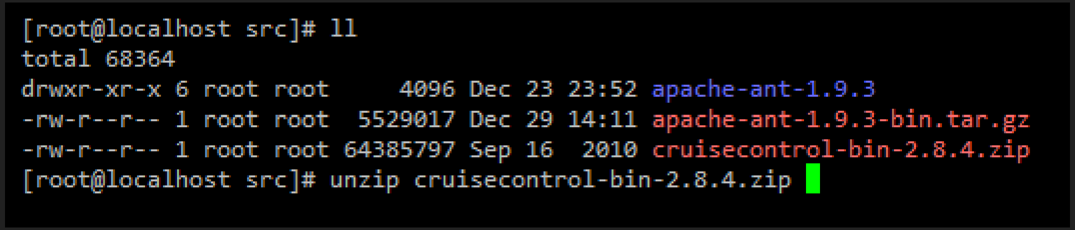
Cruise Control

- Cruise Control
  1. CI(Continuous Integrated) Tool for Java platform
  2. Build tool: Ant, Maven, etc
  3. CM(Configuration Manage.) Tool: SVN, CVS, etc
  4. Web-based CI Server (Jetty-Based)
  5. Auto-build system for Java project



Cruise Control

- Cruise Control Installation in Linux
  1. Download cruisecontrol-bin-2.x.zip from http://cruisecontrol.sourceforge.net/download.html
  2. Extract zip file
  3. Run shell script file: It runs Jetty web server for 8080 port

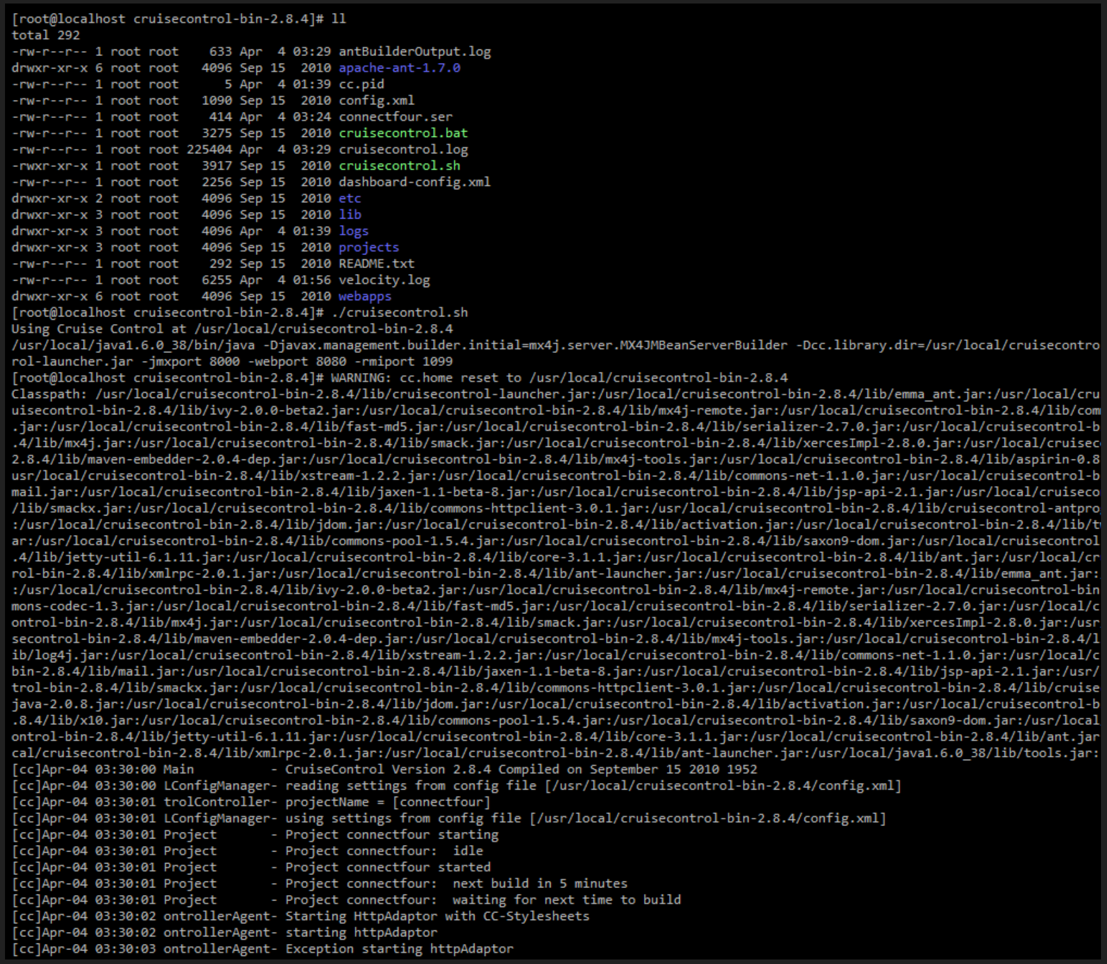


```
[root@localhost src]# ll
total 68364
drwxr-xr-x 6 root root     4096 Dec 23 23:52 apache-ant-1.9.3
-rw-r--r-- 1 root root  5529017 Dec 29 14:11 apache-ant-1.9.3-bin.tar.gz
-rw-r--r-- 1 root root 64385797 Sep 16  2010 cruisecontrol-bin-2.8.4.zip
[root@localhost src]# unzip cruisecontrol-bin-2.8.4.zip
```

Cruise Control

- Cruise Control Installation in Linux

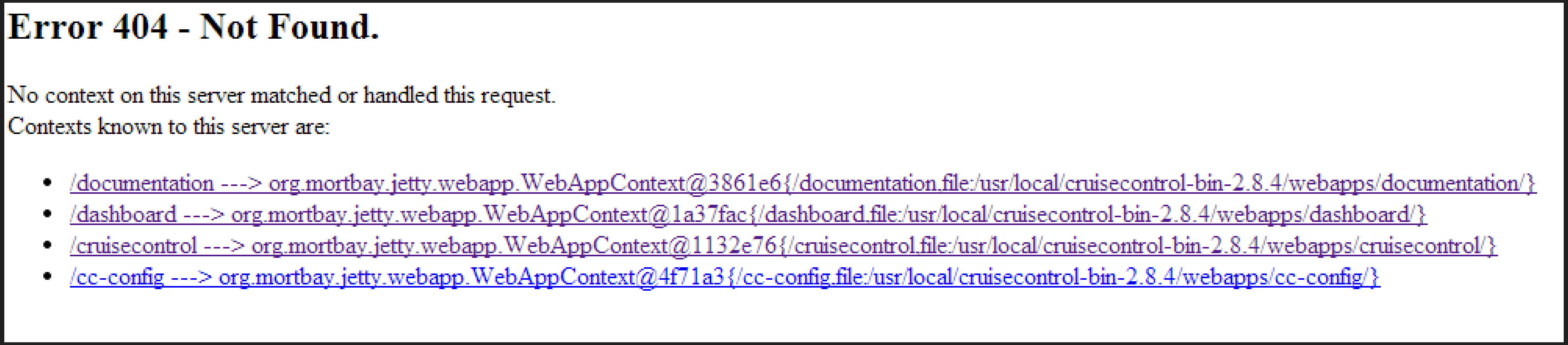
  After run ./cruisecontrol.sh



```
[root@localhost cruisecontrol-bin-2.8.4]# ll
total 292
-rw-r--r-- 1 root root    633 Apr  4 03:29 antBuilderOutput.log
drwxr-xr-x 6 root root   4096 Sep 15  2010 apache-ant-1.7.0
-rw-r--r-- 1 root root      5 Apr  4 01:39 cc.pid
-rw-r--r-- 1 root root   1090 Sep 15  2010 config.xml
-rw-r--r-- 1 root root    414 Apr  4 03:24 connectfour.ser
-rw-r--r-- 1 root root   3275 Sep 15  2010 cruisecontrol.bat
-rw-r--r-- 1 root root 225404 Apr  4 03:29 cruisecontrol.log
-rwxr-xr-x 1 root root   3917 Sep 15  2010 cruisecontrol.sh
-rw-r--r-- 1 root root   2256 Sep 15  2010 dashboard-config.xml
drwxr-xr-x 2 root root   4096 Sep 15  2010 etc
drwxr-xr-x 3 root root   4096 Sep 15  2010 lib
drwxr-xr-x 3 root root   4096 Apr  4 01:39 logs
drwxr-xr-x 3 root root   4096 Sep 15  2010 projects
-rw-r--r-- 1 root root    292 Sep 15  2010 README.txt
-rw-r--r-- 1 root root   6255 Apr  4 01:56 velocity.log
drwxr-xr-x 6 root root   4096 Sep 15  2010 webapps
[root@localhost cruisecontrol-bin-2.8.4]# ./cruisecontrol.sh
Using Cruise Control at /usr/local/cruisecontrol-bin-2.8.4
/usr/local/java1.6.0_38/bin/java -Djavax.management.builder.initial=mx4j.server.MX4JMBeanServerBuilder -Dcc.library.dir=/usr/local/cruisecontro
rol-launcher.jar -jmxport 8000 -webport 8080 -rmiport 1099
[root@localhost cruisecontrol-bin-2.8.4]# WARNING: cc.home reset to /usr/local/cruisecontrol-bin-2.8.4
Classpath: /usr/local/cruisecontrol-bin-2.8.4/lib/cruisecontrol-launcher.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/emma_ant.jar:/usr/local/cru
uisecontrol-bin-2.8.4/lib/ivy-2.0.0-beta2.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/mx4j-remote.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/com
.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/fast-md5.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/serializer-2.7.0.jar:/usr/local/cruisecontrol-b
.4/lib/mx4j.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/smack.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/xercesImpl-2.8.0.jar:/usr/local/cruisec
2.8.4/lib/maven-embedder-2.0.4-dep.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/mx4j-tools.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/aspirin-0.8
usr/local/cruisecontrol-bin-2.8.4/lib/xstream-1.2.2.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/commons-net-1.1.0.jar:/usr/local/cruisecontrol-b
mail.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/jaxen-1.1-beta-8.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/jsp-api-2.1.jar:/usr/local/cruiseco
/lib/smackx.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/commons-httpclient-3.0.1.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/cruisecontrol-antpro
:/usr/local/cruisecontrol-bin-2.8.4/lib/jdom.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/activation.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/t
ar:/usr/local/cruisecontrol-bin-2.8.4/lib/commons-pool-1.5.4.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/saxon9-dom.jar:/usr/local/cruisecontrol
.4/lib/jetty-util-6.1.11.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/core-3.1.1.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/ant.jar:/usr/local/cr
rol-bin-2.8.4/lib/xmlrpc-2.0.1.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/ant-launcher.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/emma_ant.jar:
:/usr/local/cruisecontrol-bin-2.8.4/lib/ivy-2.0.0-beta2.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/mx4j-remote.jar:/usr/local/cruisecontrol-bin
mons-codec-1.3.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/fast-md5.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/serializer-2.7.0.jar:/usr/local/c
ontrol-bin-2.8.4/lib/mx4j.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/smack.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/xercesImpl-2.8.0.jar:/usr
secontrol-bin-2.8.4/lib/maven-embedder-2.0.4-dep.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/mx4j-tools.jar:/usr/local/cruisecontrol-bin-2.8.4/l
ib/log4j.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/xstream-1.2.2.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/commons-net-1.1.0.jar:/usr/local/c
bin-2.8.4/lib/mail.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/jaxen-1.1-beta-8.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/jsp-api-2.1.jar:/usr/
trol-bin-2.8.4/lib/smackx.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/commons-httpclient-3.0.1.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/cruise
java-2.0.8.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/jdom.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/activation.jar:/usr/local/cruisecontrol-b
.8.4/lib/x10.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/commons-pool-1.5.4.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/saxon9-dom.jar:/usr/local
ontrol-bin-2.8.4/lib/jetty-util-6.1.11.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/core-3.1.1.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/ant.jar
cal/cruisecontrol-bin-2.8.4/lib/xmlrpc-2.0.1.jar:/usr/local/cruisecontrol-bin-2.8.4/lib/ant-launcher.jar:/usr/local/java1.6.0_38/lib/tools.jar:
[cc]Apr-04 03:30:00 Main           - CruiseControl Version 2.8.4 Compiled on September 15 2010 1952
[cc]Apr-04 03:30:00 LConfigManager- reading settings from config file [/usr/local/cruisecontrol-bin-2.8.4/config.xml]
[cc]Apr-04 03:30:01 trolController- projectName = [connectfour]
[cc]Apr-04 03:30:01 LConfigManager- using settings from config file [/usr/local/cruisecontrol-bin-2.8.4/config.xml]
[cc]Apr-04 03:30:01 Project        - Project connectfour starting
[cc]Apr-04 03:30:01 Project        - Project connectfour:  idle
[cc]Apr-04 03:30:01 Project        - Project connectfour started
[cc]Apr-04 03:30:01 Project        - Project connectfour:  next build in 5 minutes
[cc]Apr-04 03:30:01 Project        - Project connectfour:  waiting for next time to build
[cc]Apr-04 03:30:02 ontrollerAgent- Starting HttpAdaptor with CC-Stylesheets
[cc]Apr-04 03:30:02 ontrollerAgent- starting httpAdaptor
[cc]Apr-04 03:30:03 ontrollerAgent- Exception starting httpAdaptor
```

Cruise Control

- Cruise Control Installation in Linux
  1. CC for T2(SV): http://dev.viskit.co.kr:28080/
  2. Main page is 404 Error page with some contents.
     Because it has no index.* file in webapps directory.
     It meas Success!



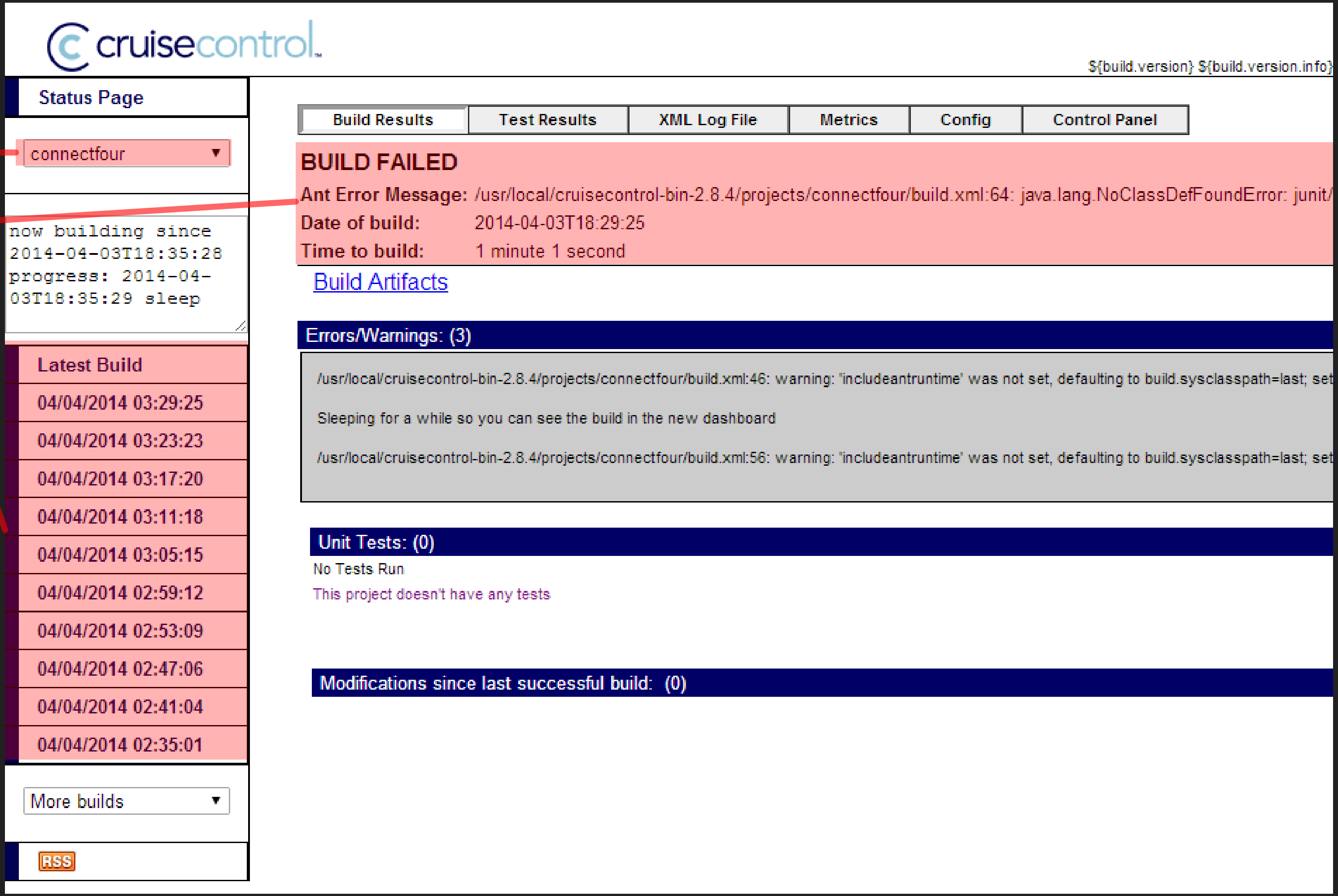
Error 404 - Not Found.

No context on this server matched or handled this request.
Contexts known to this server are:

- /documentation ---> org.mortbay.jetty.webapp.WebAppContext@3861e6{/documentation,file:/usr/local/cruisecontrol-bin-2.8.4/webapps/documentation/}
- /dashboard ---> org.mortbay.jetty.webapp.WebAppContext@1a37fac{/dashboard,file:/usr/local/cruisecontrol-bin-2.8.4/webapps/dashboard/}
- /cruisecontrol ---> org.mortbay.jetty.webapp.WebAppContext@1132e76{/cruisecontrol,file:/usr/local/cruisecontrol-bin-2.8.4/webapps/cruisecontrol/}
- /cc-config ---> org.mortbay.jetty.webapp.WebAppContext@4f71a3{/cc-config,file:/usr/local/cruisecontrol-bin-2.8.4/webapps/cc-config/}

Cruise Control

- Cruise Control Usage
  - Project Name
  - Build Result(Error message)
  - Build History in Regular time



```
now building since
2014-04-03T18:35:28
progress: 2014-04-
03T18:35:29 sleep
```

Latest Build
04/04/2014 03:29:25
04/04/2014 03:23:23
04/04/2014 03:17:20
04/04/2014 03:11:18
04/04/2014 03:05:15
04/04/2014 02:59:12
04/04/2014 02:53:09
04/04/2014 02:47:06
04/04/2014 02:41:04
04/04/2014 02:35:01

BUILD FAILED

Ant Error Message: /usr/local/cruisecontrol-bin-2.8.4/projects/connectfour/build.xml:64: java.lang.NoClassDefFoundError: junit/

Date of build: 2014-04-03T18:29:25

Time to build: 1 minute 1 second

Errors/Warnings: (3)

```
/usr/local/cruisecontrol-bin-2.8.4/projects/connectfour/build.xml:46: warning: 'includeantruntime' was not set, defaulting to build.sysclasspath=last; set
Sleeping for a while so you can see the build in the new dashboard
/usr/local/cruisecontrol-bin-2.8.4/projects/connectfour/build.xml:56: warning: 'includeantruntime' was not set, defaulting to build.sysclasspath=last; set
```

Unit Tests: (0)

No Tests Run

This project doesn't have any tests

Modifications since last successful build: (0)

Cruise Control

- Cruise Control Usage – Dashboard Project Status

🟥 Failed in 24 hours

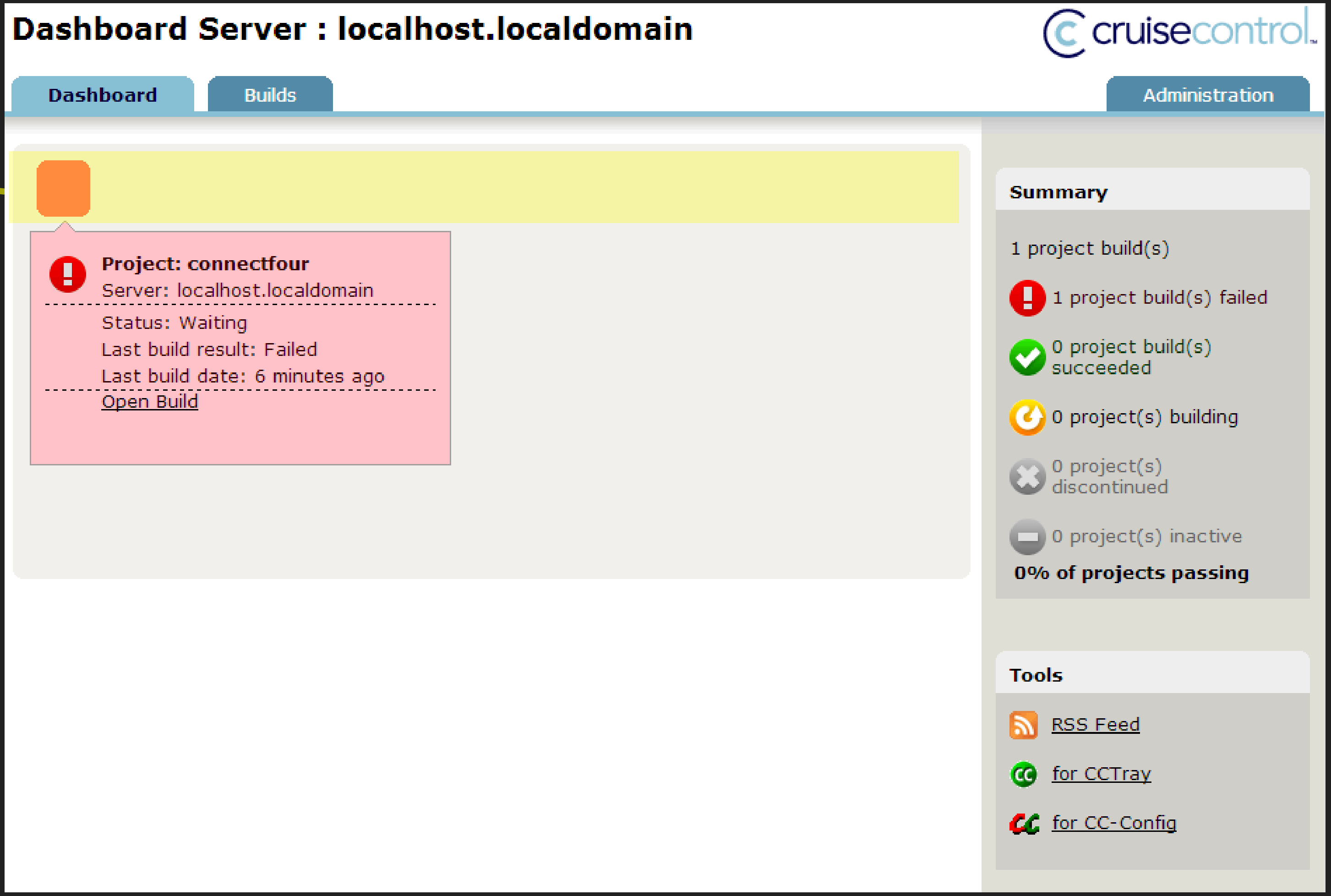
⏸ Failed and now stopped

🟩 Success in 24 hours

▤ Success and waiting for Build

◌ Passed and now building

⬜ Pause or Disconnect



Dashboard Server : localhost.localdomain

❗ **Project: connectfour**
Server: localhost.localdomain
Status: Waiting
Last build result: Failed
Last build date: 6 minutes ago
Open Build

Summary

1 project build(s)

❗ 1 project build(s) failed

✓ 0 project build(s) succeeded

0 project(s) building

✖ 0 project(s) discontinued

⊖ 0 project(s) inactive

0% of projects passing

Tools

RSS Feed

for CCTray

for CC-Config

Cruise Control

- Config.xml

1 Project for 1 <project>

Listener for status log

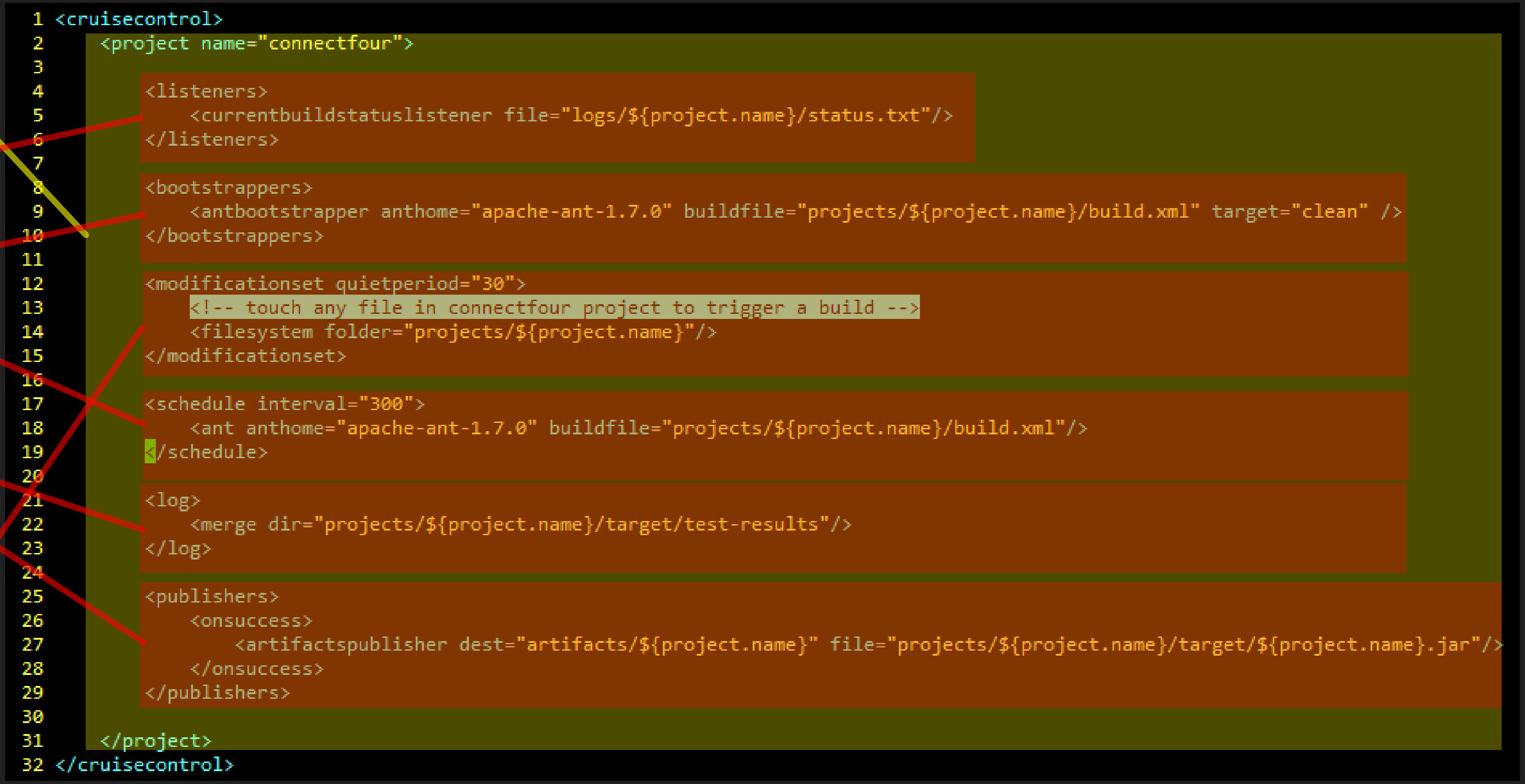
Initialization before build

Project build schedule

Log file location

Project Export file (jar)

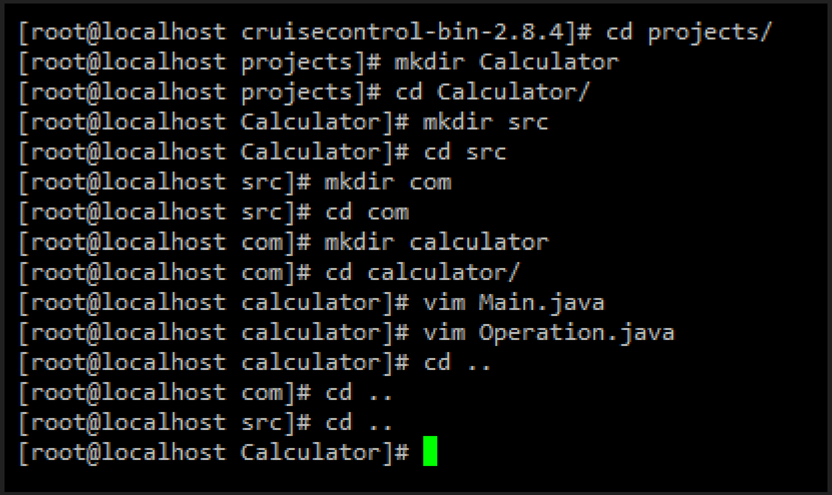
Check period for change



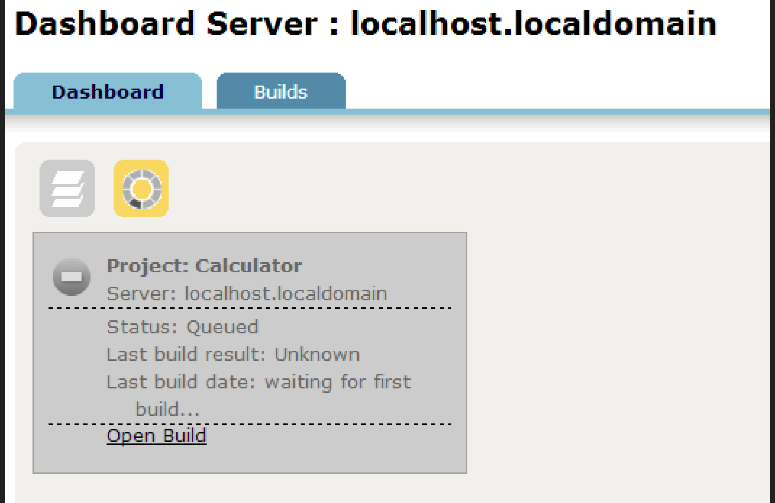
```xml
<cruisecontrol>
    <project name="connectfour">

        <listeners>
            <currentbuildstatuslistener file="logs/${project.name}/status.txt"/>
        </listeners>

        <bootstrappers>
            <antbootstrapper anthome="apache-ant-1.7.0" buildfile="projects/${project.name}/build.xml" target="clean" />
        </bootstrappers>

        <modificationset quietperiod="30">
            <!-- touch any file in connectfour project to trigger a build -->
            <filesystem folder="projects/${project.name}"/>
        </modificationset>

        <schedule interval="300">
            <ant anthome="apache-ant-1.7.0" buildfile="projects/${project.name}/build.xml"/>
        </schedule>

        <log>
            <merge dir="projects/${project.name}/target/test-results"/>
        </log>

        <publishers>
            <onsuccess>
                <artifactspublisher dest="artifacts/${project.name}" file="projects/${project.name}/target/${project.name}.jar"/>
            </onsuccess>
        </publishers>

    </project>
</cruisecontrol>
```

Cruise Control

- Example for Java project: **Calculator**
  1. Add project folder into ${CruiseControl}/projects/${ProjectName}
  2. Modify config.xml for Calculator Project

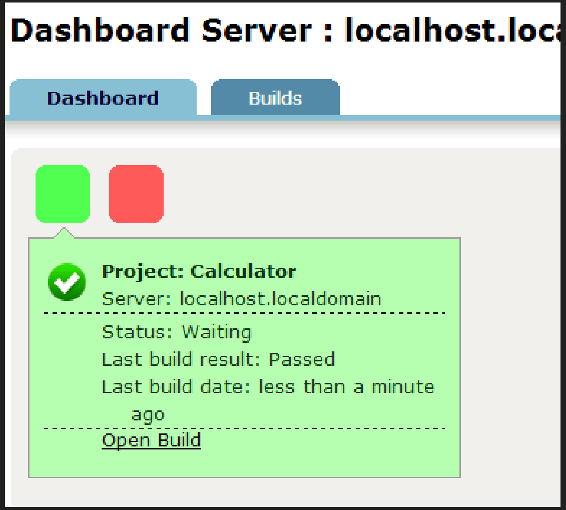


```
[root@localhost cruisecontrol-bin-2.8.4]# cd projects/
[root@localhost projects]# mkdir Calculator
[root@localhost projects]# cd Calculator/
[root@localhost Calculator]# mkdir src
[root@localhost Calculator]# cd src
[root@localhost src]# mkdir com
[root@localhost src]# cd com
[root@localhost com]# mkdir calculator
[root@localhost com]# cd calculator/
[root@localhost calculator]# vim Main.java
[root@localhost calculator]# vim Operation.java
[root@localhost calculator]# cd ..
[root@localhost com]# cd ..
[root@localhost src]# cd ..
[root@localhost Calculator]#
```



Dashboard Server : localhost.localdomain

Project: Calculator
Server: localhost.localdomain
Status: Queued
Last build result: Unknown
Last build date: waiting for first build...
Open Build



Dashboard Server : localhost.loca

Project: Calculator
Server: localhost.localdomain
Status: Waiting
Last build result: Passed
Last build date: less than a minute ago
Open Build

Cruise Control

END