

Software Verification

Ant, CruiseControl

T 3

200711453 류진렬

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201360220 황 민

200312489 유현덕

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➤ Continuous Integration

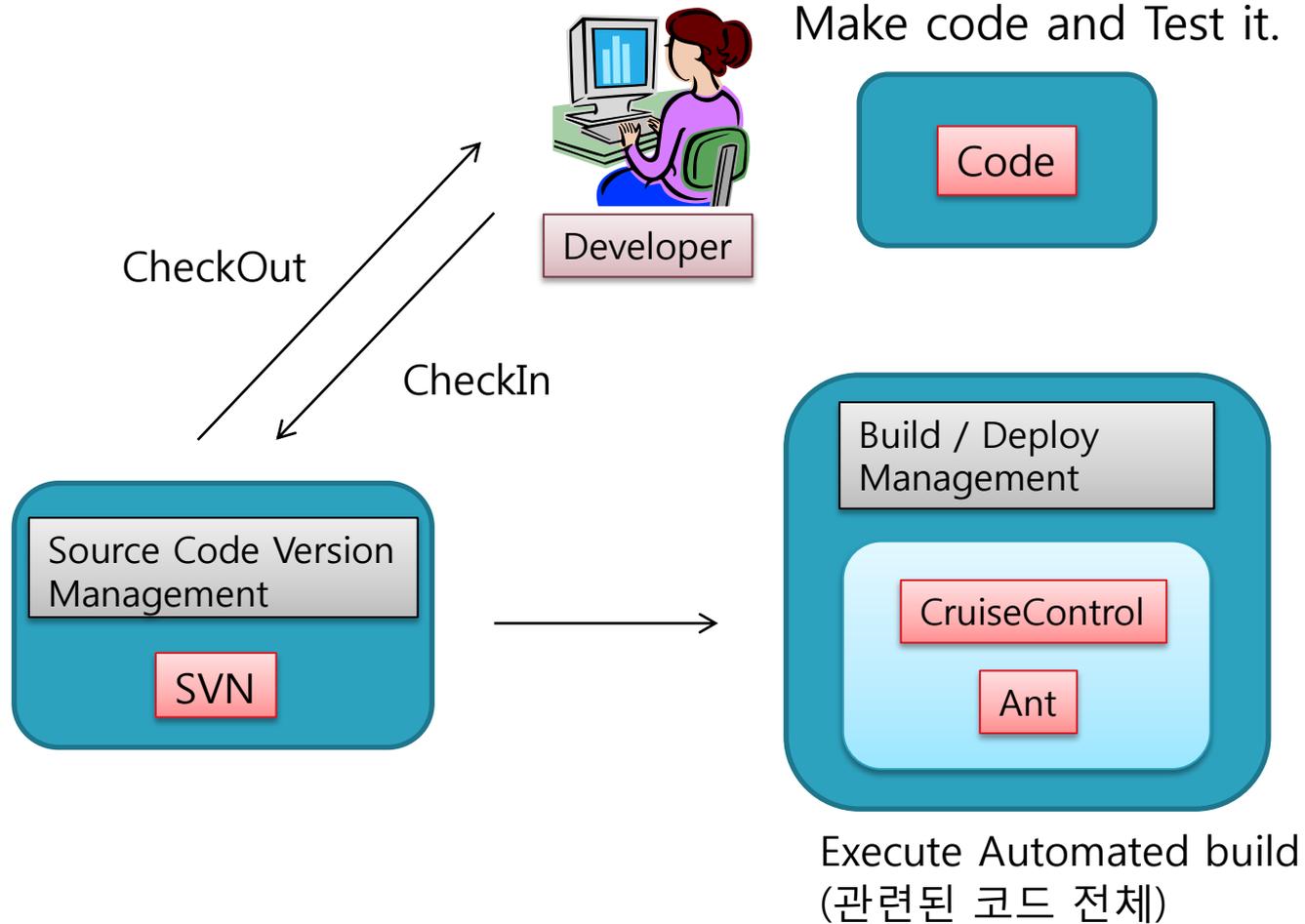
➤ Ant

➤ CruiseControl

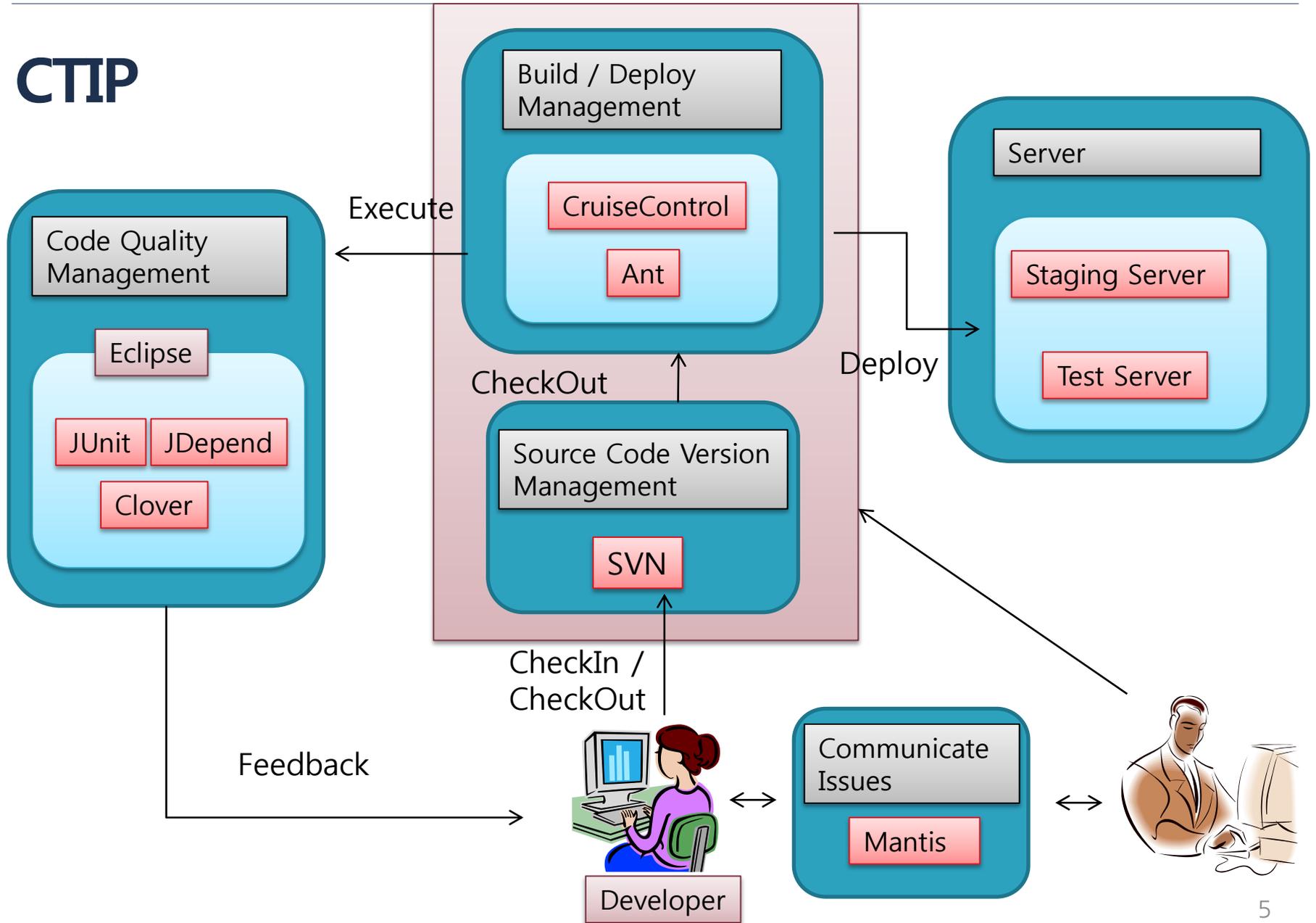
➤ Connect with SVN

Continuous Integration

Continuous Integration



CTIP



Benefit of CI

- **Minimizes number of integration bugs**
If you build and test your software once an hour, no problem is more than an hour old.
- **Improves team work**
- **Delivers latest best build product**
- **Make deployable software(.jar) whenever, wherever.**
- **Reduces the overall development cost by:**
 - making it easier to find and fix problems
 - provides valuable and timely information, letting the development be managed more tightly.

Elements of Successful CI

- Maintain solitary Source Repository
- Automated Build Process
- Include Test process in Build Process
- Short Time interval of Build Process
- Make Latest-build-result easily accessible
- Good Visibility(현 빌드 상황을 쉽게 알도록 하라.)

Ant

What is Ant?

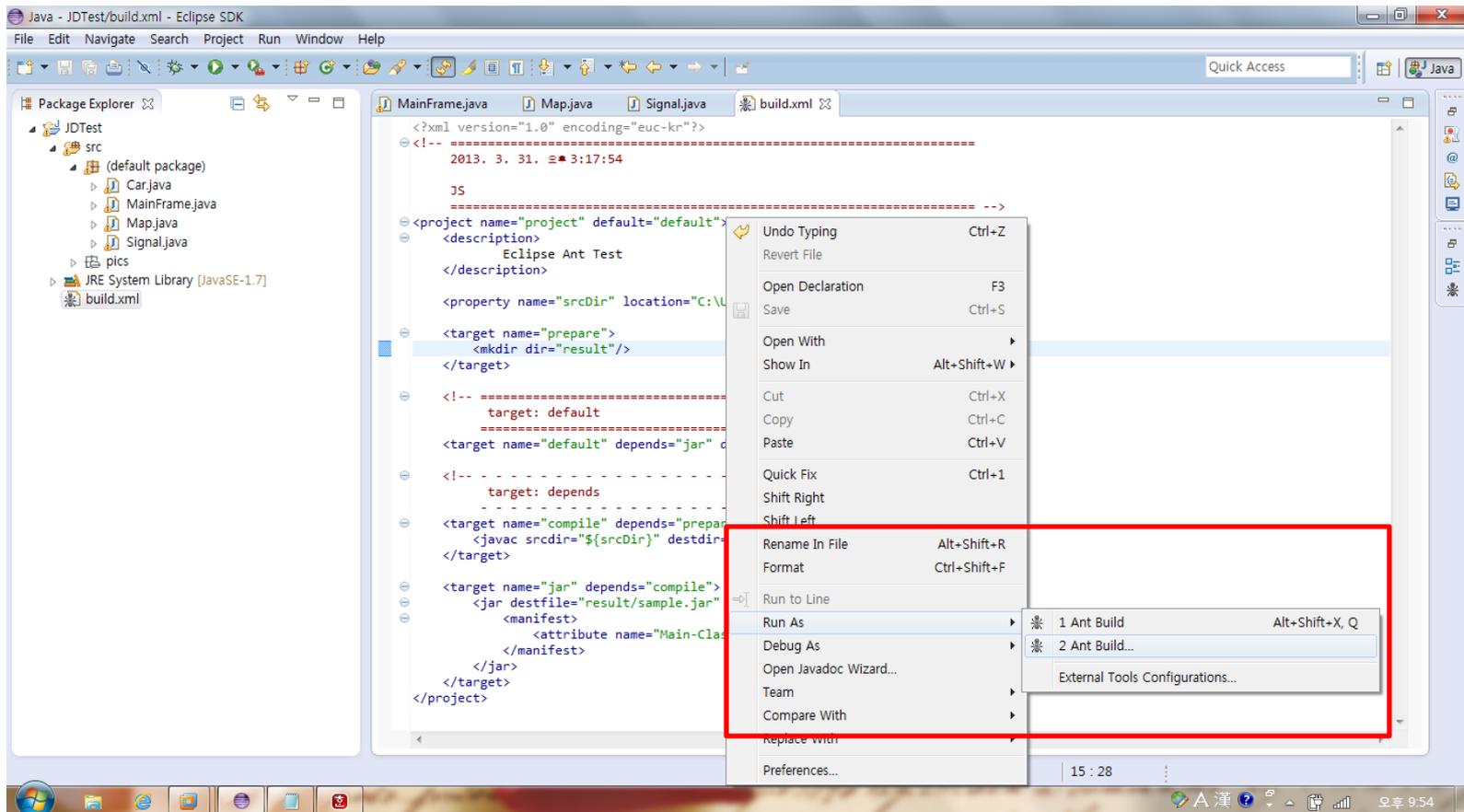
- Open source build tool.
- Specialized in Java project build.
- Use XML to build.
- Java-based tool for build, test, and deploy
(from small project to big project)

Advantages of Ant

- Ant build file is acceptable in other environment.
- Call javac Compiler when source file changed.
- Perform various tasks(operation command, Unit Test)
- Very fast

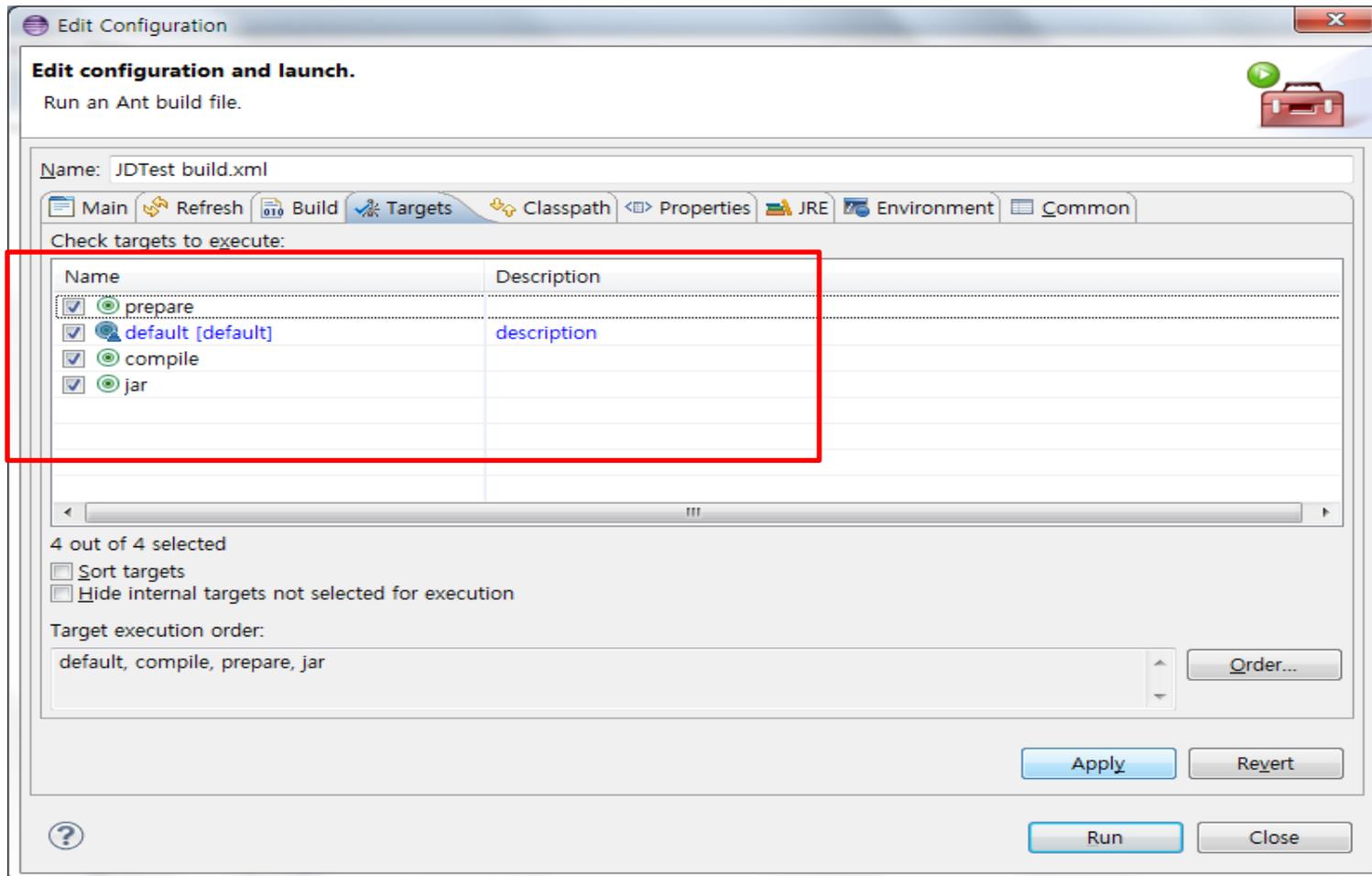
How to use Ant? – in Eclipse

1. Type the build.xml
2. [Run As] - [2 And Build...]



How to use Ant? – in Eclipse

1. Select all targets, [Apply] -> [Run]



Build Process of Ant – build.xml

```

<?xml version="1.0"?>
<project name="Exercise" default="compile" basedir=".">
  <property name="src.dir" location="src"/>
  <property name="bin.dir" location="bin"/>
  <path id="project.classpath">
    <pathelement location="src.dir"/>
    <pathelement location="bin.dir"/>
  </path>
  <target name="prepare">
    <mkdir dir="result"/>
  </target>
  <target name="compile" depends="prepare">
    <javac srcdir="src" destdir="result">
      <classpath refid="project.classpath" />
    </javac>
  </target>
  <target name="jar" depends="compile">
    <jar destfile="sample.jar" basedir="src" excludes="sample.jar">
      <manifest>
        <attribute name="Main-Class" value="CarSimulator"/>
      </manifest>
    </jar>
  </target>
</project>

```

If input 'ant' command without any parameters, Ant execute compile stage in build process. Basedir="." means that base directory is the directory which build.xml is included. Connect the properties to actual location.

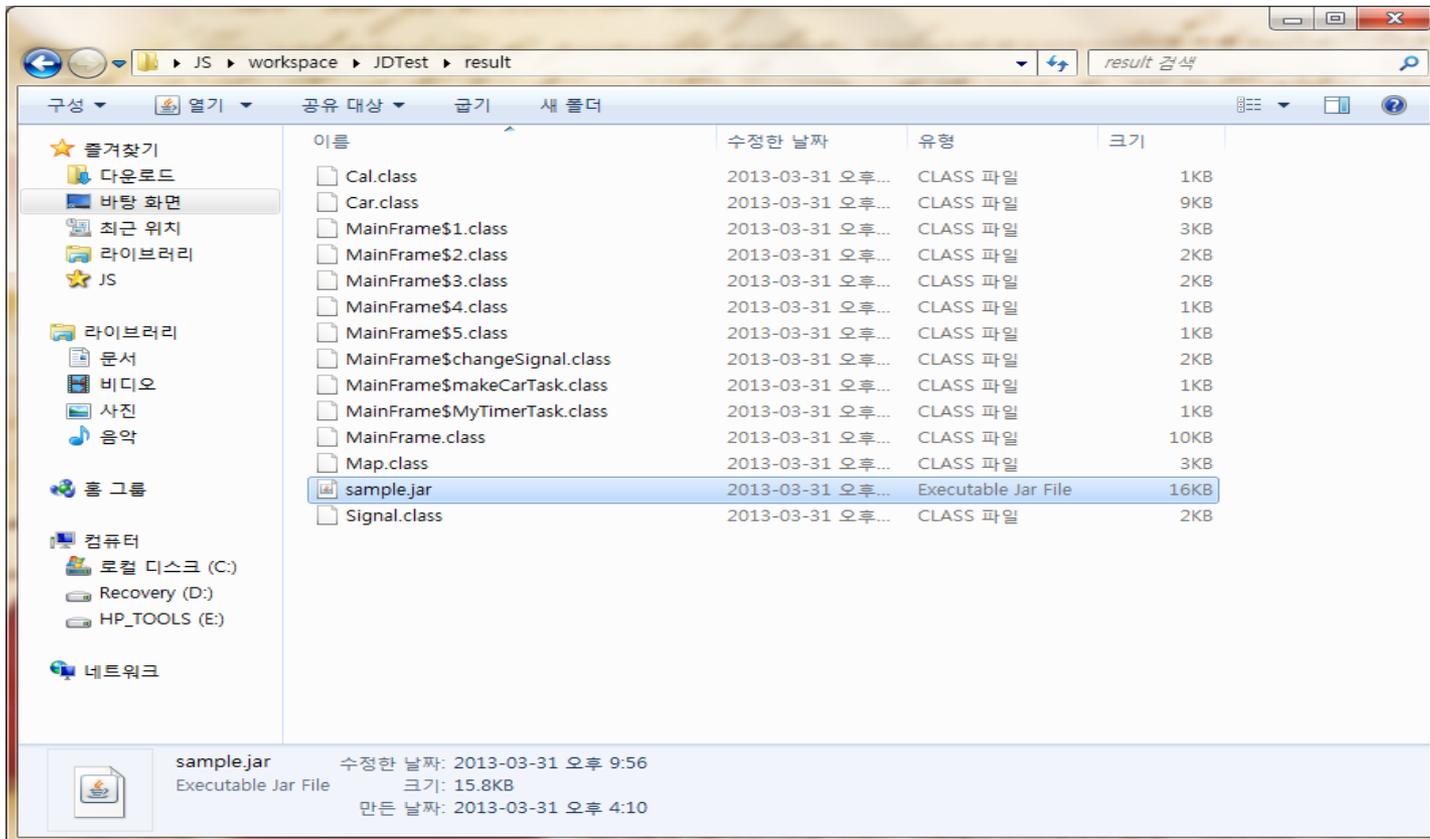
Advantages

1. When Ant execute build file, it can find all directory comparing the relative location from the base directory
2. It is easy to maintain and manage the files.

Build.xml makes "result" directory. Like this way, we can add some useful operations.

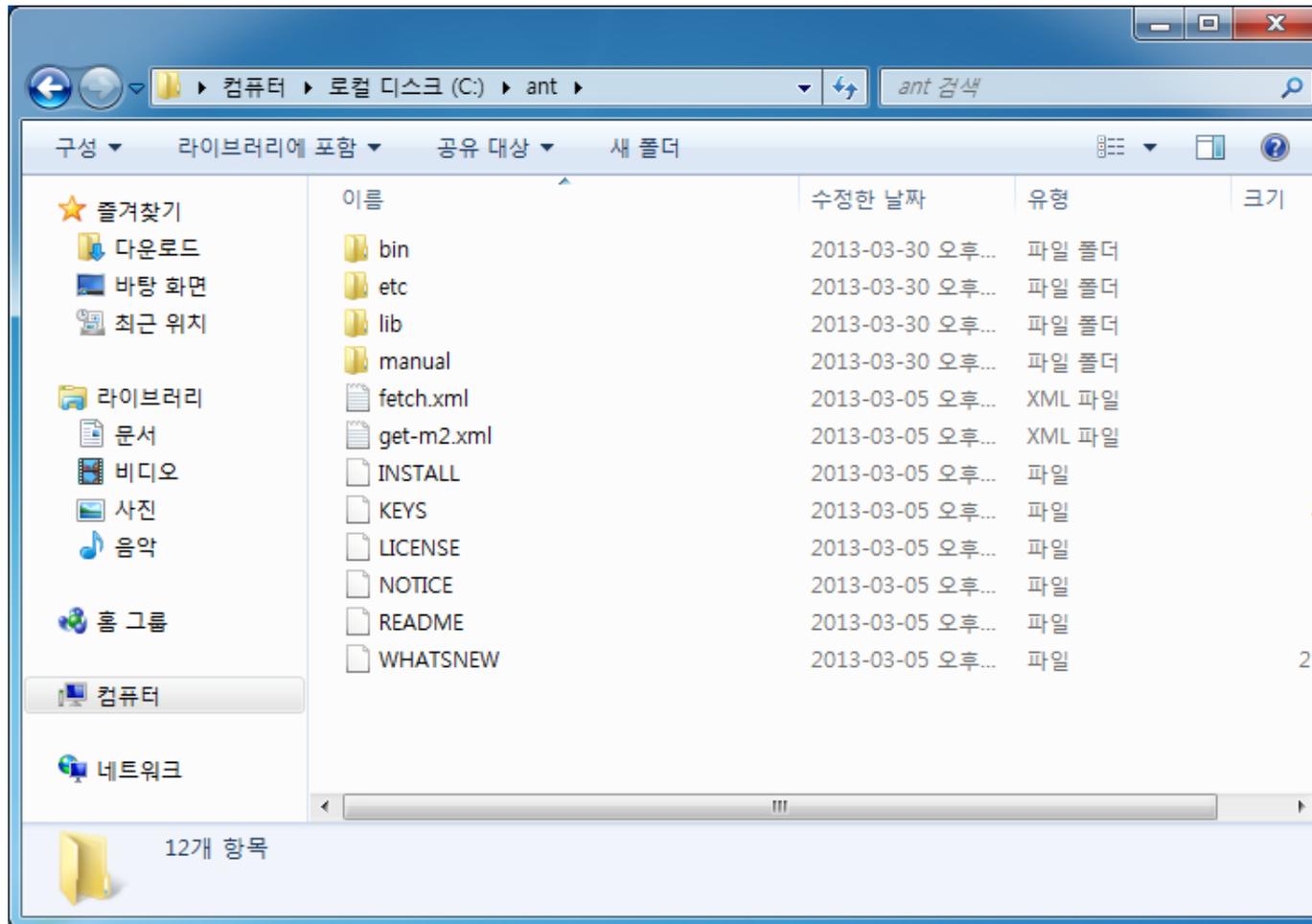
How to use Ant? – in Eclipse

Check the result file in the location.



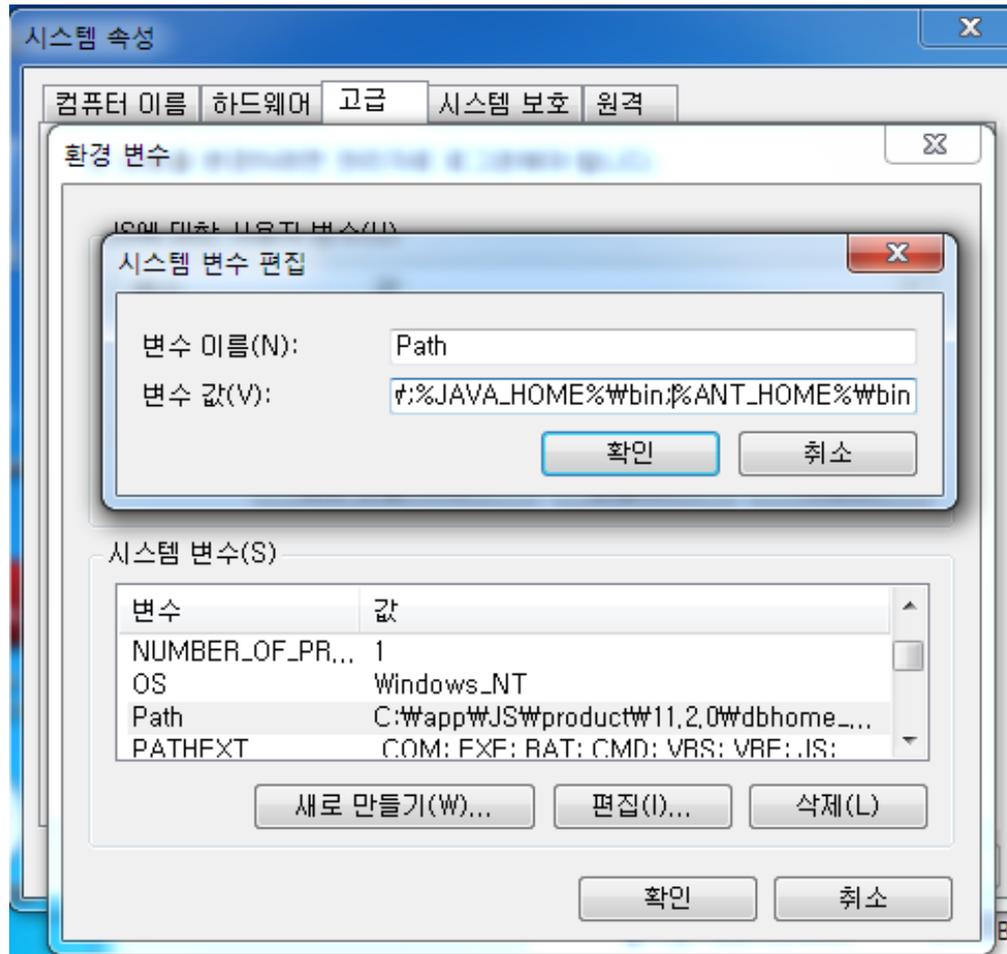
How to use Ant? – in Cmd

Unzip the file in C folder.



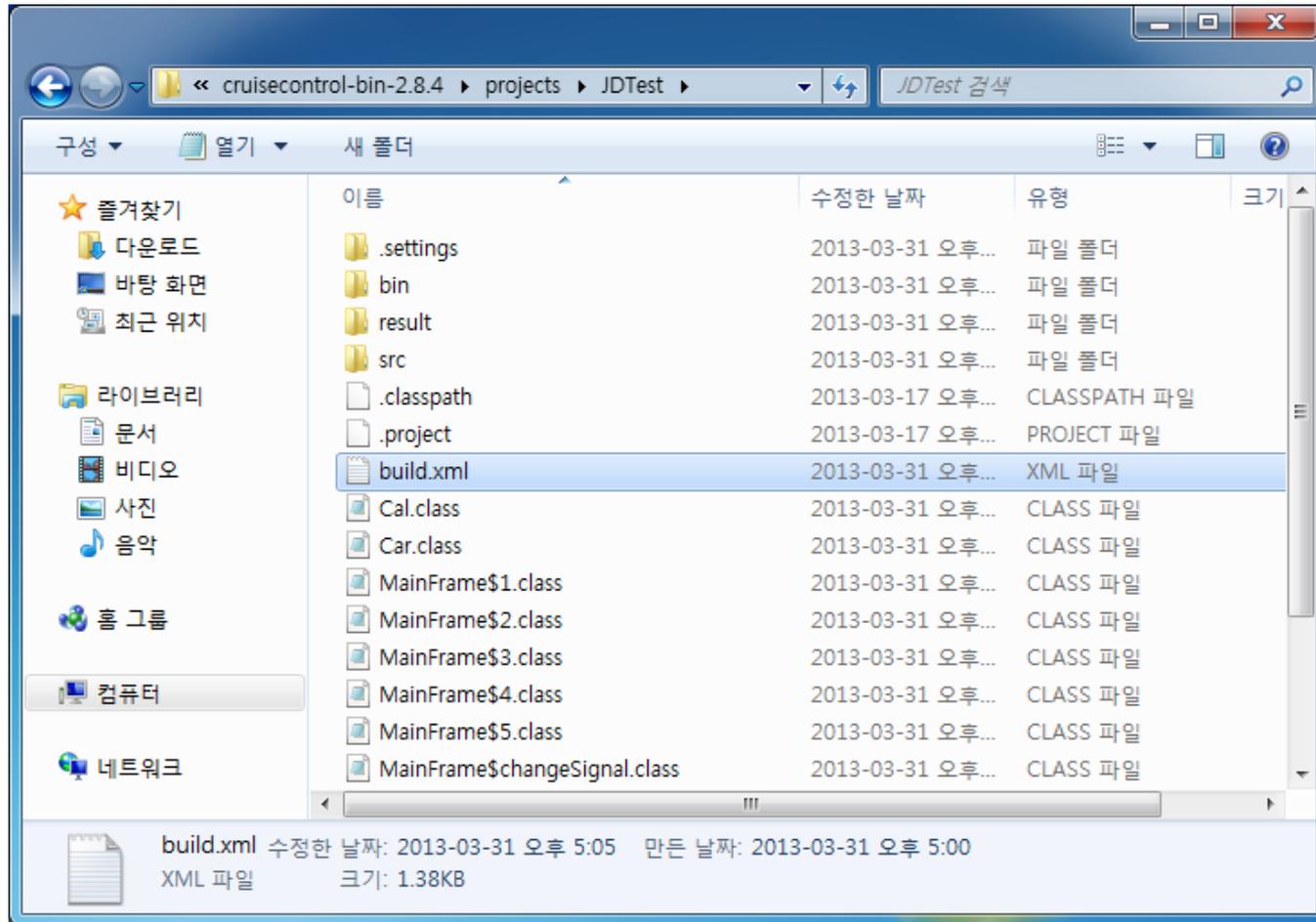
How to use Ant? – in Cmd

Add environment variable



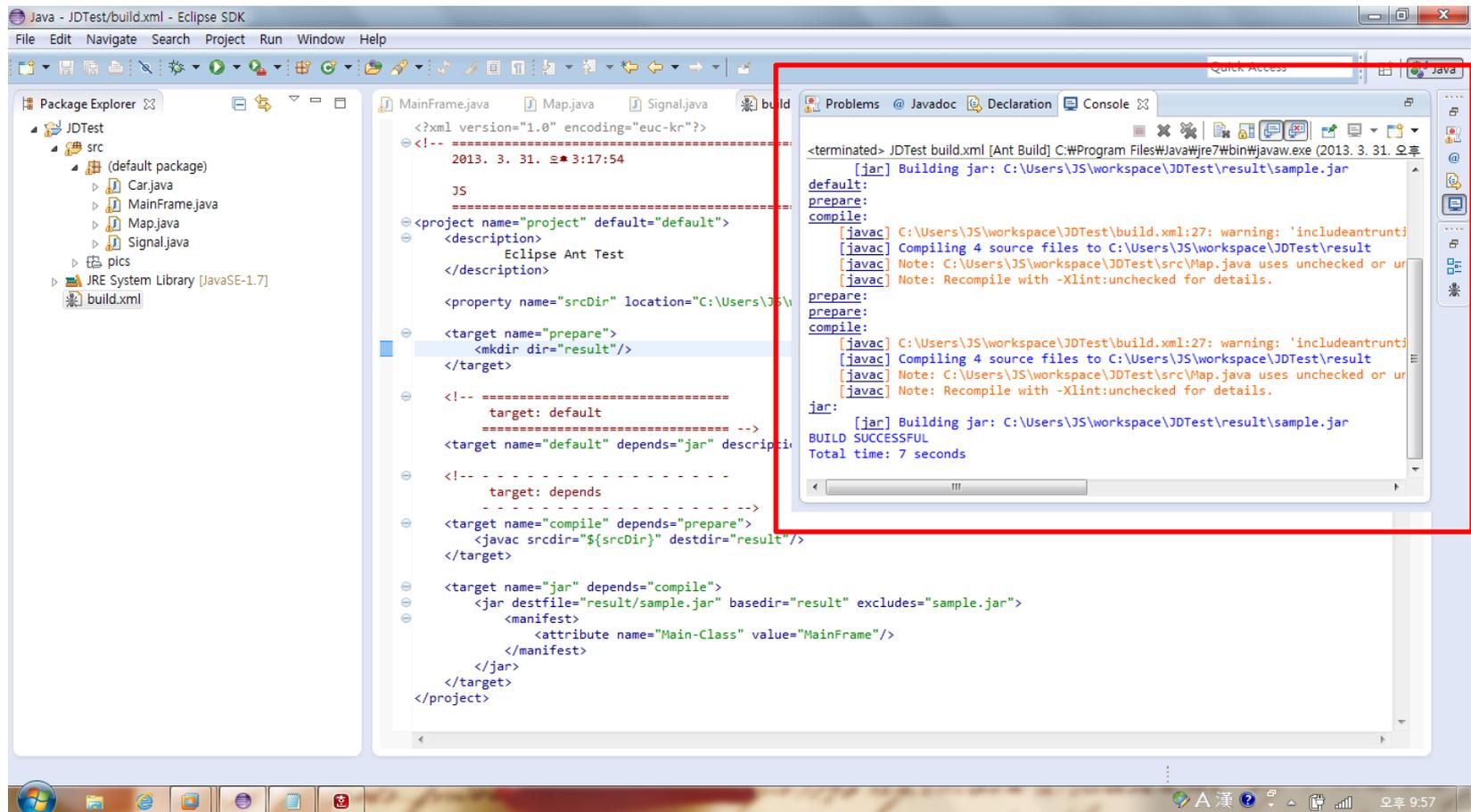
How to use Ant? – in Cmd

Create the build.xml in project folder



How to use Ant? – in Eclipse

Check the result in console window

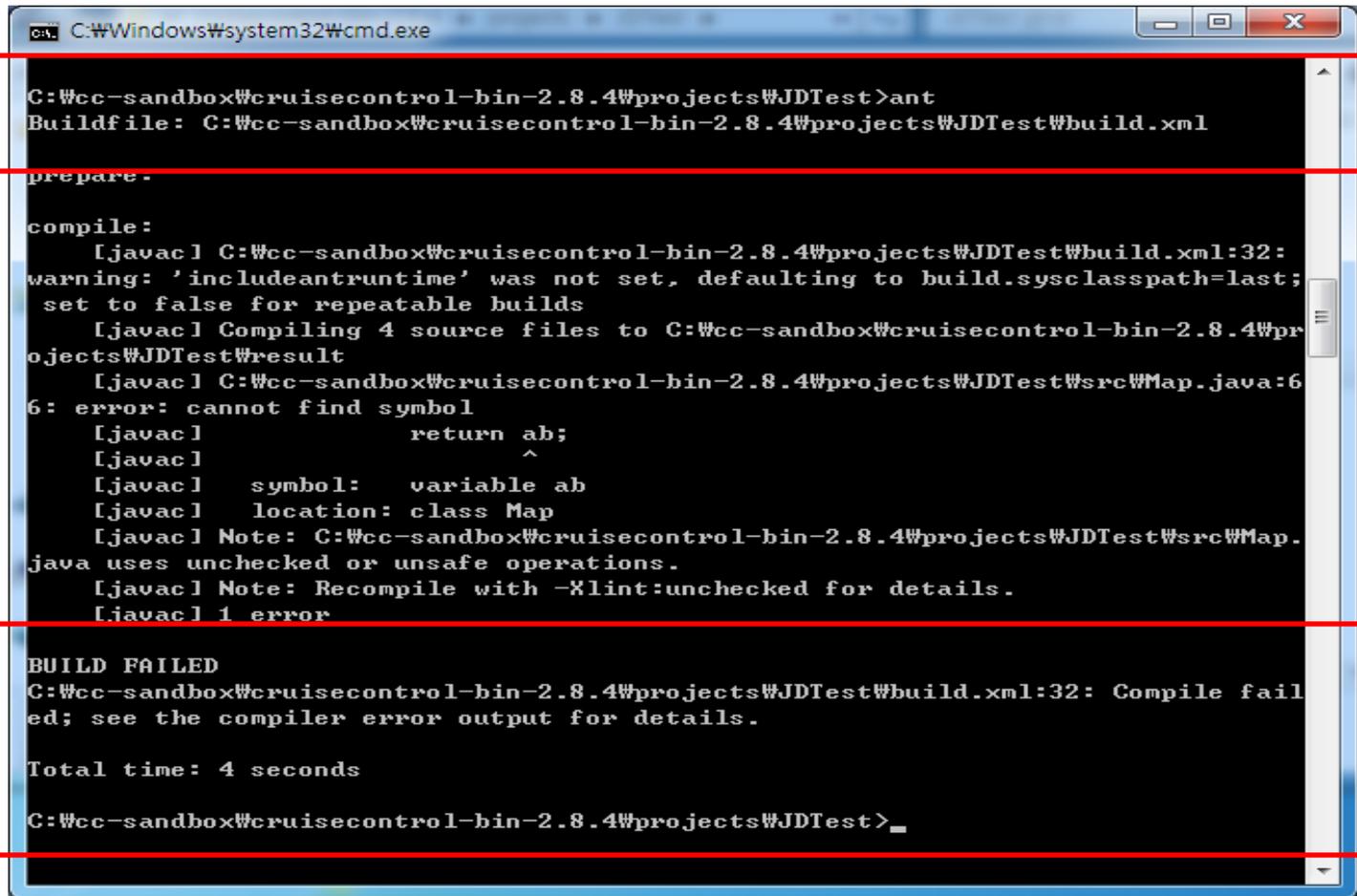


The screenshot shows the Eclipse IDE interface. The Package Explorer on the left shows a project named 'JDTest' with a 'src' directory containing 'Car.java', 'MainFrame.java', 'Map.java', and 'Signal.java'. The main editor displays the 'build.xml' file, which is an Ant build script. The console window, highlighted with a red box, shows the output of the build process. The output indicates that the build was successful, with a total time of 7 seconds. The console output is as follows:

```
<terminated> JDTest build.xml [Ant Build] C:\Program Files\Java\jre7\bin\javaw.exe (2013. 3. 31. 오후 3:17:54)
[jar] Building jar: C:\Users\JS\workspace\JDTest\result\sample.jar
default:
prepare:
compile:
[javac] C:\Users\JS\workspace\JDTest\build.xml:27: warning: 'includeantruntime' was not set, defaulting to build.compiler=javac1.7.0
[javac] Compiling 4 source files to C:\Users\JS\workspace\JDTest\result
[javac] Note: C:\Users\JS\workspace\JDTest\src\Map.java uses unchecked or unsafe operations.
[javac] Note: Recompile with -Xlint:unchecked for details.
prepare:
prepare:
compile:
[javac] C:\Users\JS\workspace\JDTest\build.xml:27: warning: 'includeantruntime' was not set, defaulting to build.compiler=javac1.7.0
[javac] Compiling 4 source files to C:\Users\JS\workspace\JDTest\result
[javac] Note: C:\Users\JS\workspace\JDTest\src\Map.java uses unchecked or unsafe operations.
[javac] Note: Recompile with -Xlint:unchecked for details.
jar:
[jar] Building jar: C:\Users\JS\workspace\JDTest\result\sample.jar
BUILD SUCCESSFUL
Total time: 7 seconds
```

How to use Ant? – in Cmd

Move the project location, input ant command and check the result



```
C:\Windows\system32\cmd.exe
C:\wcc-sandbox\cruisecontrol-bin-2.8.4\projects\JDTest>ant
Buildfile: C:\wcc-sandbox\cruisecontrol-bin-2.8.4\projects\JDTest\build.xml

prepare:

compile:
  [javac] C:\wcc-sandbox\cruisecontrol-bin-2.8.4\projects\JDTest\build.xml:32:
warning: 'includeantruntime' was not set, defaulting to build.sysclasspath=last;
set to false for repeatable builds
  [javac] Compiling 4 source files to C:\wcc-sandbox\cruisecontrol-bin-2.8.4\pr
jects\JDTest\result
  [javac] C:\wcc-sandbox\cruisecontrol-bin-2.8.4\projects\JDTest\src\Map.java:6
6: error: cannot find symbol
      [javac]         return ab;
      [javac]             ^
      [javac] symbol:   variable ab
      [javac] location: class Map
  [javac] Note: C:\wcc-sandbox\cruisecontrol-bin-2.8.4\projects\JDTest\src\Map.
java uses unchecked or unsafe operations.
  [javac] Note: Recompile with -Xlint:unchecked for details.
  [javac] 1 error

BUILD FAILED
C:\wcc-sandbox\cruisecontrol-bin-2.8.4\projects\JDTest\build.xml:32: Compile fail
ed; see the compiler error output for details.

Total time: 4 seconds

C:\wcc-sandbox\cruisecontrol-bin-2.8.4\projects\JDTest>_
```

Use JUnit with Ant – build.xml

1. Define another build target to compile Test Source File.(in build.xml)

```
<target name="compile-tests" depends="compile">
  <javac srcdir="${test.dir}" destdir="${build.test.dir}">
    <classpath refid="project.classpath" />
  </javac>
</target>
```

Test.dir의 테스트 소스 파일을 컴파일해서
결과 클래스 파일들을 build.test.dir 디렉터리에 저장한다.

2. Define another build target to execute all JUnit Test automatically.(in build.xml)

```
<target name="test" depends="compile-tests">
  <junit haltonfailure="true">
    <classpath refid="project.classpath" />
    <formatter type="brief" usefile="false" />
    <batchtest>
      <fileset dir="${build.test.dir}"
        include="**/*Test.class" />
    </batchtest>
    <sysproperty key="doc.dir" value="${doc.dir}" />
    <sysproperty key="index.dir" value="${index.dir}" />
  </junit>
</target>
```

Test 실행 전에 테스트 코드를
먼저 컴파일하라는 정의
Test 결과를 화면에만 출력한다는 정의
Test Suite를 생성

If build result is successful, it means test has been successful too.

Why we should use Ant?

- Complementary cooperation with IDE
- Good Performance in ordered Tasks.
- Specialized in JAVA language
(compared to Make)

CruiseControl

What is CruiseControl?



Cruise Control of the car -> The function which maintains the car's speed steadily.

Similarly in CTIP environment, it maintains the integrated project steadily.

What is CruiseControl?

- **Java-based framework for a continuous build process**
- **Easily extensible:**
 - Configuration easily extended by custom plugins
 - Well defined interfaces for version control systems, build tools and publishers
- **Provide detailed view of current & previous builds**
- **Use XML (config.XML)**

What advantages of CruiseControl?

- **Automated build process**

- 1. regularly compile, support Continuous Integration.
- 2. regularly test, find problems.

- **Find code problem easily**

- Ex) 60분마다 한번씩 빌드 수행시 실패했을 경우, 그 60 분 동안 바뀐 부분만 살펴 보면 되므로 문제를 더 쉽게 찾을 수 있다.

- **It report the result**

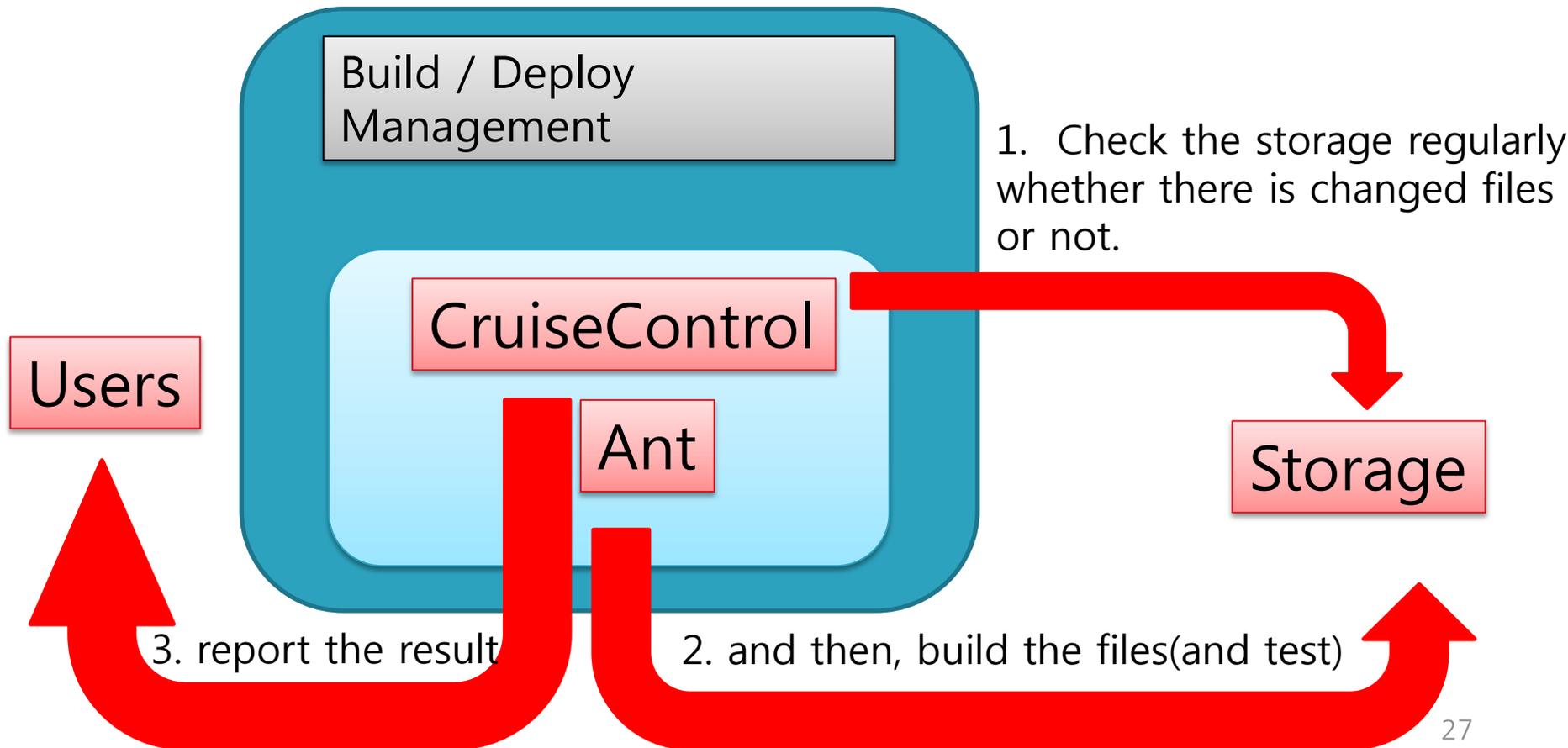
- Mailing reporting
- Dashbord & JSP reporting

- **Reduce project cost(time, human resource)**

- So improve the productivity and efficiency.

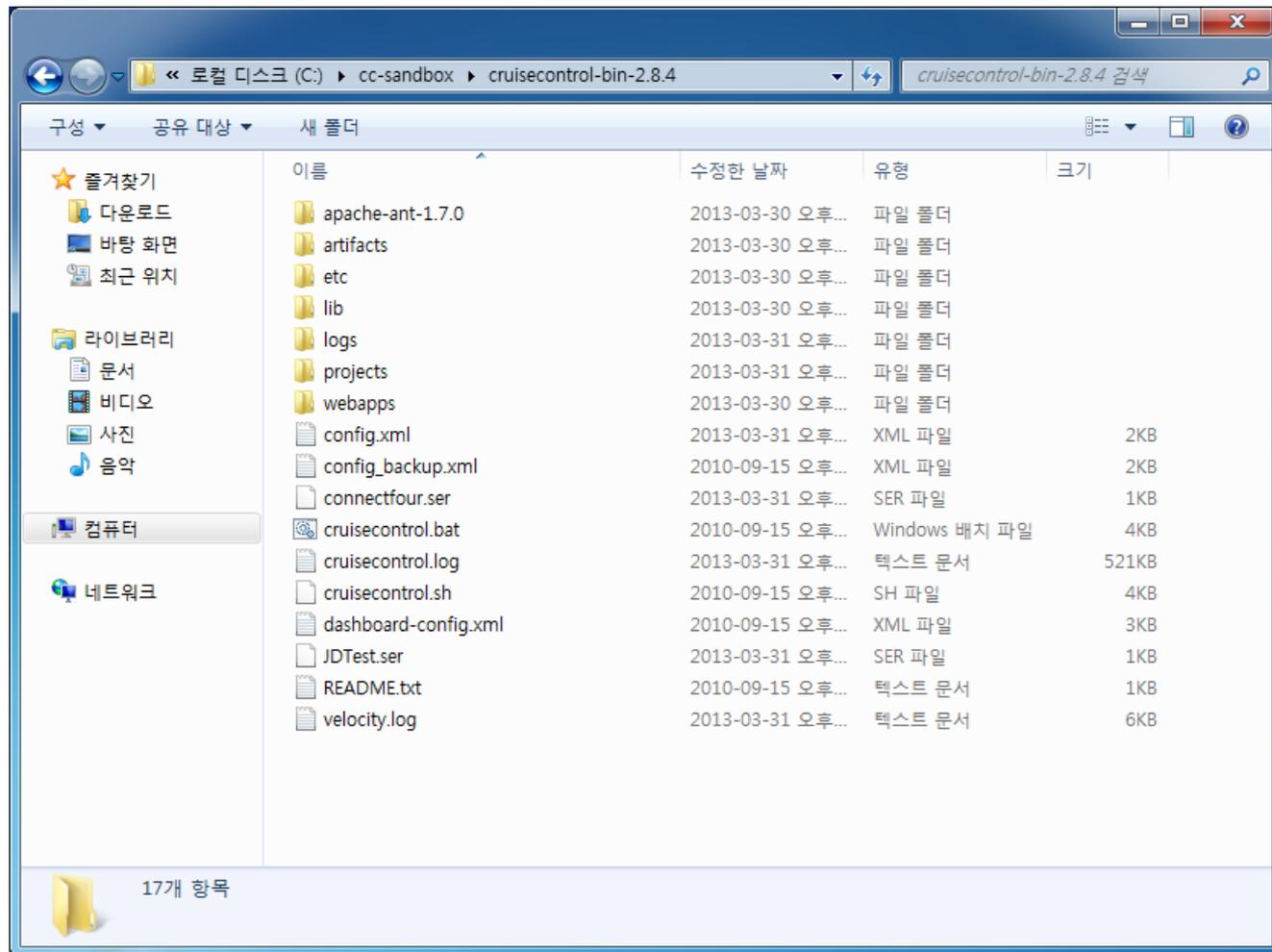
Automated Build Process

As I said, We can use Ant to build some files,
If we use Ant with CruiseControl, we can make Automated Build process



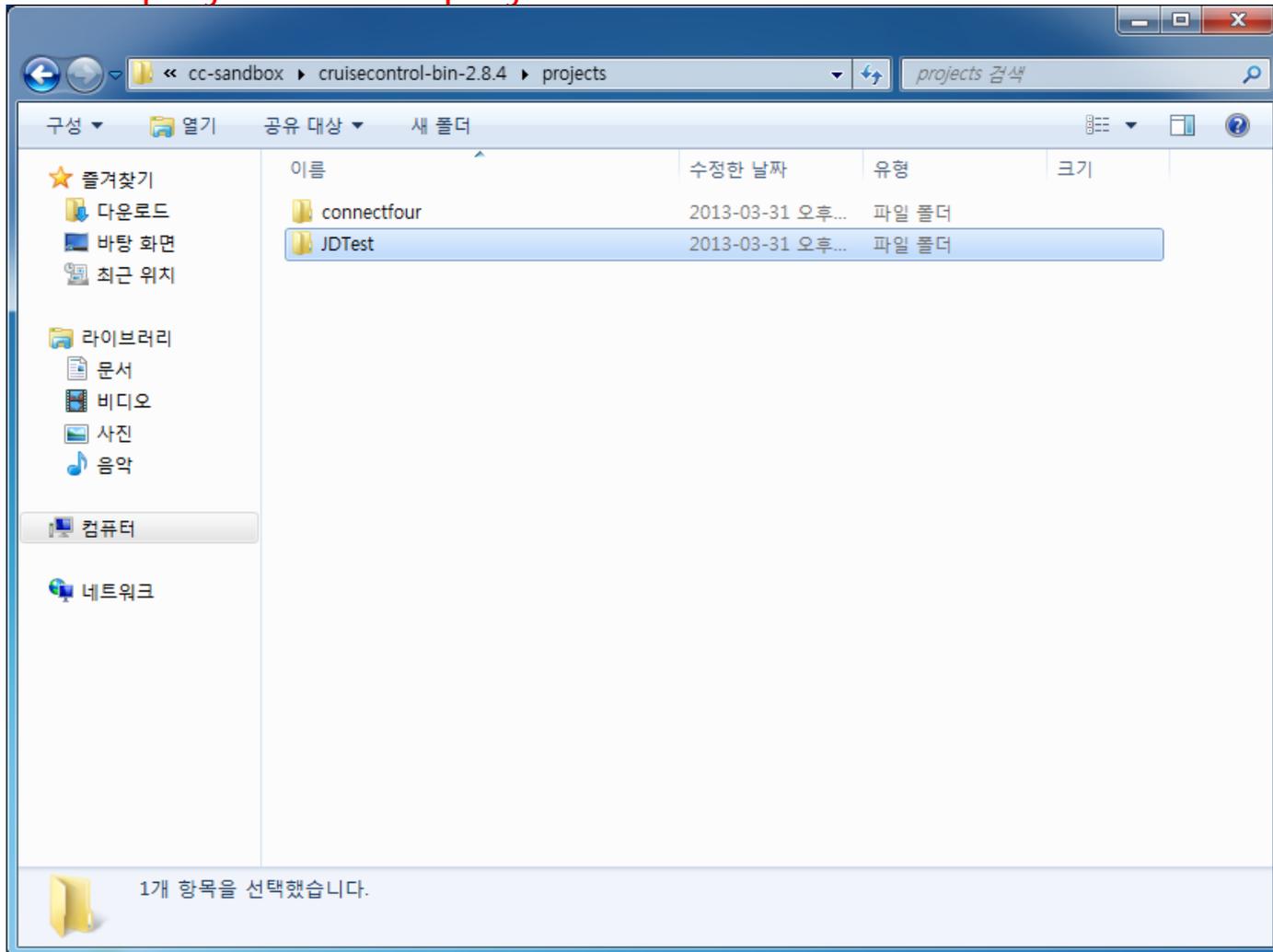
How to install CruiseControl?

Unzip the CruiseControl binary release – it includes ant



How to install CruiseControl?

Place the project files in project folder



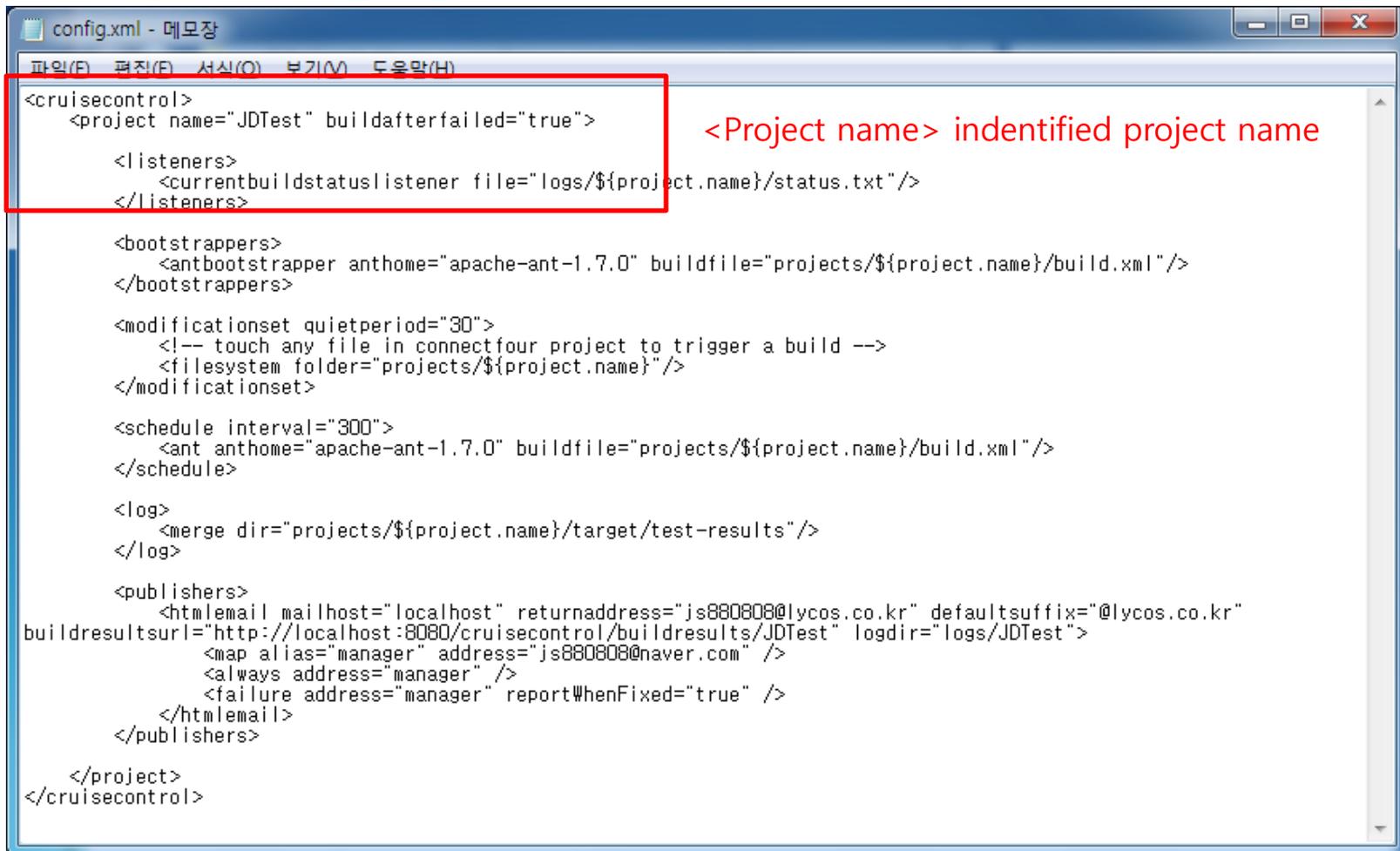
How to use CruiseControl? - config.xml

Modify the config.xml

30

How to use CruiseControl? – config.xml

Modify the config.xml



```
config.xml - 데모장
파일(F) 편집(E) 서식(O) 보기(V) 도움말(H)
<cruisecontrol>
  <project name="JDTest" buildafterfailed="true">
    <listeners>
      <currentbuildstatuslistener file="logs/${project.name}/status.txt"/>
    </listeners>

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

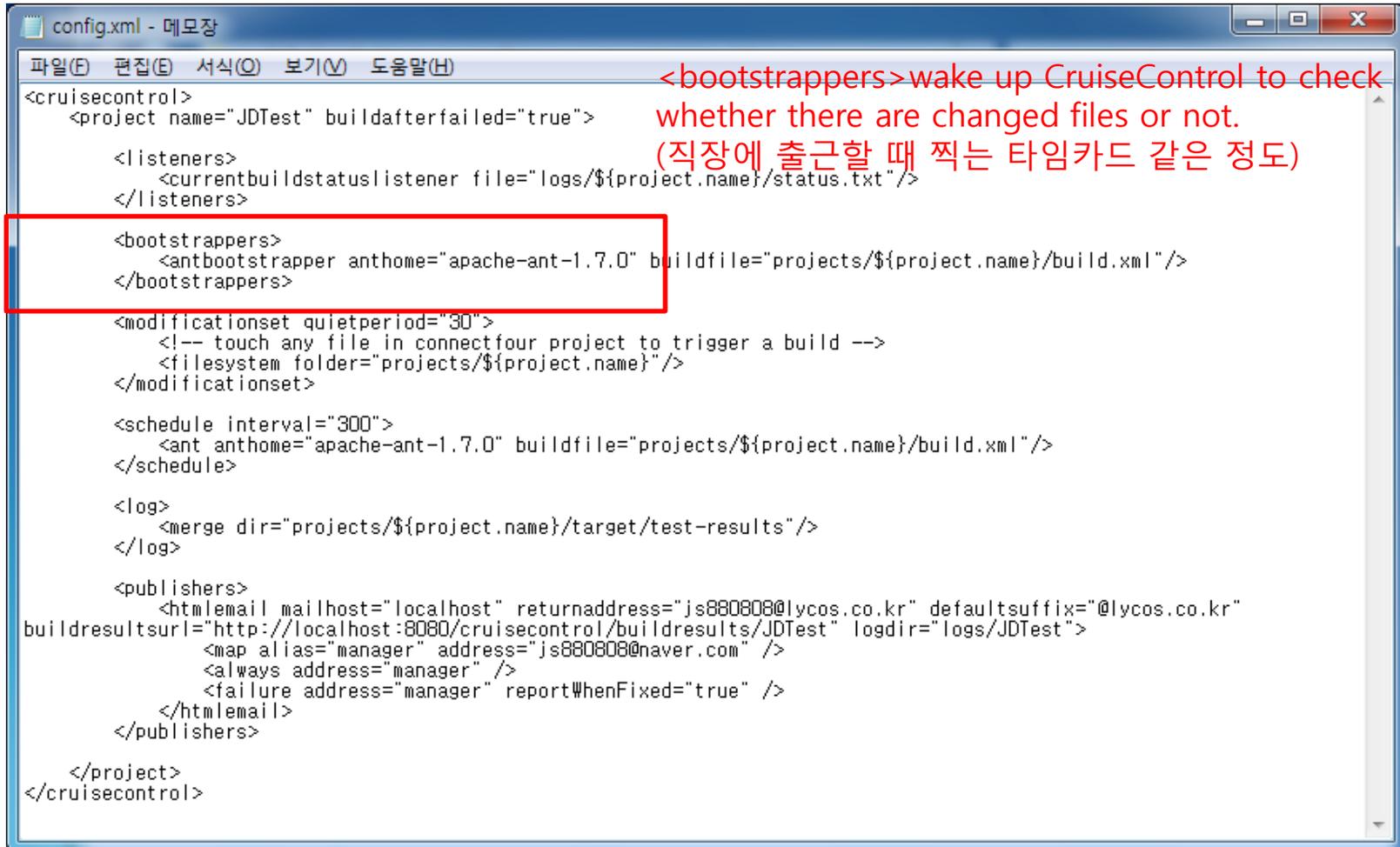
    <publishers>
      <htmlmail mailhost="localhost" returnaddress="js880808@lycos.co.kr" defaultsuffix="@lycos.co.kr"
      buildresultsurl="http://localhost:8080/cruisecontrol/buildresults/JDTest" logdir="logs/JDTest">
        <map alias="manager" address="js880808@naver.com" />
        <always address="manager" />
        <failure address="manager" reportWhenFixed="true" />
      </htmlmail>
    </publishers>

  </project>
</cruisecontrol>
```

<Project name> identified project name

How to use CruiseControl? - config.xml

Modify the config.xml

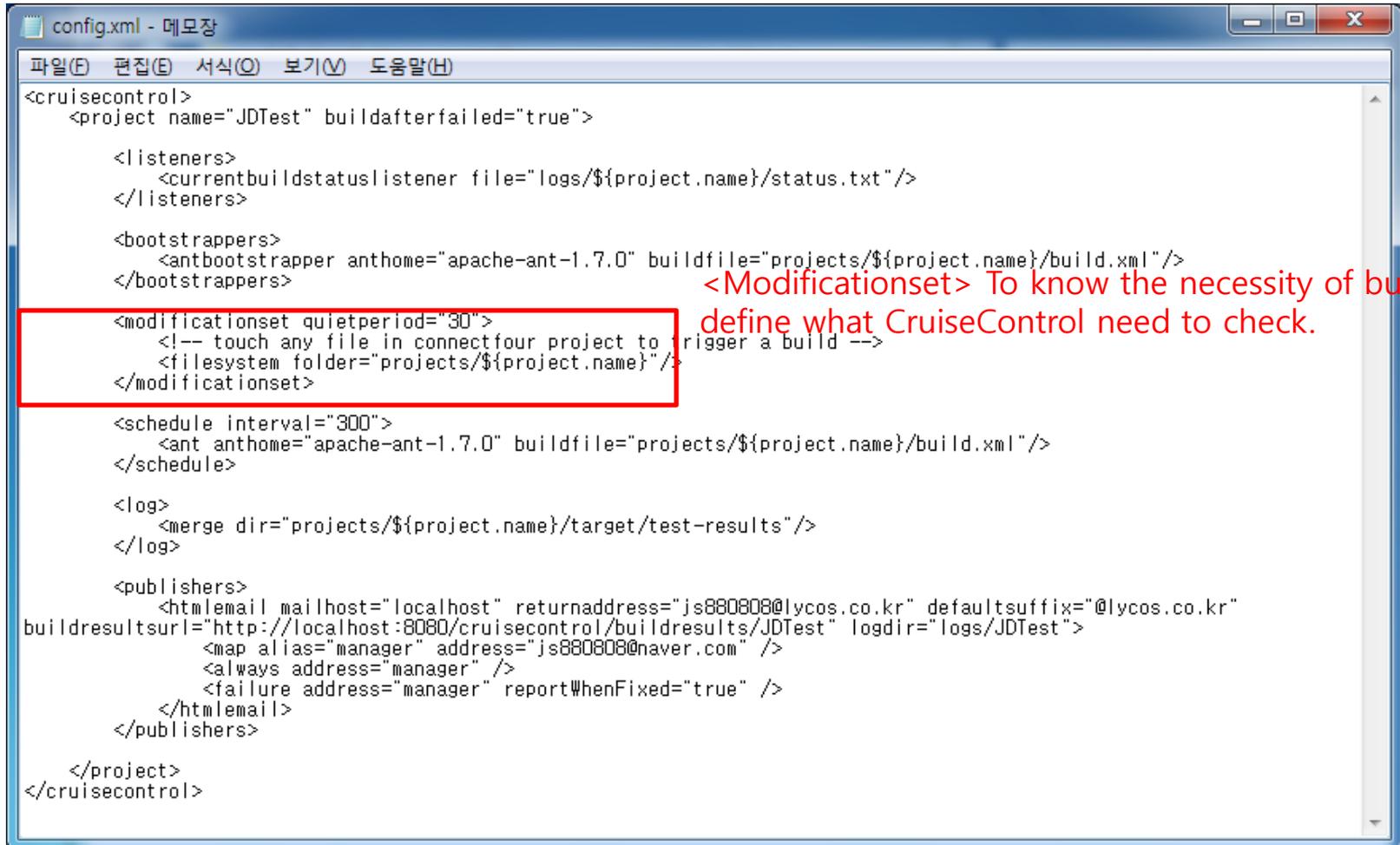


```
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<cruisecontrol>
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    <listeners>
      <currentbuildstatuslistener file="logs/${project.name}/status.txt"/>
    </listeners>
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    </bootstrappers>
    <modificationset quietperiod="30">
      <!-- touch any file in connectfour project to trigger a build -->
      <filesystem folder="projects/${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>
      <htmlemail mailhost="localhost" returnaddress="js880808@lycos.co.kr" defaultsuffix="@lycos.co.kr"
buildresultsurl="http://localhost:8080/cruisecontrol/buildresults/JDTest" logdir="logs/JDTest">
        <map alias="manager" address="js880808@naver.com" />
        <always address="manager" />
        <failure address="manager" reportWhenFixed="true" />
      </htmlemail>
    </publishers>
  </project>
</cruisecontrol>
```

<bootstrappers> wake up CruiseControl to check whether there are changed files or not.
(직장에 출근할 때 찍는 타임카드 같은 정도)

How to use CruiseControl? - config.xml

Modify the config.xml

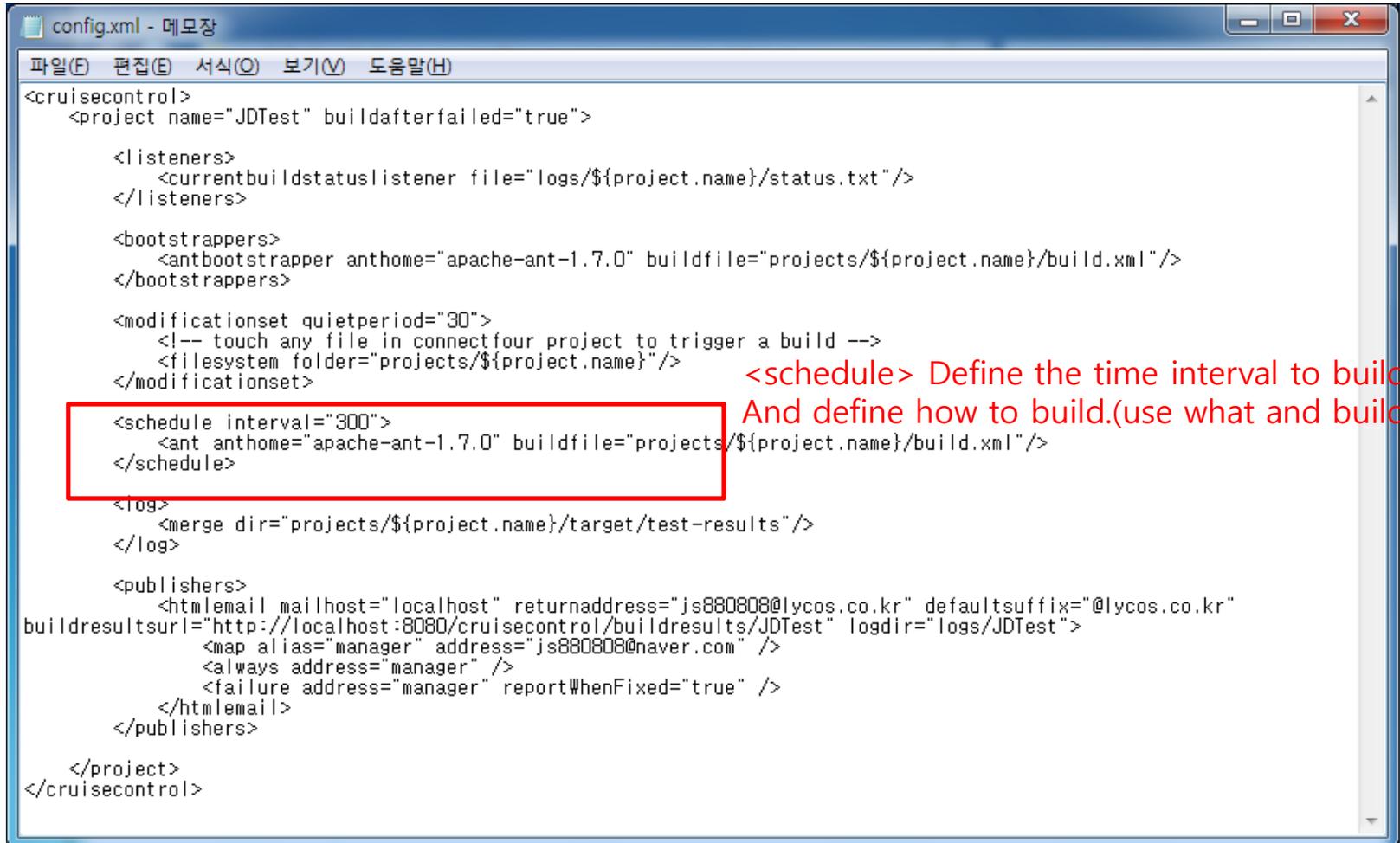


```
config.xml - 데모장
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<cruisecontrol>
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    </schedule>
    <log>
      <merge dir="projects/${project.name}/target/test-results"/>
    </log>
    <publishers>
      <htmlemail mailhost="localhost" returnaddress="js880808@lycos.co.kr" defaultsuffix="@lycos.co.kr"
      buildresultsurl="http://localhost:8080/cruisecontrol/buildresults/JDTest" logdir="logs/JDTest">
        <map alias="manager" address="js880808@naver.com" />
        <always address="manager" />
        <failure address="manager" reportWhenFixed="true" />
      </htmlemail>
    </publishers>
  </project>
</cruisecontrol>
```

<Modificationset> To know the necessity of build, define what CruiseControl need to check.

How to use CruiseControl? - config.xml

Modify the config.xml



```
<?xml version="1.0" encoding="UTF-8" ?>
<cruisecontrol>
  <project name="JDTest" buildafterfailed="true">
    <listeners>
      <currentbuildstatuslistener file="logs/${project.name}/status.txt"/>
    </listeners>
    <bootstrappers>
      <antbootstrapper anthome="apache-ant-1.7.0" buildfile="projects/${project.name}/build.xml"/>
    </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>
      <htmlemail mailhost="localhost" returnaddress="js880808@lycos.co.kr" defaultsuffix="@lycos.co.kr"
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        <always address="manager" />
        <failure address="manager" reportWhenFixed="true" />
      </htmlemail>
    </publishers>
  </project>
</cruisecontrol>
```

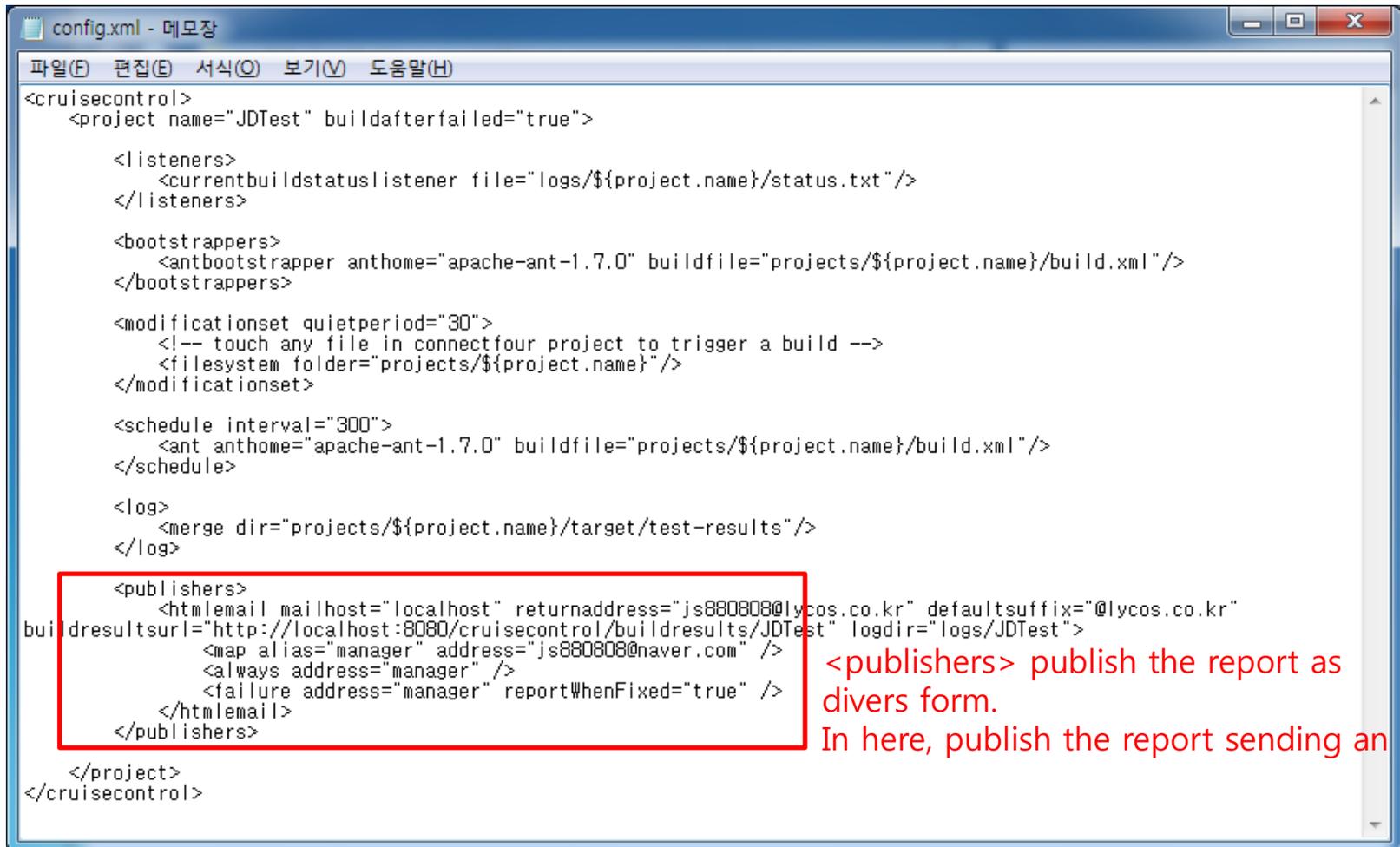
<schedule> Define the time interval to build.
And define how to build.(use what and build where)

How to use CruiseControl? - config.xml

Modify the config.xml

How to use CruiseControl? - config.xml

Modify the config.xml



```

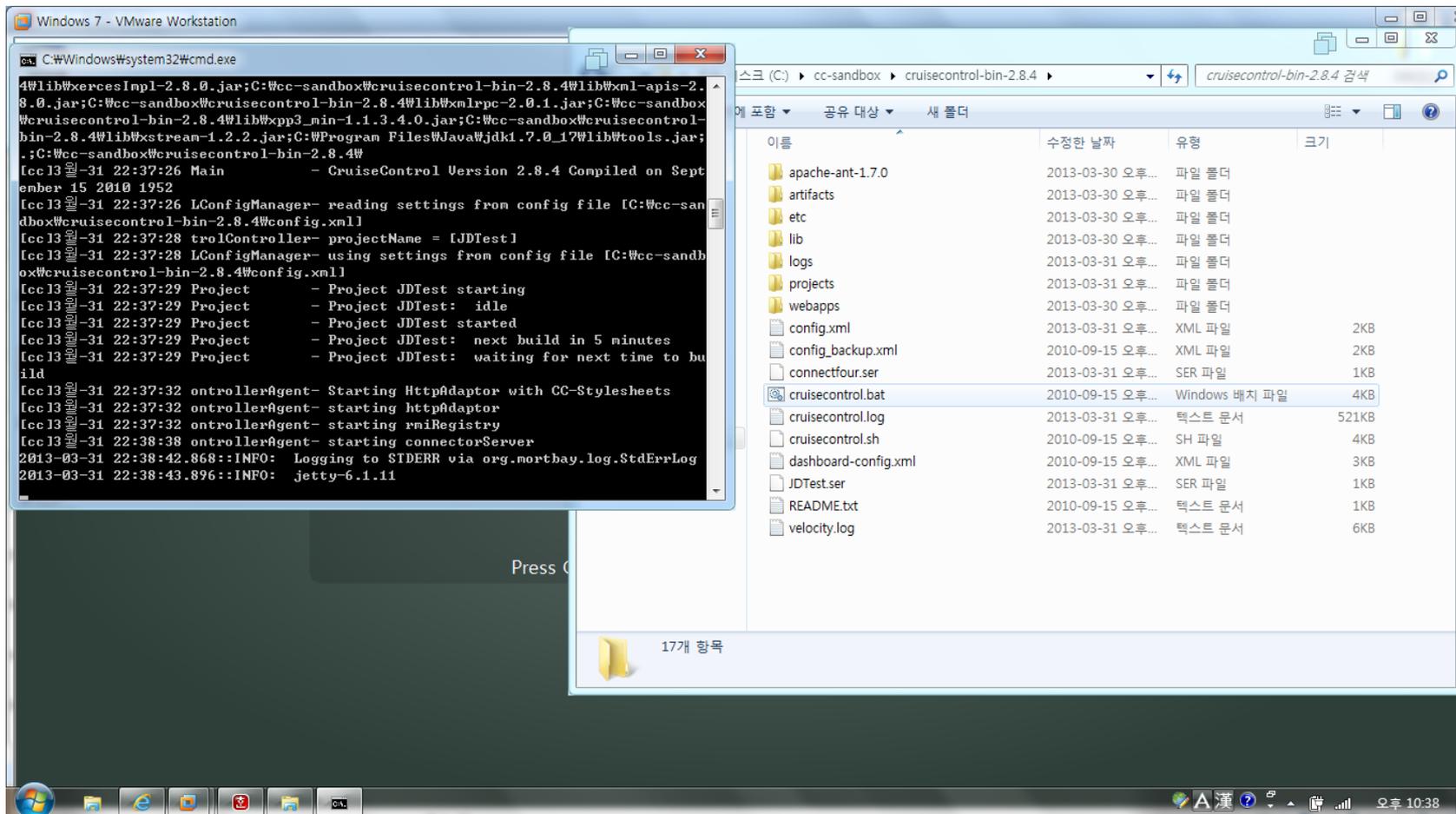
config.xml - 데모장
파일(F) 편집(E) 서식(O) 보기(V) 도움말(H)
<cruisecontrol>
  <project name="JDTest" buildafterfailed="true">
    <listeners>
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    </modificationset>
    <schedule interval="300">
      <ant anthome="apache-ant-1.7.0" buildfile="projects/${project.name}/build.xml"/>
    </schedule>
    <log>
      <merge dir="projects/${project.name}/target/test-results"/>
    </log>
    <publishers>
      <htmlemail mailhost="localhost" returnaddress="js880808@lycos.co.kr" defaultsuffix="@lycos.co.kr"
      buildresultsurl="http://localhost:8080/cruisecontrol/buildresults/JDTest" logdir="logs/JDTest">
        <map alias="manager" address="js880808@naver.com" />
        <always address="manager" />
        <failure address="manager" reportWhenFixed="true" />
      </htmlemail>
    </publishers>
  </project>
</cruisecontrol>

```

<publishers> publish the report as divers form.
In here, publish the report sending an email.

How to use CruiseControl?

Run the CruiseControl.bat



The screenshot displays a Windows 7 VM environment. On the left, a command prompt window shows the execution of the CruiseControl.bat file. The output indicates that the application is version 2.8.4, compiled on September 15, 2010. It shows the loading of configuration files and the start of a project named 'JDTest'. The project is currently idle, and the next build is scheduled in 5 minutes. The controller agent is also shown starting various services like the HTTP adaptor, registry, and connector server.

On the right, a file explorer window shows the contents of the 'cruisecontrol-bin-2.8.4' directory. The files and folders listed are:

이름	수정된 날짜	유형	크기
apache-ant-1.7.0	2013-03-30 오후...	파일 폴더	
artifacts	2013-03-30 오후...	파일 폴더	
etc	2013-03-30 오후...	파일 폴더	
lib	2013-03-30 오후...	파일 폴더	
logs	2013-03-31 오후...	파일 폴더	
projects	2013-03-31 오후...	파일 폴더	
webapps	2013-03-30 오후...	파일 폴더	
config.xml	2013-03-31 오후...	XML 파일	2KB
config_backup.xml	2010-09-15 오후...	XML 파일	2KB
connectfour.ser	2013-03-31 오후...	SER 파일	1KB
cruisecontrol.bat	2010-09-15 오후...	Windows 배치 파일	4KB
cruisecontrol.log	2013-03-31 오후...	텍스트 문서	521KB
cruisecontrol.sh	2010-09-15 오후...	SH 파일	4KB
dashboard-config.xml	2010-09-15 오후...	XML 파일	3KB
JDTest.ser	2013-03-31 오후...	SER 파일	1KB
README.txt	2010-09-15 오후...	텍스트 문서	1KB
velocity.log	2013-03-31 오후...	텍스트 문서	6KB

How to use CruiseControl?

Check the result in log file

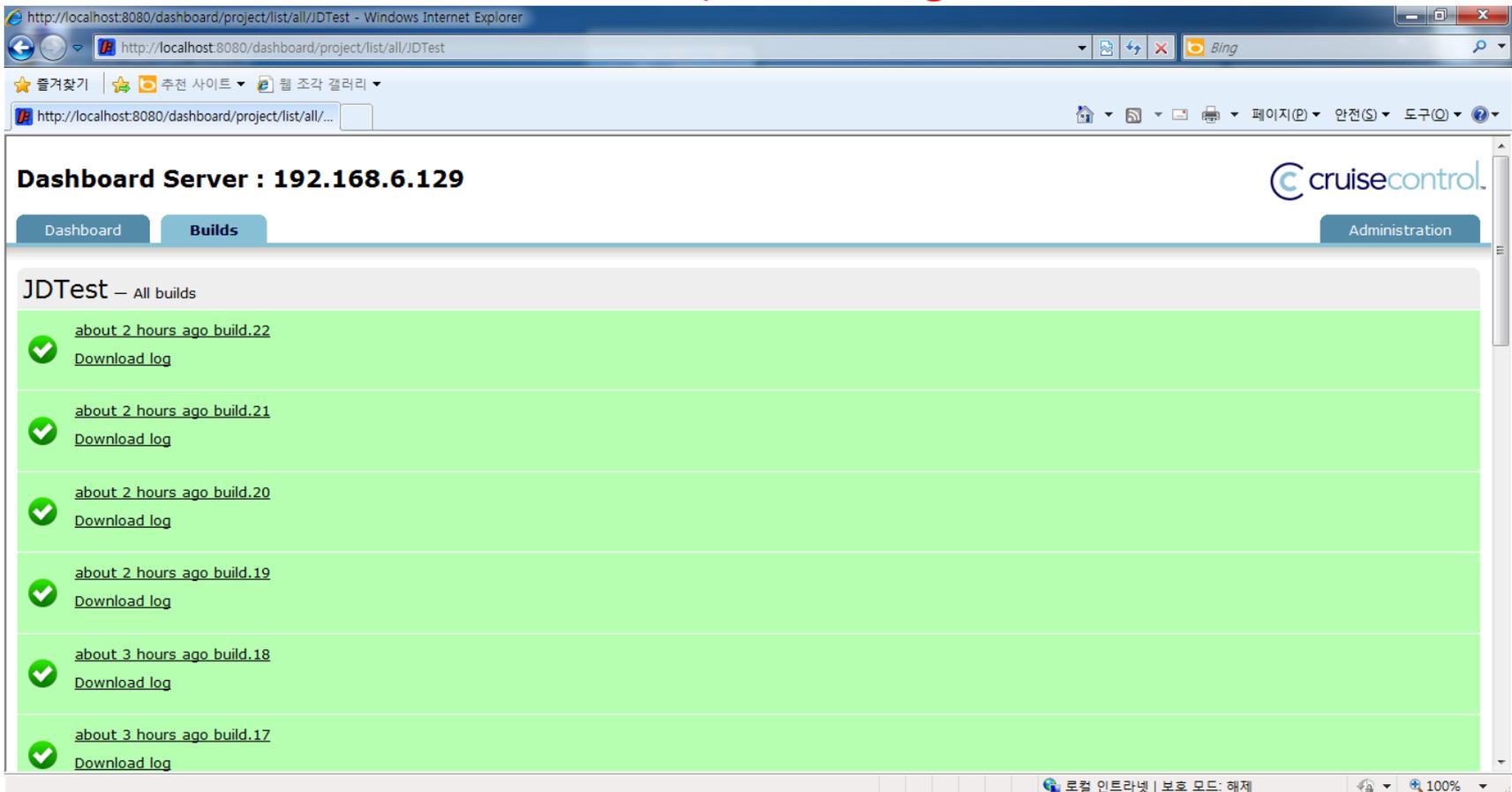
```

C:\Windows\system32\cmd.exe
at org.mortbay.jetty.Server.<init>(Server.java:294)
at org.mortbay.jetty.HttpConnector.<init>(HttpConnector.java:843)
at org.mortbay.jetty.HttpConnector.<init>(HttpConnector.java:843)
at org.mortbay.jetty.HttpConnector.<init>(HttpConnector.java:843)
at org.mortbay.io.nio.SelectorIOScheduler.<init>(SelectorIOScheduler.java:395)
at org.mortbay.thread.QueueableThread.<init>(QueueableThread.java:488)
Caused by: com.thoughtworks.xstream.XStreamException: Cannot construct net.sourceforge.cruisecontrol.CruiseControlException: no-args constructor
at com.thoughtworks.xstream.mapper.MapperImpl.newInstance(MapperImpl.java:98)
at com.thoughtworks.xstream.mapper.MapperImpl.newInstance(MapperImpl.java:98)
at com.thoughtworks.xstream.mapper.MapperImpl.unmarshal(MapperImpl.java:148)
at com.thoughtworks.xstream.XStream.fromXML(XStream.java:56)
... 35 more

cruisecontrol.log - 메모장
2013-03-31 22:42:32,302 [Thread-24] INFO ScriptRunner - compile:
2013-03-31 22:42:32,473 [Thread-24] INFO ScriptRunner - [javac] C:\cc-sandbox\cruisecontrol-bin-2.8.4\projects\JDTest\build.xml:32: warning: 'includeantruntime' was not set, defaulting to build.sysclasspath=last; set to false for repeatable builds
2013-03-31 22:42:32,754 [Thread-24] INFO ScriptRunner - [javac] Compiling 4 source files to C:\cc-sandbox\cruisecontrol-bin-2.8.4\projects\JDTest\result
2013-03-31 22:42:36,124 [Thread-24] INFO ScriptRunner - [javac] C:\cc-sandbox\cruisecontrol-bin-2.8.4\projects\JDTest\src\Map.java:66: error: cannot find symbol
return ab;
^
symbol:   variable ab
location: class Map
Note: C:\cc-sandbox\cruisecontrol-bin-2.8.4\projects\JDTest\src\Map.java uses unchecked or unsafe operations.
Note: Recompile with -Xlint:unchecked for details.
2013-03-31 22:42:36,457 [Thread-24] INFO ScriptRunner - [javac] 1 error
2013-03-31 22:42:36,482 [Thread-23] WARN ScriptRunner - BUILD FAILED
2013-03-31 22:42:36,482 [Thread-23] WARN ScriptRunner - C:\cc-sandbox\cruisecontrol-bin-2.8.4\projects\JDTest\build.xml:32: Compile failed; see the compiler error output for details.
2013-03-31 22:42:36,498 [Thread-23] WARN ScriptRunner - Total time: 5 seconds
2013-03-31 22:42:36,919 [Thread-21] INFO Project - Project JDTest: idle
2013-03-31 22:42:36,935 [Thread-21] INFO ProjectController - JDTest Controller: build progress event: idle
2013-03-31 22:42:36,935 [Thread-21] ERROR Project - exception attempting build in project JDTest
net.sourceforge.cruisecontrol.CruiseControlException: Bootstrap failed with error: C:\cc-sandbox\cruisecontrol-bin-2.8.4\projects\JDTest\build.xml:32: Compile failed; see the compiler error output for details.
at net.sourceforge.cruisecontrol.bootstrapers.AntBootstrapper.bootstrap(AntBootstrapper.java:68)
at net.sourceforge.cruisecontrol.Project.bootstrap(Project.java:779)
at net.sourceforge.cruisecontrol.Project.build(Project.java:193)
at net.sourceforge.cruisecontrol.Project.execute(Project.java:148)
at net.sourceforge.cruisecontrol.ProjectConfig.execute(ProjectConfig.java:408)
at net.sourceforge.cruisecontrol.ProjectWrapper.run(ProjectWrapper.java:69)
at java.lang.Thread.run(Thread.java:722)
2013-03-31 22:42:36,982 [Project JDTest thread] INFO Project - Project JDTest: next build in 5 minutes
2013-03-31 22:42:36,982 [Project JDTest thread] INFO Project - Project JDTest: waiting for next time to build
2013-03-31 22:42:36,982 [Project JDTest thread] INFO ProjectController - JDTest Controller: build progress event: waiting for next time to build
  
```

How to use CruiseControl?

Check the result in dashboard (<http://localhost:8080/dashboard>)
Check this result from other computers.(using the network)



The screenshot shows a web browser window displaying the CruiseControl dashboard. The address bar shows the URL <http://localhost:8080/dashboard/project/list/all/JDTest>. The dashboard header indicates the server IP is 192.168.6.129. The main content area is titled "JDTest - All builds" and lists six successful builds, each with a green checkmark icon and a "Download log" link. The builds are:

- about 2 hours ago build.22
- about 2 hours ago build.21
- about 2 hours ago build.20
- about 2 hours ago build.19
- about 3 hours ago build.18
- about 3 hours ago build.17

The browser's taskbar at the bottom shows the system tray with the date and time (10:00 AM, 10/10/2012) and the network status (로컬 인트라넷 | 보호 모드: 해제).

How to use CruiseControl? – Status page

Check the brief status of build in
<http://localhost:8080/cruisecontrol/index>

The screenshot shows a web browser window with the URL `http://localhost:8080/cruisecontrol/index`. The page content includes the CruiseControl logo and the text `$(build.version) $(build.version)`. Below this is a timestamp: `Jin-PC [13. 3. 31 오후 11:41]`. The main content is a table with the following data:

Project	Status (since)	Last failure	Last successful	Label	
connectfour	waiting (오후 11:39)		오후 4:57	build.1	Build

There is also an RSS icon below the table.

How to use CruiseControl? – Status page

Click the project name, and you can see Stage page

The screenshot shows the CruiseControl Status Page for project JDTest. The page is displayed in a Windows Internet Explorer browser window. The URL is `http://localhost:8080/cruisecontrol/buildresults/JDTest`. The page features a navigation menu with options: Build Results, Test Results, XML Log File, Metrics, Config, and Control Panel. The main content area displays the following information:

- BUILD COMPLETE - build.23**
- Date of build: 2013-03-31T13:48:13
- Time to build: 7 seconds
- Last changed: 2013-03-31T13:47:43
- Last log entry: [Build Artifacts](#)
- Errors/Warnings: (3)
 - C:\cc-sandbox\cruisecontrol-bin-2.8.4\projects\JDTest\src\build.xml:32: warning: 'includeantruntime' was not set, defaulting to build.sysclasspath=last; set to false for repeatable builds
 - Note: C:\cc-sandbox\cruisecontrol-bin-2.8.4\projects\JDTest\src\Map.java uses unchecked or unsafe operations.
 - Note: Recompile with -Xlint:unchecked for details.
- Unit Tests: (0)
 - No Tests Run
 - This project doesn't have any tests
- Modifications since last successful build: (15)

change	User	projects\JDTest\result\sample.jar	2013-03-31T13:47:43
change	User	projects\JDTest\result\Cal.class	2013-03-31T13:47:42
change	User	projects\JDTest\result>MainFrame\$1.class	2013-03-31T13:47:42
change	User	projects\JDTest\result>MainFrame\$2.class	2013-03-31T13:47:42
change	User	projects\JDTest\result>MainFrame\$3.class	2013-03-31T13:47:42
change	User	projects\JDTest\result>MainFrame\$4.class	2013-03-31T13:47:42

The 'Latest Build' table on the left side of the page is highlighted with a red box. It shows the following information:

Latest Build
2013/03/31 22:48:13 (build.23)
2013/03/31 20:48:48 (build.22)
2013/03/31 20:42:28 (build.21)
2013/03/31 20:36:04 (build.20)
2013/03/31 20:30:14 (build.19)
2013/03/31 19:57:35 (build.18)
2013/03/31 19:29:59 (build.17)

You can use diverse menu

Current build information

How to use CruiseControl? – Status page

Check the Test Result in TestResult Tab

Build Results	Test Results	XML Log File	Metrics	Config	Control Panel
---------------	---------------------	--------------	---------	--------	---------------

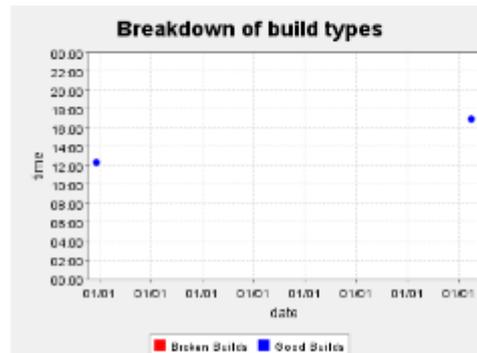
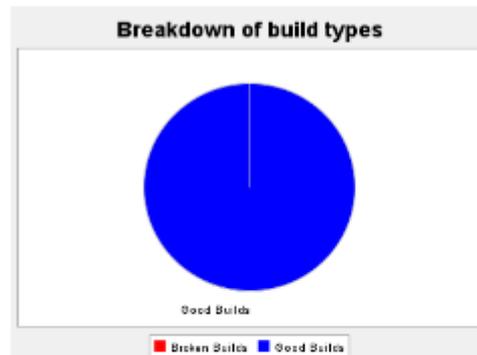
Name	Status	Time
.net.sourceforge.cruisecontrol.sampleproject.connectfour.CellTest		
testConstructor	Success	0.016
.net.sourceforge.cruisecontrol.sampleproject.connectfour.PlayingStandTest		
testFourConnected	Success	0.016
testFourConnectedHorizontally	Success	0.000
testFourConnectedDiagonally	Success	0.000
testStandControlsTurns	Success	0.000
testFullColumn	Success	0.000
testNonExistentColumn	Success	0.000
testNoWinner	Success	0.016
testDownwardDiagonalWins	Success	0.000
testWinningPlacement	Success	0.000
testNoWinningPlacementBeforeGameOver	Success	0.031

How to use CruiseControl? – Status page

Check the success and fail status of build in Matric Tab

Build Results	Last Results	XSL Log File	Matrix
---------------	--------------	--------------	--------

Number of Build Attempts 2
Number of Broken Builds 0
Number of Successful Builds 2



How to use CruiseControl? – Status page

Check and change the config.xml codes in Config Tab

The screenshot displays the CruiseControl Status Page. On the left, there is a sidebar with a 'Status Page' tab, a dropdown menu set to 'connectfour', and a 'Latest Build' section showing two builds: '2013/03/31 16:57:30 (build.1)' and '2005/12/09 12:21:03 (build.0)'. An RSS icon is also present. The main content area is titled 'Ready for Alpha-level testing' and contains a 'Reload from server' and 'Save to server' button pair. Below these are expandable sections for 'Listeners', 'Bootstrappers', 'Source Controls', 'Schedule', 'Log', and 'Publishers'. The 'Bootstrappers' section is expanded, showing a list with 'antbootstrapper' selected. Below the list is an 'Add bootstrapper:' dropdown menu with 'antbootstrapper' selected and an 'Add' button. To the right, a configuration tab titled 'antbootstrapper Configuration' is open, showing various settings: 'useQuiet', 'keepGoing', 'tempFile', 'useLogger', 'saveLogDir', 'progressLoggerLib', 'antWorkingDir', 'buildFile' (set to 'projects/\${project.name}/build.xml'), and 'antScript'. The 'antScript' field is currently empty.

Ready for *Alpha*-level testing

Listeners

Bootstrappers

- antbootstrapper

Add bootstrapper: antbootstrapper

Add

Source Controls

Schedule

Log

Publishers

antbootstrapper Configuration

useQuiet:

keepGoing:

tempFile:

useLogger:

saveLogDir:

progressLoggerLib:

antWorkingDir:

buildFile: projects/\${project.name}/build.xml

antScript:

...

Connect with SVN (Server)

Server PC – set the repository with SVN and execute the SVN
You need to make sure that repository location is the same with build location.

```
관리자: C:\Windows\system32\cmd.exe - svnservice -d -r C:\data
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Jin>cd ..
C:\Users>cd ..
C:\>cd data
C:\data>svnadmin create --fs-type fsfs repository
C:\data>svn checkout file:///C:\data\repository
Checked out revision 0.
C:\data>svnserve -d -r C:\data
```

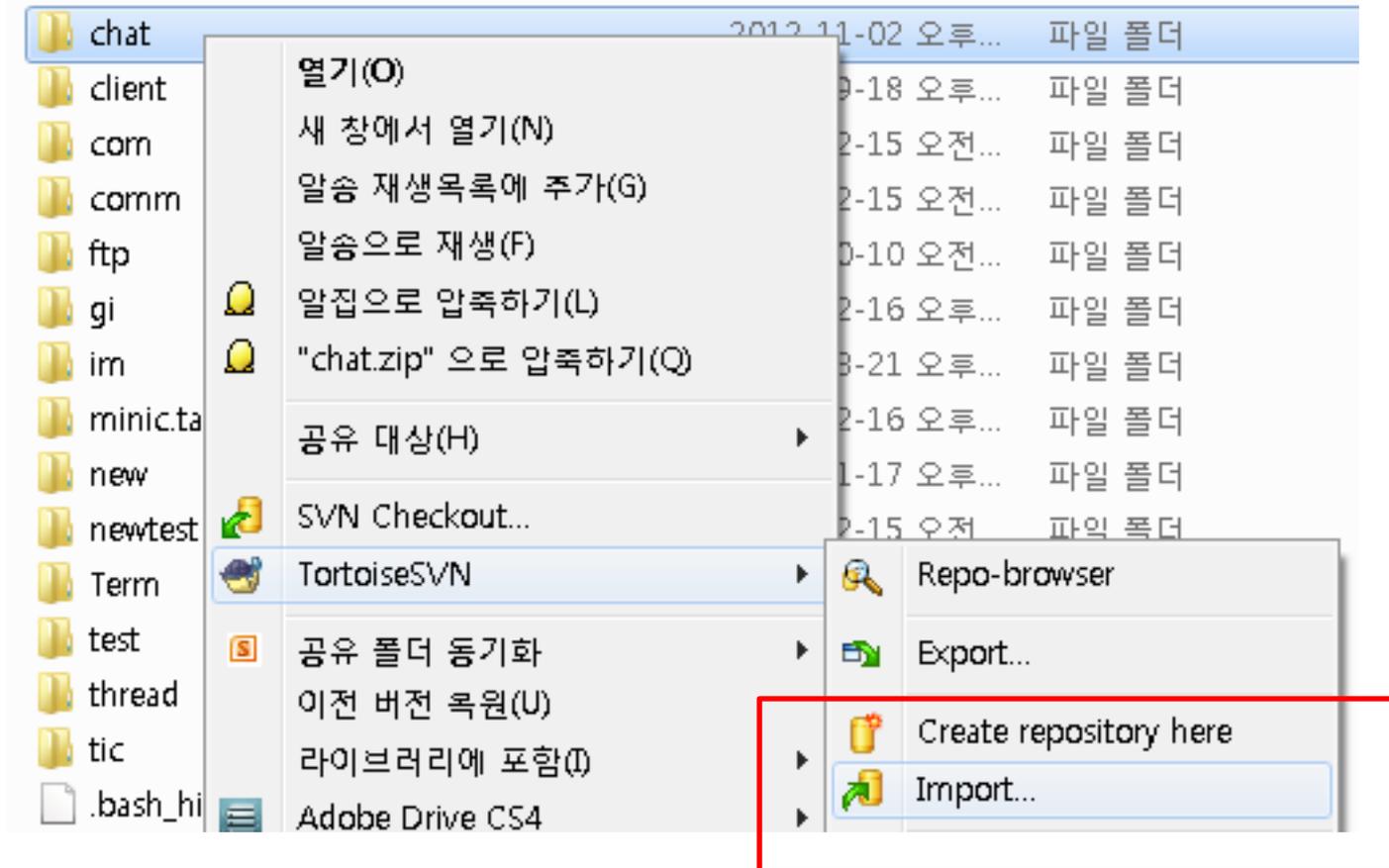
Set the repository.

Execute svn.

Connect with SVN (Client) – checkIn

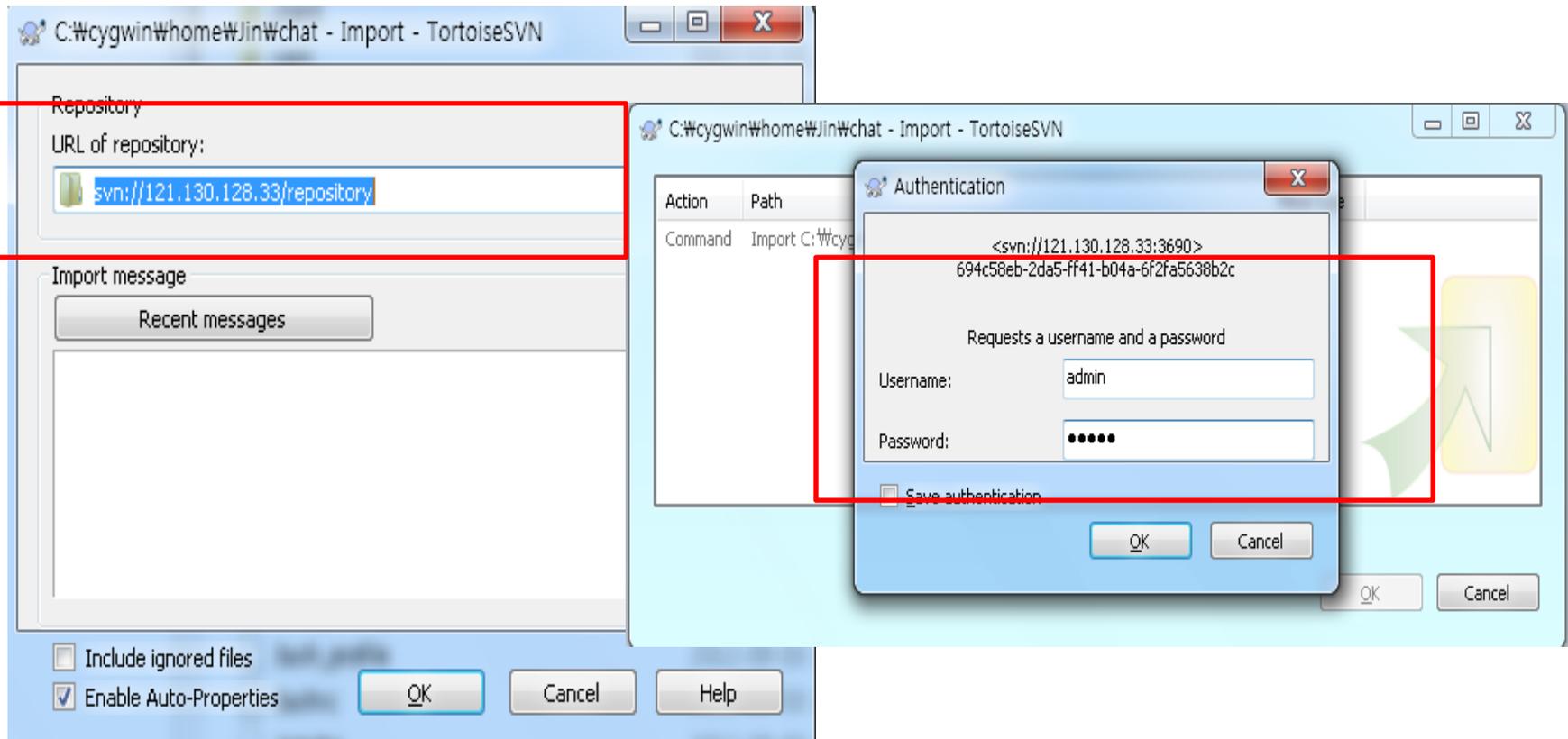
ClientPC – We installed turtoisSVN tool. It connects the SVN server more easily for the client users.

Click Import.



Connect with SVN (Client)

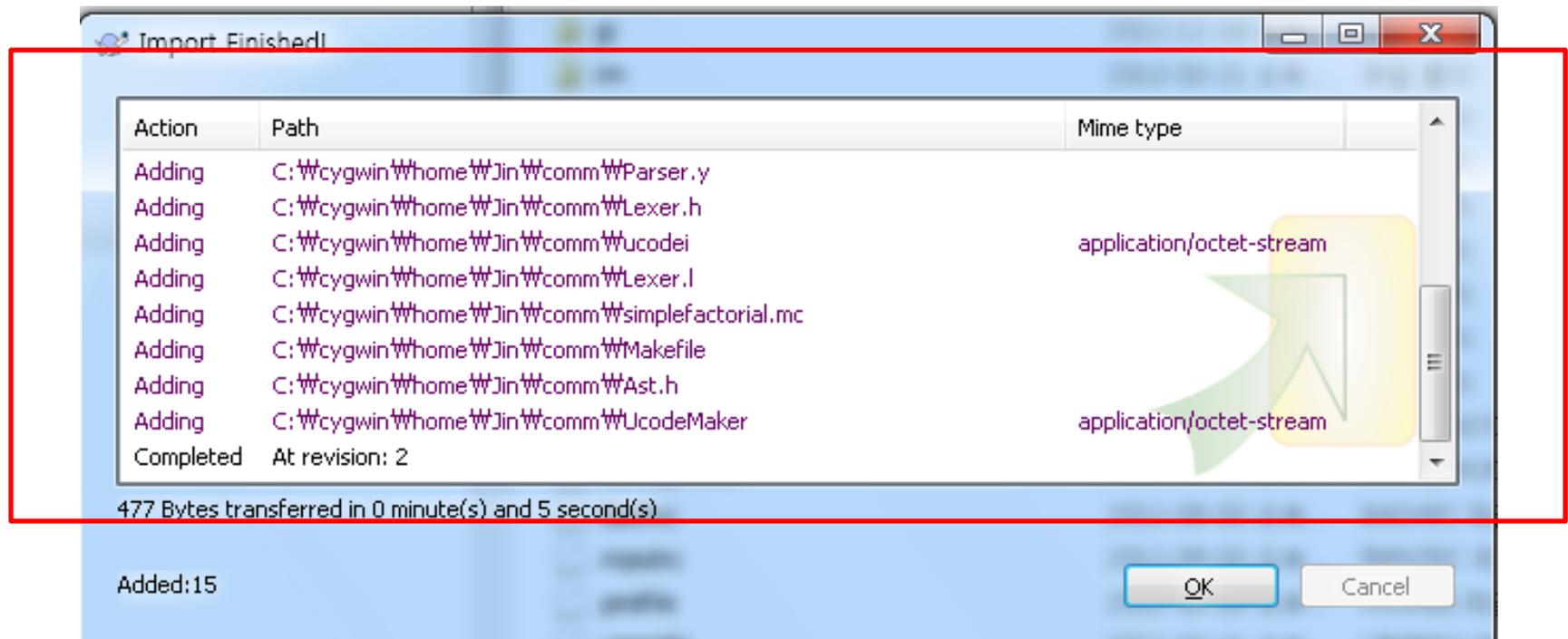
Type the server ip address to connect server.
And input username, password.



Connect with SVN (Client)

CheckIn completed.

It is important that connect SVN repository location with build location.



References

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도서

실용주의 프로그래머를 위한 프로젝트 자동화