

CTIP Environment

– Team 1

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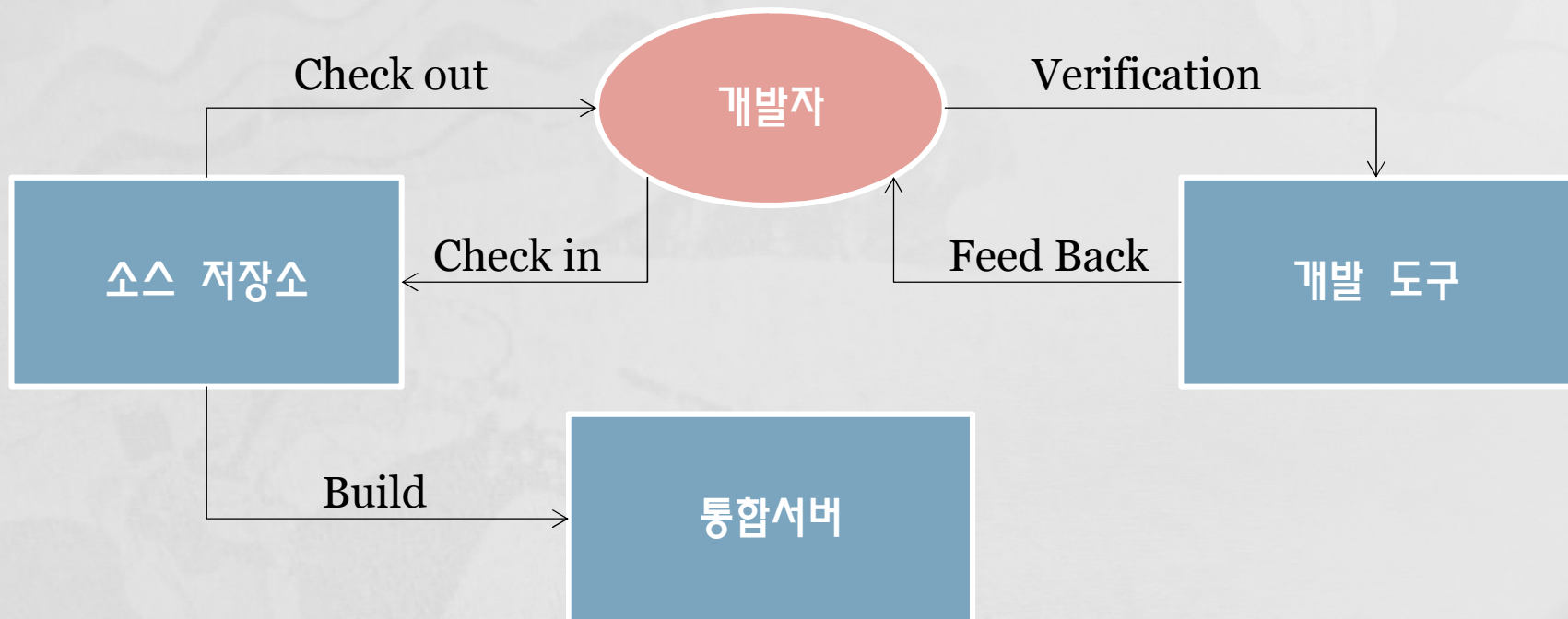
I . INTRODUCTION

1. CI & CTIP
2. Team 1' s IDE & Tool Selection

CI & CTIP

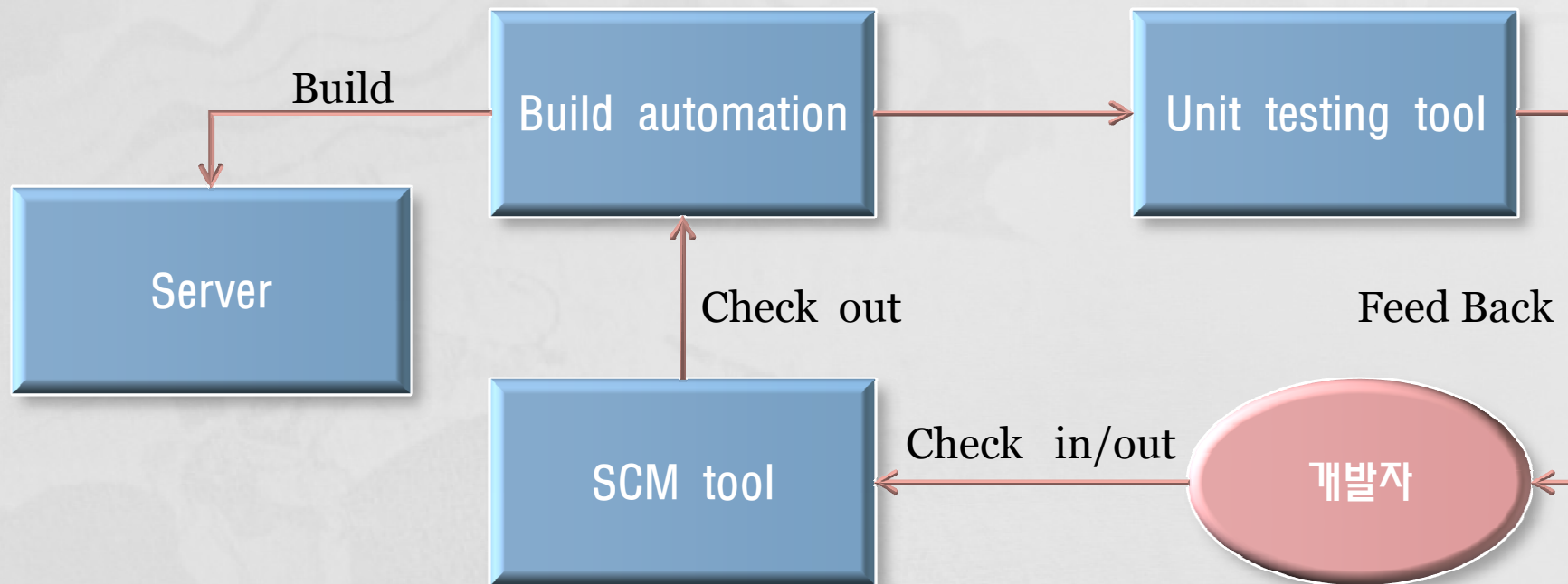
- CI (Continuous Integration)

- 지속적 통합
- 개발 막바지의 통합 작업을 없애기 위해 개발 과정에서 통합서버에 최신 버전의 개발 내용들을 계속하여 통합하는 작업



CI & CTIP

- CTIP (Continuous Test & Integration Platform)
 - CI 개념이 Java 기반의 개발 환경에서도 쉽게 적용되게 하기 위한 Platform
 - CI Server / Unit testing tool / CM tool / Build automation / WAS



Team 1' s IDE & Tool Selection

- Java 기반의 다양한 plug-in을 활용하고자 Eclipse를 사용하여 IDE을 구축
- Java기반 platform에서 수월한 작동을 기대하여 xUnit계열 tools 사용
- Hudson을 CI server로 하는 것을 전제로 함
- 각 tool의 장단점을 비교 분석하여 최선의 tool을 선정

II . TESTING TOOLS

1. Unit testing tool
2. CM tool
3. Build automation
4. WAS
5. CI Server

Unit testing tool

○ CUnit / CPPUnit

- C언어 / C++ 기반의 unit testing tool
- **Java기반의 Eclipse 사용을 전제로 하였기에 사용 X**

○ HTTPUnit

- 사용법의 이해와 test case 작성이 용이
- 컴파일이 필요 없어 특별한 tool 없이도 HTML을 직접 수정할 수 있다.
- ANT를 통해 자동으로 test suite 실행 가능
- 프로그램적 요소가 부족 (동적 수행 등)
- **Firefox (셀레늄 IDE 사용환경) 없으면 위 장점이 발휘되지 않음**

Unit testing tool

○ Junit - Selected

- Eclipse IDE에서의 기능을 충분히 활용 가능
- Test case에 따른 testing 흐름 조작성이 용이
- 공통적인 부분을 뽑아내기가 좋다.
- Testing 환경에서 다양한 기능 추가가 쉽다.
- preprocessor 내장 ; 자동으로 test case를 test suite로 만들어 줌

- 컴파일을 필요로 함
- Test method를 실행할 때마다 브라우저 open / close가 반복되어 상대적으로 느릴 수 있다.

SCM tool

→ Source Code Management tool

- CVS(Concurrent Versions System)

- File name 변경 허용 X

→ File 제거 후 다시 추가함

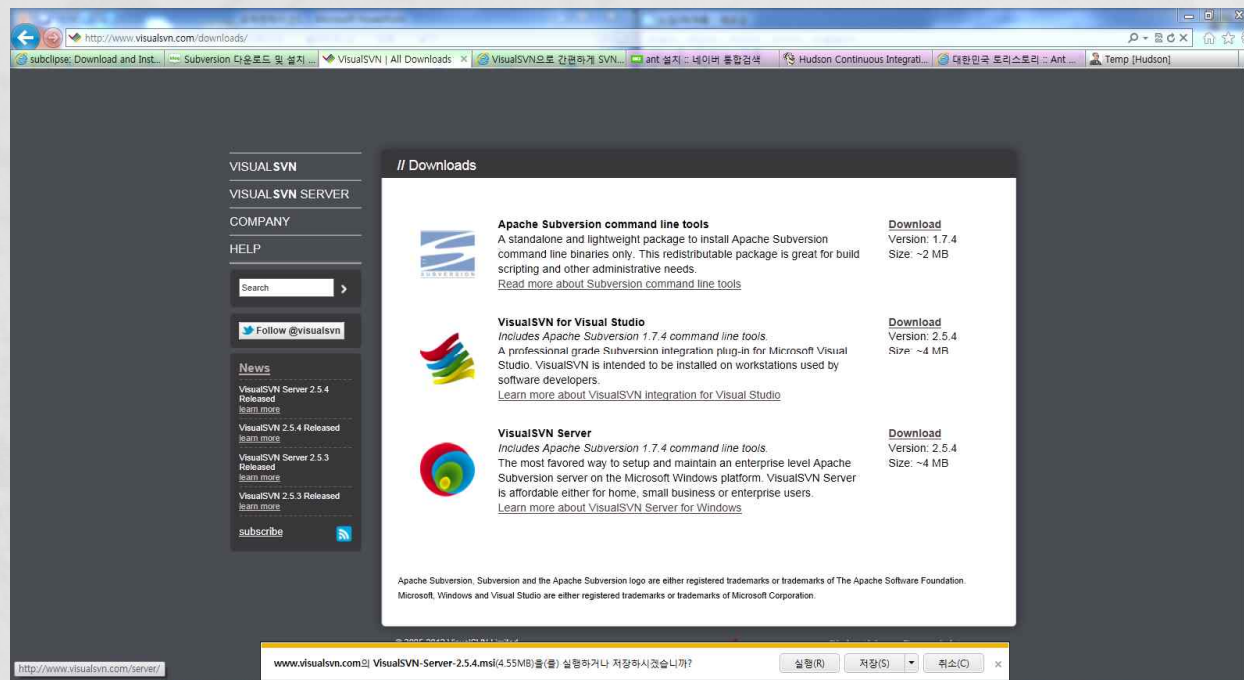
- Directory 이동 허용 X

→ Subdirectory의 File은 모두 제거 후 다시 추가

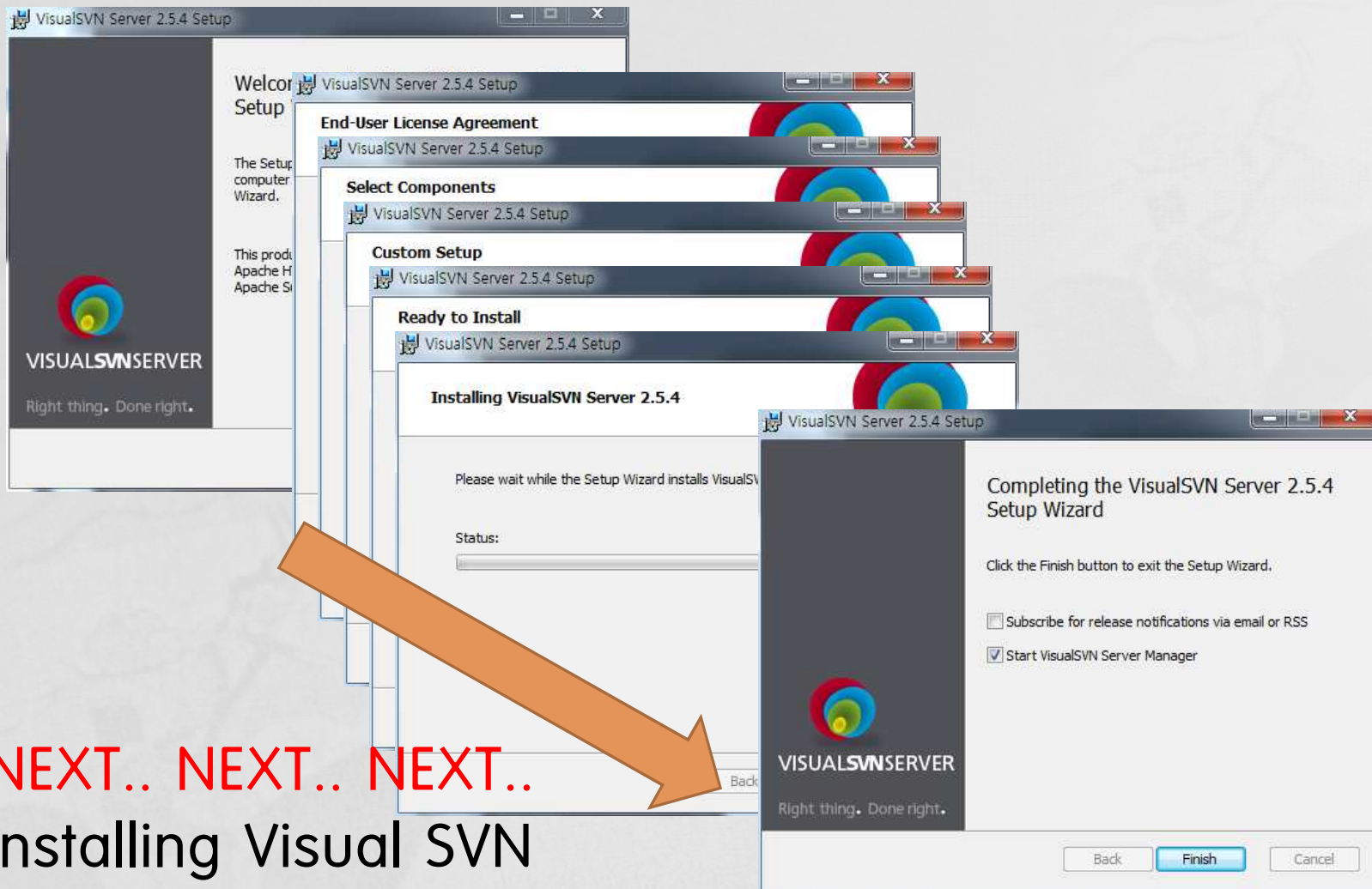
SCM tool

○ Subversion ; Visual SVN – Selected

- CVS의 한계를 극복하기 위해 개발된 버전 관리 툴
- commit할 때마다 전체 변경 사항에 대해 revision이 하나씩 증가
- File Name, Copy/Move, Version Management 지원
- <http://www.visualsvn.com/downloads/>



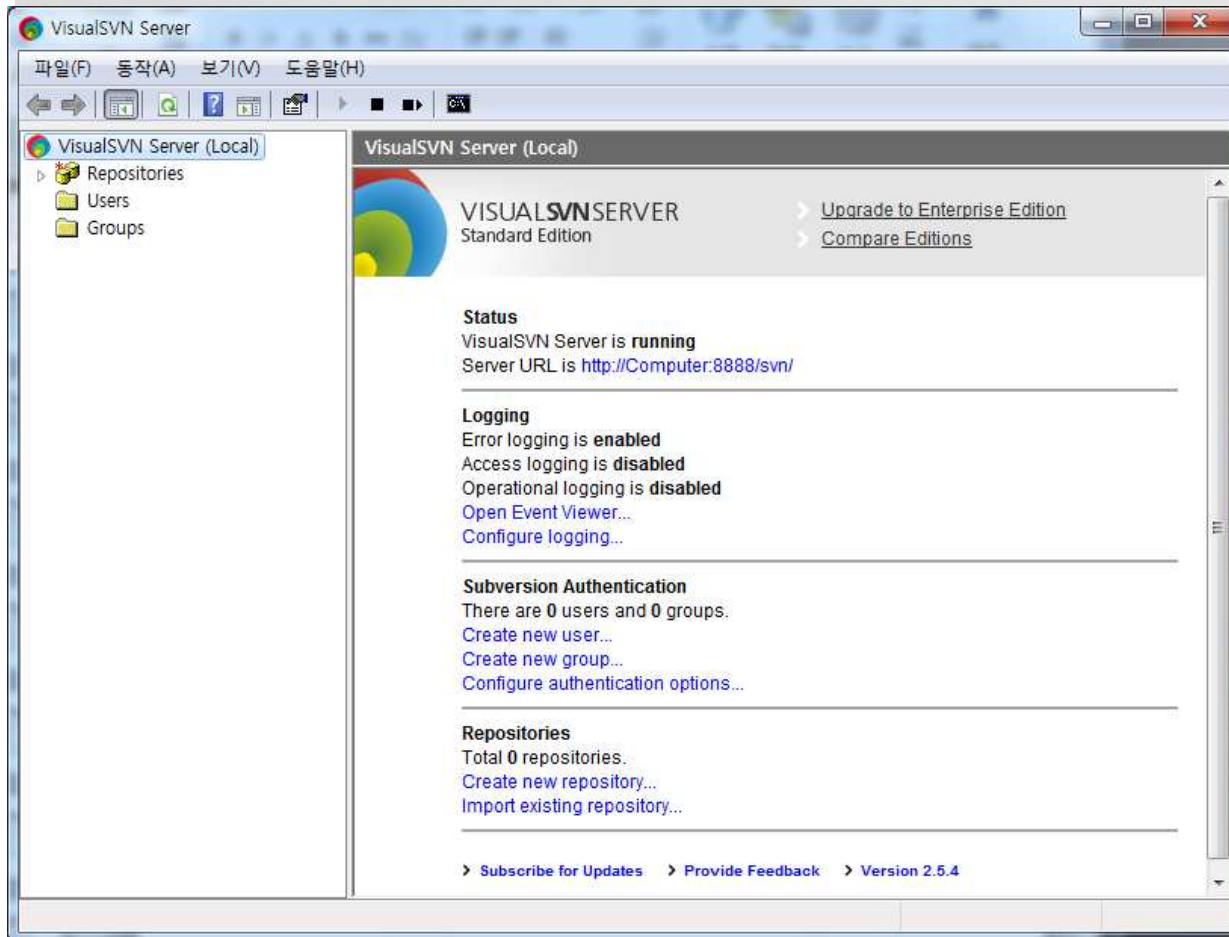
SCM tool - Subversion



NEXT.. NEXT.. NEXT..

Installing Visual SVN

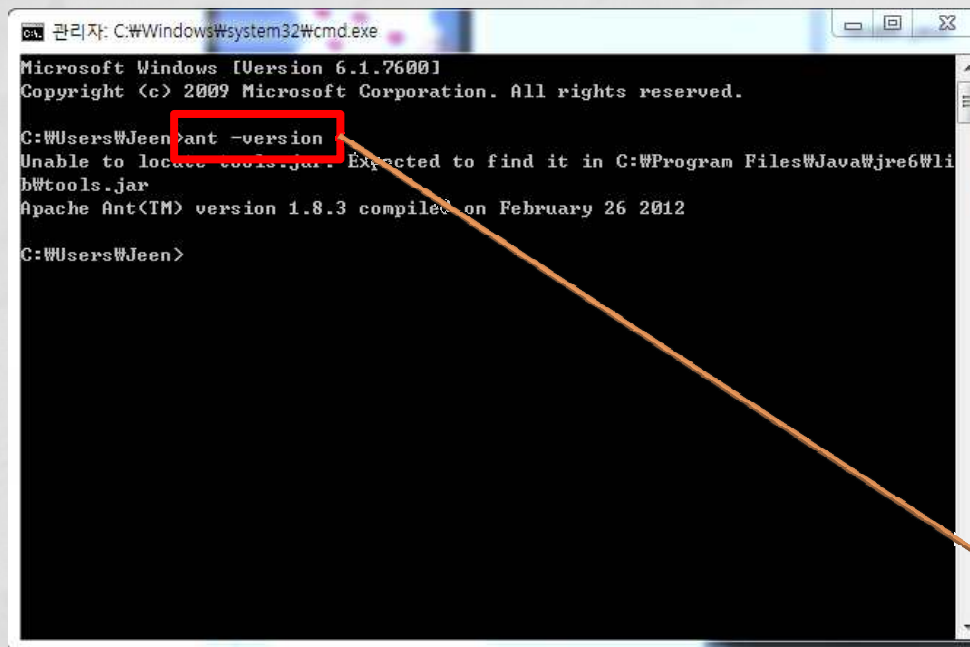
SCM tool - Subversion



Build automation

- ANT

- Java-Based Build automation tool
- Independent platform
- Easy install ; Eclipse에 Ant plug-in 내장



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

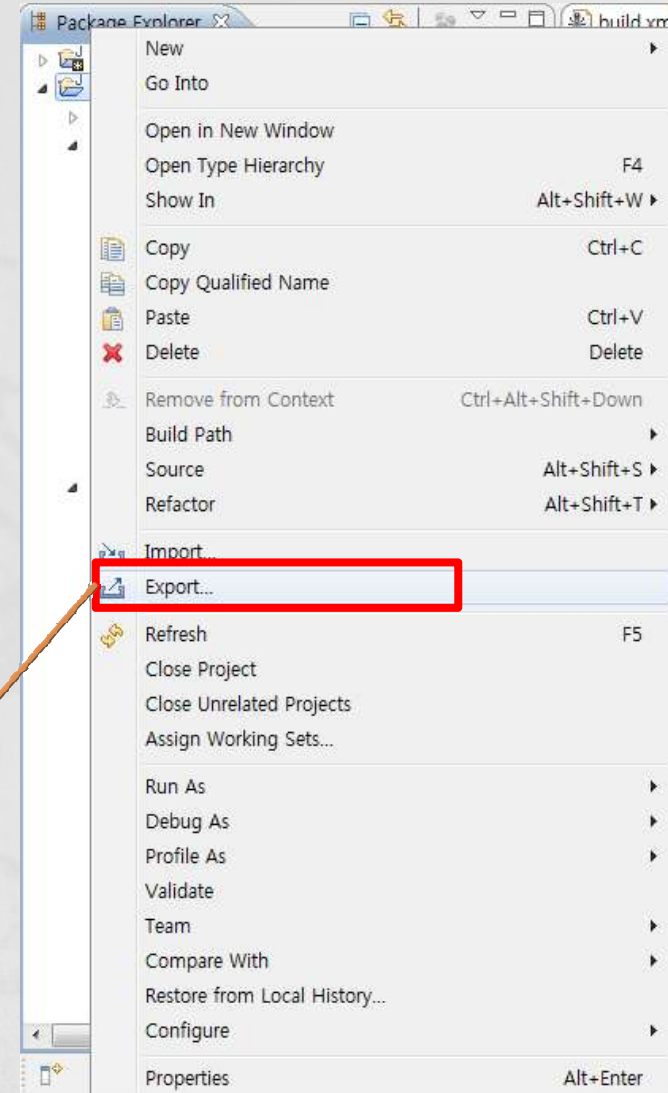
C:\Users\Jeen> ant -version
Unable to locate tools.jar. Expected to find it in C:\Program Files\Java\jre6\lib\
b\tools.jar
Apache Ant(TM) version 1.8.3 compiled on February 26 2012

C:\Users\Jeen>
```

Ant install 확인

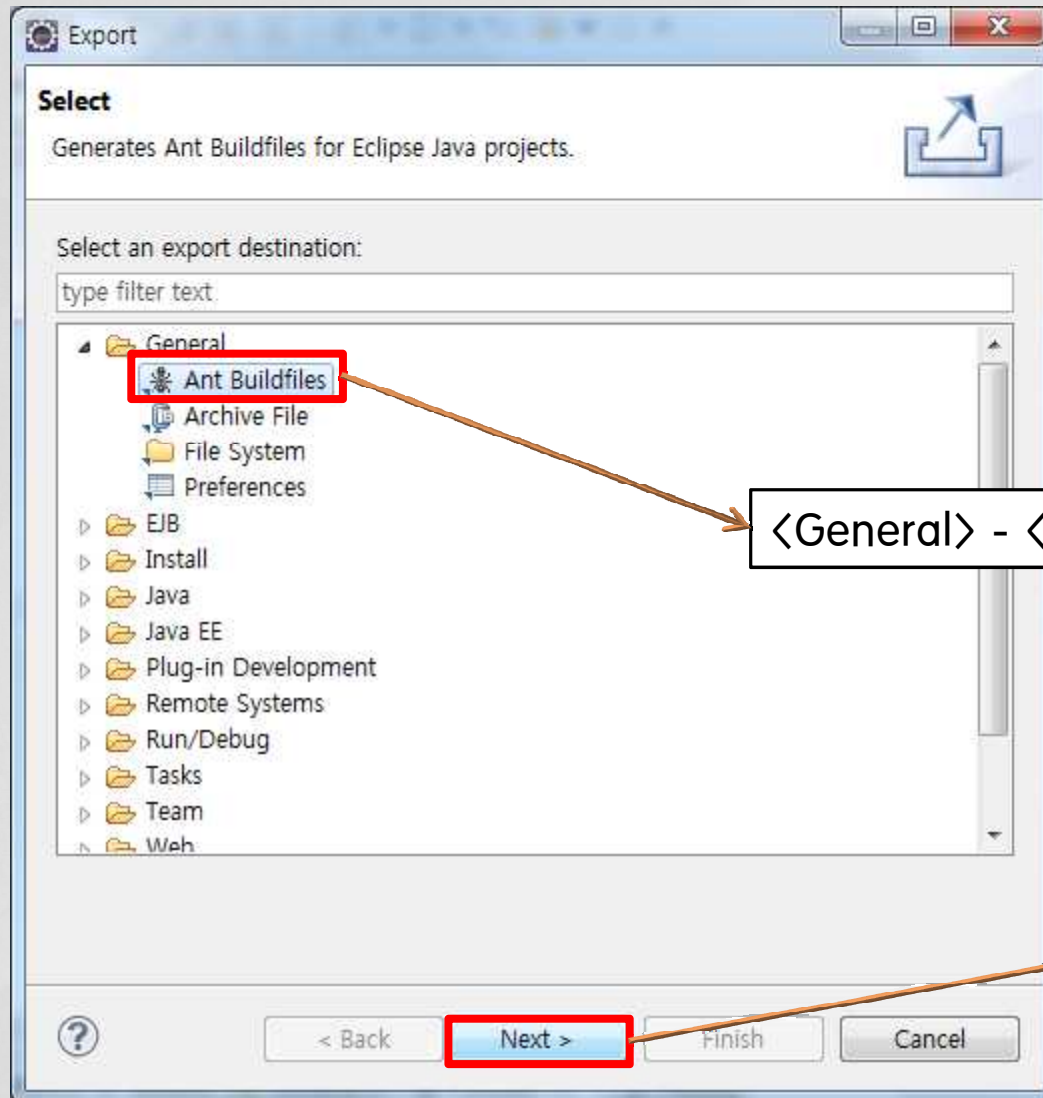
Build automation - Ant

- Eclipse에 내장된 tool
- XML type의 문서 작성
- 미리 작성된 eclipse 문서
메뉴 -Export



<Export..> Click

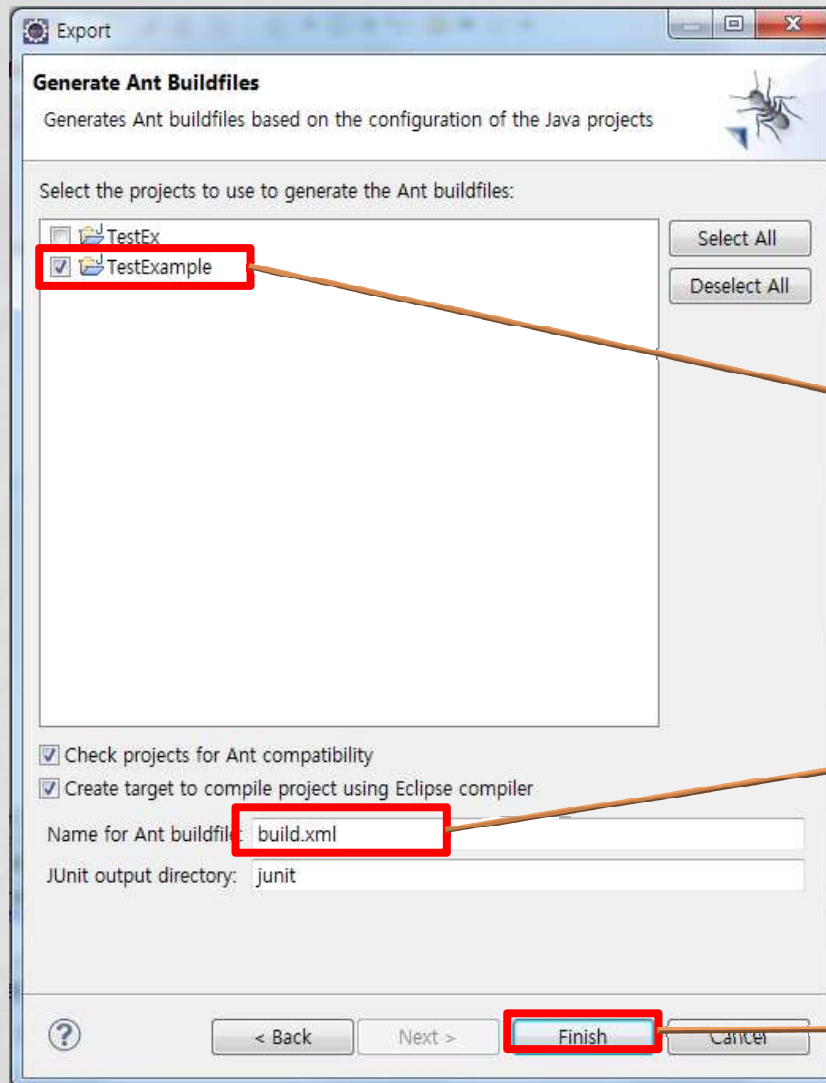
Build automation - Ant



<General> - <Ant Buildfiles> Select

<Next> Click

Build automation - Ant



Build하려는 항목 선택

Ant buildfile Name

<Finish> Click

Build automation - Ant

```
build.xml
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<!-- WARNING: Eclipse auto-generated file.
Any modifications will be overwritten.
To include a user specific buildfile here, simply create one in the same
directory with the processing instruction <?eclipse.ant.import?>
as the first entry and export the buildfile again. -->
<project basedir="." default="build" name="TestEx">
  <property environment="env"/>
  <property name="ECLIPSE_HOME" value="../../Desktop/4*1*/eclipse"/>
  <property name="debuglevel" value="source,lines,vars"/>
  <property name="target" value="1.6"/>
  <property name="source" value="1.6"/>
  <path id="TestEx.classpath">
    <pathelement location="bin"/>
  </path>
  <target name="init">
    <mkdir dir="bin"/>
    <copy includeemptydirs="false" todir="bin">
      <fileset dir="src">
        <exclude name="**/*.java"/>
      </fileset>
    </copy>
  </target>
  <target name="clean">
    <delete dir="bin"/>
  </target>
  <target depends="clean" name="cleanall"/>
  <target depends="build-subprojects,build-project" name="build"/>
  <target name="build-subprojects"/>
  <target depends="init" name="build-project">
```

Export 완료된 Ant buildfile
Build.xml

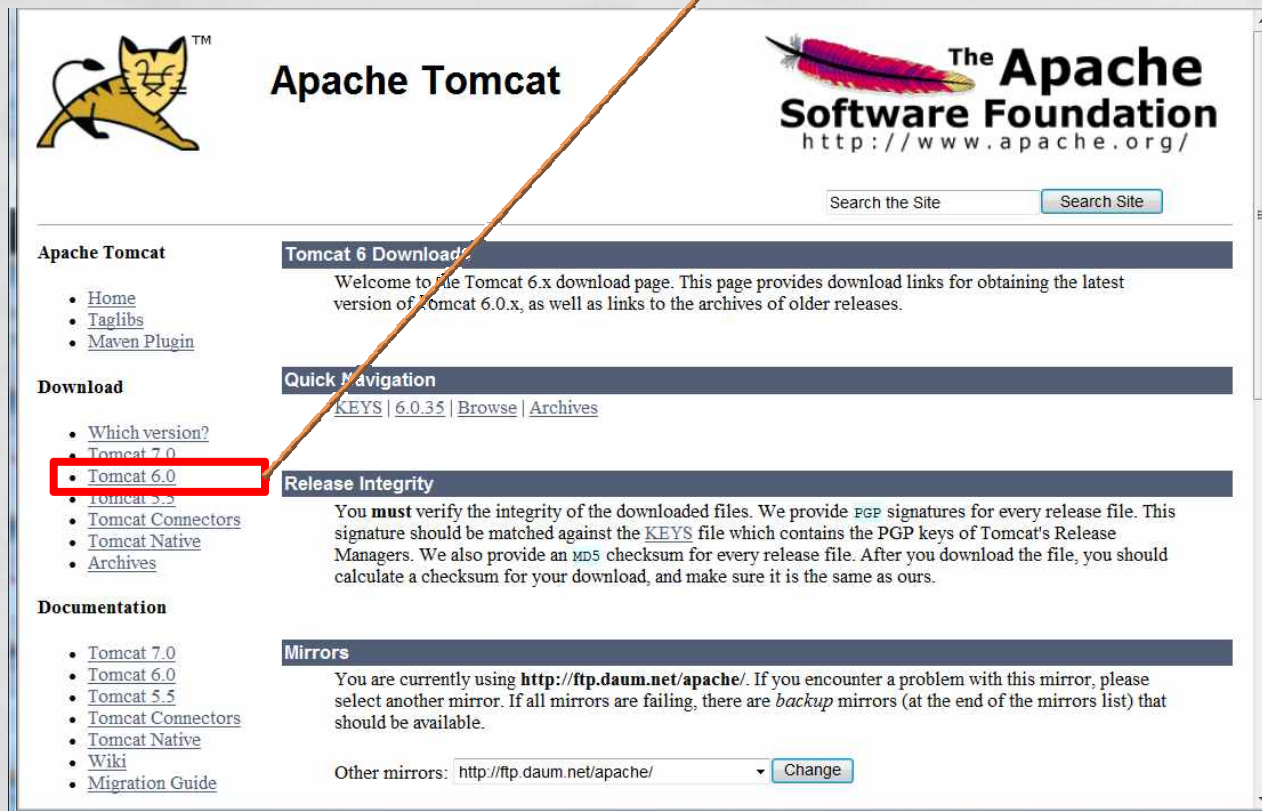
WAS

→ Web Application Server

● Tomcat

- <http://tomcat.apache.org/>

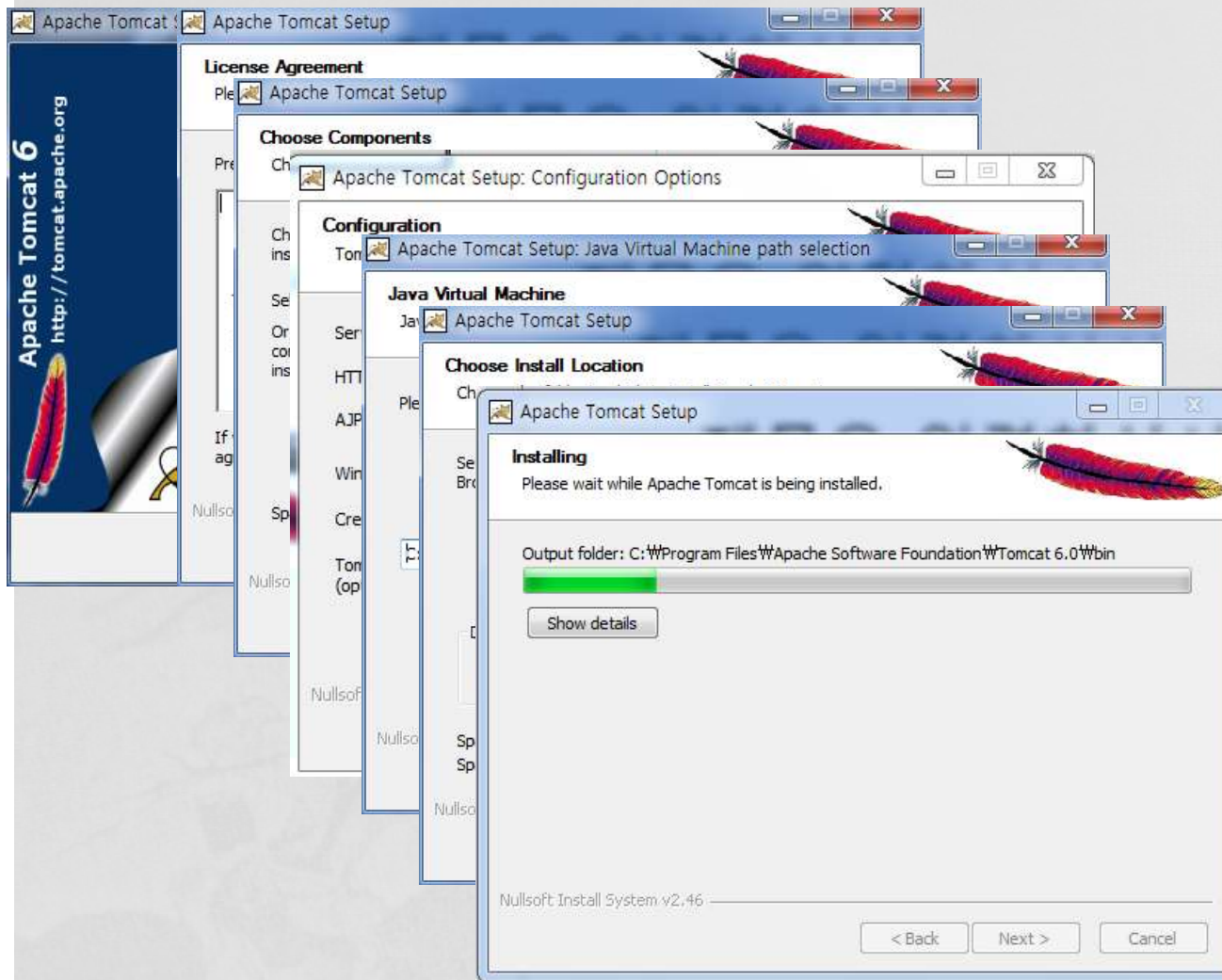
Tomcat version select & download



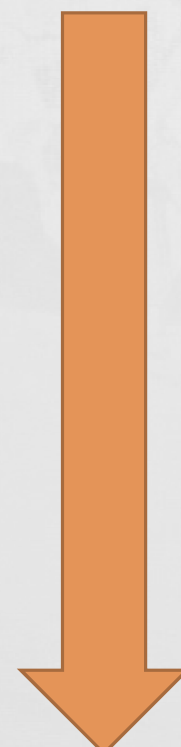
The screenshot shows the Apache Tomcat website. The main header includes the Apache Tomcat logo (a yellow cat) and the Apache Software Foundation logo (a feather). Below the logos is a search bar with the text "Search the Site" and a "Search Site" button. The main content area is divided into several sections:

- Apache Tomcat**: A navigation menu with links for [Home](#), [Taglibs](#), and [Maven Plugin](#).
- Download**: A list of links for [Which version?](#), [Tomcat 7.0](#), [Tomcat 6.0](#) (highlighted with a red box), [Tomcat 5.5](#), [Tomcat Connectors](#), [Tomcat Native](#), and [Archives](#).
- Documentation**: A list of links for [Tomcat 7.0](#), [Tomcat 6.0](#), [Tomcat 5.5](#), [Tomcat Connectors](#), [Tomcat Native](#), [Wiki](#), and [Migration Guide](#).
- Tomcat 6 Downloads**: A section with the text "Welcome to the Tomcat 6.x download page. This page provides download links for obtaining the latest version of Tomcat 6.0.x, as well as links to the archives of older releases."
- Quick Navigation**: A section with links for [KEYS](#), [6.0.35](#), [Browse](#), and [Archives](#).
- Release Integrity**: A section with the text "You **must** verify the integrity of the downloaded files. We provide **PGP** signatures for every release file. This signature should be matched against the **KEYS** file which contains the PGP keys of Tomcat's Release Managers. We also provide an **MD5** checksum for every release file. After you download the file, you should calculate a checksum for your download, and make sure it is the same as ours."
- Mirrors**: A section with the text "You are currently using <http://ftp.daum.net/apache/>. If you encounter a problem with this mirror, please select another mirror. If all mirrors are failing, there are *backup* mirrors (at the end of the mirrors list) that should be available." Below this text is a dropdown menu showing "Other mirrors: <http://ftp.daum.net/apache/>" and a "Change" button.

WAS - Tomcat



<Next> Click



WAS - Tomcat

Apache Tomcat

The Apache Software Foundation
<http://www.apache.org/>

If you're seeing this page via a web browser, it means you've setup Tomcat successfully. Congratulations!

As you may have guessed by now, this is the default Tomcat home page. It can be found on the local filesystem at:
`$CATALINA_HOME/webapps/ROOT/index.html`

where "\$CATALINA_HOME" is the root of the Tomcat installation directory. If you're seeing this page, and you don't think you should be, then you're either a user who has arrived at new installation of Tomcat, or you're an administrator who hasn't got his/her setup quite right. Providing the latter is the case, please refer to the [Tomcat Documentation](#) for more detailed setup and administration information than is found in the INSTALL file.

NOTE: For security reasons, using the manager webapp is restricted to users with role "manager". Users are defined in `$CATALINA_HOME/conf/tomcat-users.xml`.

Included with this release are a host of sample Servlets and JSPs (with associated source code), extensive documentation, and an introductory guide to developing web applications.

Tomcat mailing lists are available at the Tomcat project web site:

- users@tomcat.apache.org for general questions related to configuring and using Tomcat
- dev@tomcat.apache.org for developers working on Tomcat

Thanks for using Tomcat!

Powered by
TOMCAT
Copyright © 1999-2011 Apache Software Foundation
All Rights Reserved

Tomcat Install complete

CI Server

- Hudson

- CI(Continuous Integration) 위한 Java build tool
- Web-based UI → 별도의 Software install X
- 동시에 다수의 Project Management 가능
- Easy Install
- Easy Management ; Daily/Auto build&test

CI Server - Hudson

- Hudson - Install
 - <http://hudson-ci.org/>

The screenshot shows the Hudson website homepage. At the top, there is a navigation bar with links for HOME, MAILING LISTS, BUGS, WIKI, PLUGINS, SOURCE, and DOCUMENTATION. The main header features the Hudson logo and the tagline "Extensible continuous integration server". Below the header, there are three main columns: "Meet Hudson.", "Use Hudson", and "Extend Hudson". The "Use Hudson" column contains a cartoon character reading a book, with a small tooltip that says "Book or Manual Graphic". To the right of these columns is a "News" section with several articles, including "Hudson 3.0.0 Milestone 2 Released" and "Hardware Migration". At the bottom of the page, there is a "Download Hudson .war" section with a red box around the text "Latest Production Version: 2.2.0". An orange arrow points from this red box to a white box containing the Korean text "최신 버전의 Hudson.war download".

HUDSON
Extensible continuous integration server

HOME MAILING LISTS BUGS WIKI PLUGINS SOURCE DOCUMENTATION

Meet Hudson.
Find out what Hudson is and get started.

Use Hudson
See how to get more out of Hudson.

Extend Hudson
Learn how to build Hudson or extend Hudson by writing plugins.

Book or Manual Graphic

News

Hudson 3.0.0 Milestone 2 Released
The third milestone (alpha) release of Hudson from Eclipse is now available for download and evaluation from the [Eclipse Download page](#). This version represents a further rationalization of the Hudson libraries and dependencies. *Note that this milestone version is intended for evaluation only and should not be used in production.*

Hardware Migration
It's been a long road but Hudson is now bedding in on its new hardware configuration. This will provide a more stable environment and more power for the Hudson-on-Hudson plugins build.

Hudson 3.0.0 Milestone 1 Released

RSS: Twitter Feed • JIRA Updates

Download Hudson .war Download Native Pkg More Information About the Project

Latest Production Version: 2.2.0

2.2.0 Production Version:
Ubuntu / Debian

Want to Install Hudson? [Here's how>>](#)
[License](#)

Hudson is hosted partly as an Eclipse Foundation project and partly as a java.net project. For more information about this head on over to the [The Hudson Universe Page](#).

Change Log • Past Releases

최신 버전의 Hudson.war download

CI Server - Hudson

- Hudson URL: localhost.8080/hudson-version
- 새 작업: 새로 만들기 → 새로운 Hudson 작업 생성

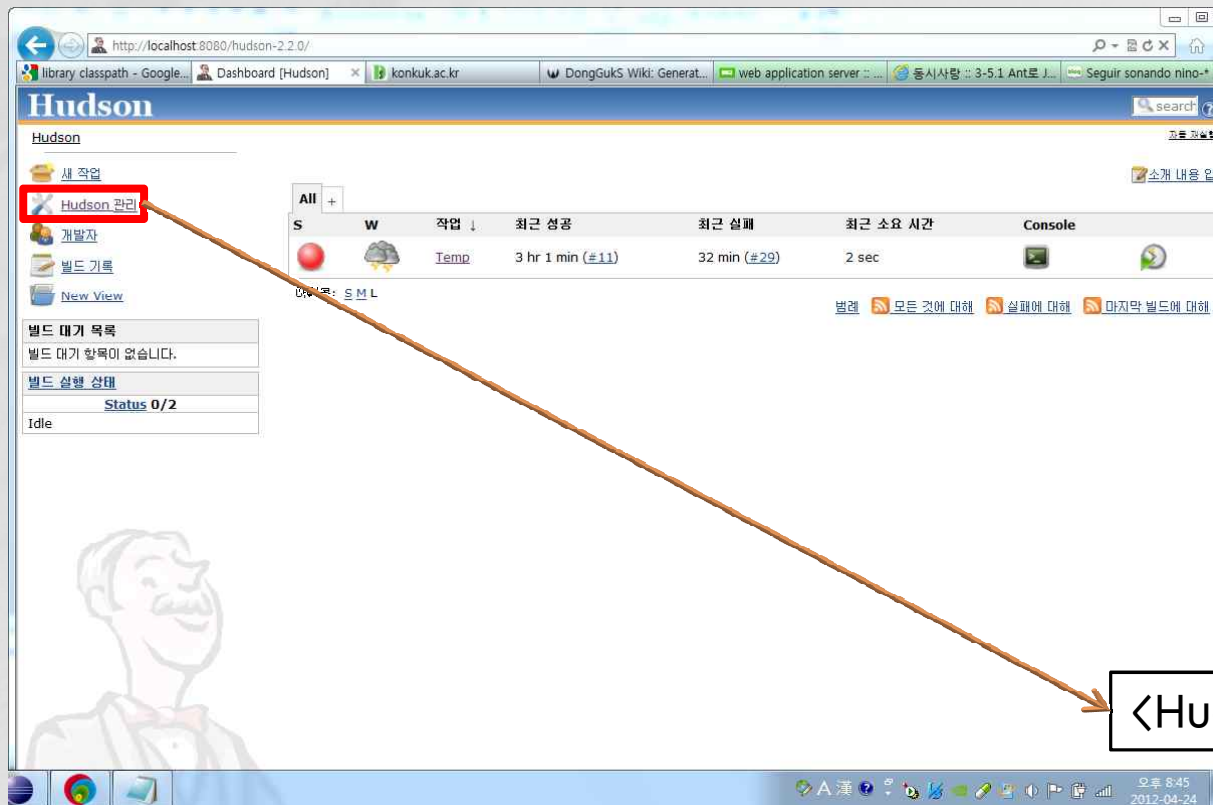
The screenshot shows the Hudson web interface. In the left sidebar, the '새 작업' (New Job) button is highlighted with a red box. An orange arrow points from this button to a text box that says '<새 작업> - <새로 만들기> Click'. The main dashboard displays a table of jobs:

S	W	작업 ↓	최근 성공	최근 실패	최근 소요 시간	Console
●	☁	Temp	3 hr 1 min (#11)	32 min (#29)	2 sec	

Below the table, there are links for '모든 것에 대해', '실패에 대해', and '마지막 빌드에 대해'. The bottom status bar shows the time as 8:45 PM on 2012-04-24.

CI Server - Hudson

- 사용할 Testing tools 와의 연동



The screenshot shows the Hudson web interface. On the left sidebar, the 'Hudson 관리' link is highlighted with a red box. An orange arrow points from this link to a callout box containing the text '<Hudson 관리> Click'. The main dashboard area displays a table of build jobs with columns for status (S, W), job name (작업), latest success (최근 성공), latest failure (최근 실패), and console link. The current job 'Temp' is shown with a status of 'S' and a duration of 3 hr 1 min.

S	W	작업 ↓	최근 성공	최근 실패	최근 소요 시간	Console
●	●	Temp	3 hr 1 min (#11)	32 min (#29)	2 sec	

CI Server - Hudson

http://localhost:8080/hudson-2.2.0/manage










Hudson

새 작업
Hudson 관리
개발자
빌드 기록
New View

빌드 대기 목록
빌드 대기 항목이 없습니다.
빌드 실행 상태
Status 0/2
Idle

Manage Hudson

⚠ Your container doesn't use UTF-8 to decode URLs. If you use non-ASCII characters as a job name etc, this will cause problems. See [Containers](#) and [Tomcat i18n](#) for more details.

-  **Configure System**
Configure global settings and paths.
-  [Reload Configuration from Disk](#)
Discard all the loaded data in memory and reload everything from file system. Useful when you modified config files directly on disk.
-  [Manage Plugins](#)
Add, remove, disable or enable plugins that can extend the functionality of Hudson.
-  [System Information](#)
Displays various environmental information to assist trouble-shooting.
-  [System Log](#)
System log captures output from java.util.logging output related to Hudson.
-  [Load Statistics](#)
Check your resource utilization and see if you need more computers for your builds.
-  [Hudson CLI](#)
Access/manage Hudson from your shell, or from your script.
-  [Script Console](#)
Executes arbitrary script for administration/trouble-shooting/diagnostics.
-  [Manage Nodes](#)
Add, remove, control and monitor the various nodes that Hudson runs jobs on.

오후 8:47
2012-04-24

<Configure System> Click

CI Server - Hudson

- Configure System 메뉴에서 JDK, Ant, Subversion을 연동 -> Save

JDK

JDK installations

Name	JAVA
JAVA_HOME	C:\Program Files\Java\jdk1.6.0_31

JDK automatic installer temporarily disabled, please install JDK manually and set JAVA_HOME

Add JDK

List of JDK installations on this system

모든 tool 이 설치되어
있어야 연동이 가능

Ant

Ant installations

Name	ANT
ANT_HOME	C:\ant

Install automatically

Add Ant

List of Ant installations on this system

Subversion

Subversion Workspace Version: 1.6 (svn:externals to file)

Subversion Revision Policy: Queue time

Exclusion revprop name:

Validate repository URLs up to the first variable name

Save
Click!

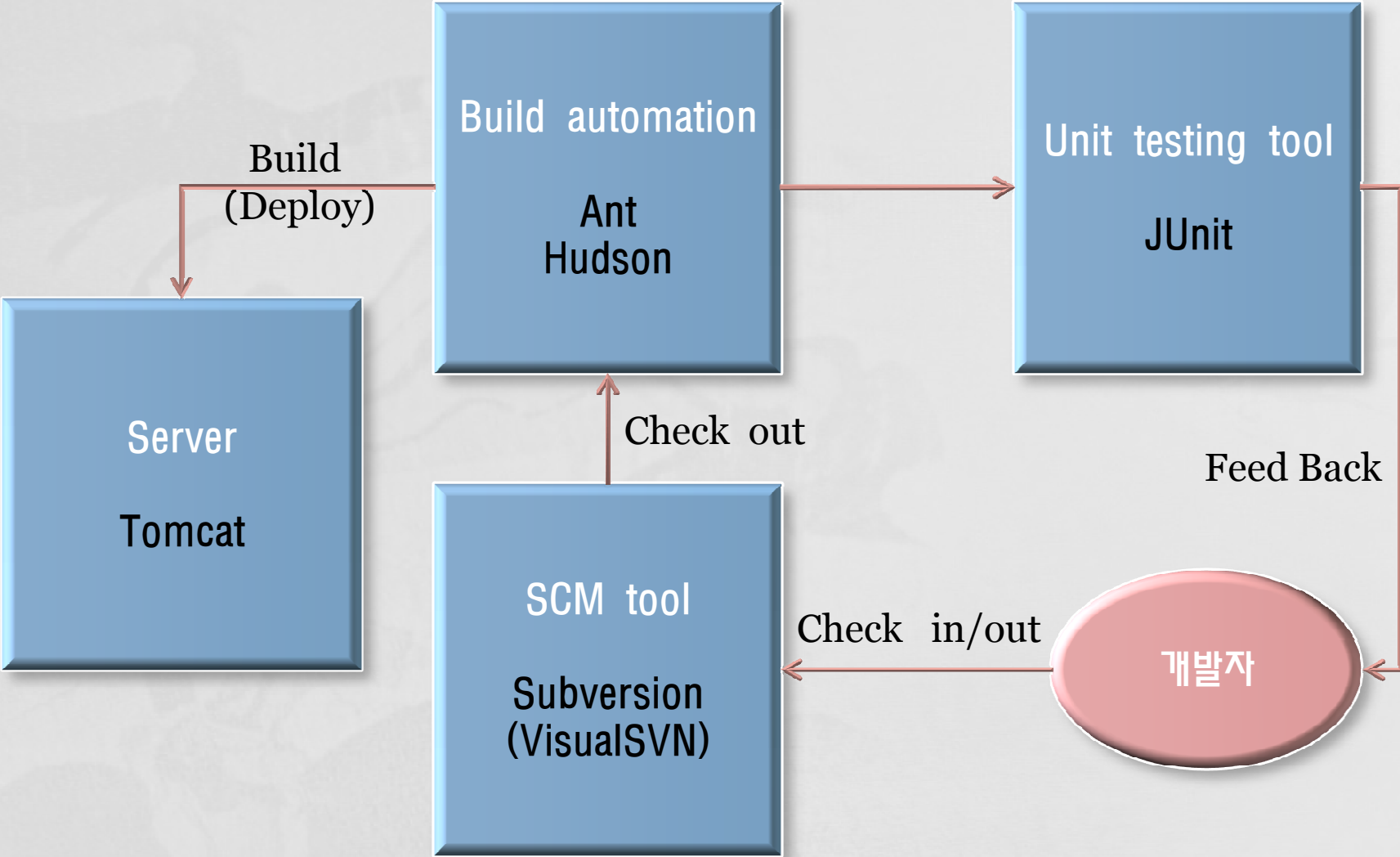
III . CTIP ENVIRONMENT

1. Selected tools
2. CTIP diagram

Selected tools

- Unit testing tool
 - Junit
- SCM tool (Source Code Management tool)
 - Subversion
- Build automation
 - Ant
- WAS (Web Application Server)
 - Tomcat
- CI Server
 - Hudson

CTIP diagram



IV . REFERENCES

References

- <http://cafe.daum.net/phynix/QhsV/3?docid=1KquxlQhsVl3l20111217231322&q=localhost%3A8080%2Fhudson-version>
- <http://doortts.tistory.com/entry/번역-허드슨을-이용한-지속적인-통합-Continuous-integration-with-Hudson-1>
- http://en.wikipedia.org/wiki/List_of_unit_testing_frameworks
- <http://www.sereform.com/?p=234>



THANK YOU

CTIP Environment of Team 1