

Eclipse Tips and Tricks

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- Do you know your Eclipse?
- Organize your environment
- Productivity
- Unit tests
- Debugging tips and tricks
- Conclusion
- (many screenshots are in the references at the end)

Do you know your Eclipse?

- Why this presentation and format of it?
- We use it a few hours each day but do we know it?
 - Each new version versions brings some improvements
 - Google for (Eclipse "New and Noteworthy") for your version e.g. for [Kepler 4.3](#) and read it a couple of times (e.g. QuickAssist (CTRL+1) new functions)
 - Choose the Eclipse IDE for [Java EE Developers over the Java Developers](#) version
 - Learn from your coworkers and share

Interrupt me to share your own tricks

Organize your environment (Windows)

■ Start with Windows

- prefer a workspace at the root of C:
- stack in the quick launch bar all your favorite tools (browsers, editors, development tools...)
- setup your [Explorer / Folder Options / General / Navigation pane] options
- set all your folders the same [Explorer / Folder Options / View]
- install some [PowerToys](#) (AltTab, Open Command Window Here, [SendTo](#))
- An alternative to “Open Command Window Here”, try “shift + right click” on a folder of the Windows Explorer

■ The Java cache issue

- create a shortcut to it in the quick launch bar
- run it on log-in
- run as a scheduled task (as a script, beware of password changes, your code stops running)

■ Avoid using ProjectSetup for the check-ins in the tip of a branch?

- 500 MB download, 5 minutes of work and a waste of time
- You can instead have the projects always ready as ‘free’ check-outs
- update them, merge the changes from your activity, recompile at least, retest and commit
- have a script doing the SVN reverts and updates, use it manually and/or schedule it at night
- side effect, you need updating the eclipse project for new versions of JDK, tomcat, libraries

Organize your environment (Eclipse)

- Eclipse 4.3 Kepler works with all our releases (1 code ambiguity in 7.3.0)
- Make the most of your memory
 - each project takes real estate and memory
 - use the working sets to filter your projects
 - a project not shown does not mean closed if you have a working set
 - open, close the project, add and remove it from the working set as needed
 - display the heap memory usage
 - detect Eclipse GCing, max out your memory (eclipse.ini) and start Eclipse first because contiguous memory is required
 - disable the plug-ins that you do not need
- Make the most of the real estate and use perspectives (back-up)
 - Have multiple specialized perspectives or...
 - Have a unique perspective
 - windows always in the same place
 - organize and optimize per function (e.g. problems + tasks, unit testing, debugging...) or per room hungriness or per vertical/horizontal need
 - reduce the interaction and number of clicks
 - keep your focus on your task not on the IDE

Organize your environment (Eclipse)

The screenshot shows the Eclipse IDE interface with several key areas highlighted by red boxes and annotations:

- Top Bar:** A red box highlights the 'Navi', 'Pack', 'SVN', 'Type', 'Proje', and 'Debug' buttons. Another red box highlights the 'Variables', 'Breakpoints', 'Expressions', and 'Display' buttons.
- Left Panel:** A red box highlights the 'Debug' and 'Outline' buttons.
- Right Panel:** A red box highlights the 'Java Working Set' button.
- Bottom Bar:** A red box highlights the 'Proble', 'Tasks', 'Proper', 'Search', 'Call Hi', 'JUnit', 'Covers', 'Javad', 'Shortc', 'Bug Ex', 'Bug Inf', 'Bug Re', 'History', 'Revisio', 'Progre', 'Consol', 'Intern', and 'SVN Pr' buttons.

Annotations in red text provide additional context:

- Have a logical organization of your tabs if you use a single perspective.** (Pointing to the 'Navi' button)
- Use a working set to use a subset of your projects** (Pointing to the 'Java Working Set' button)

The main editor displays the source code of `OsiCommunicatorImpl.java`, which includes a package declaration, imports, and a public class definition. The bottom status bar shows 0 errors, 3 warnings, and 0 others.

Description	Resource	Path
Warnings (3 items)		
OsiHandler is a raw type. References to generic type OsiHandler<T> should be parameterized	OsiCommunicatorImpl.java	/OSIPlatformClientManager/src/main/java/

com.oacis.osi.clientmanager.OsiCommunicatorImpl.java - OSIPlatformClientManager/src/main/java 373M of 638M

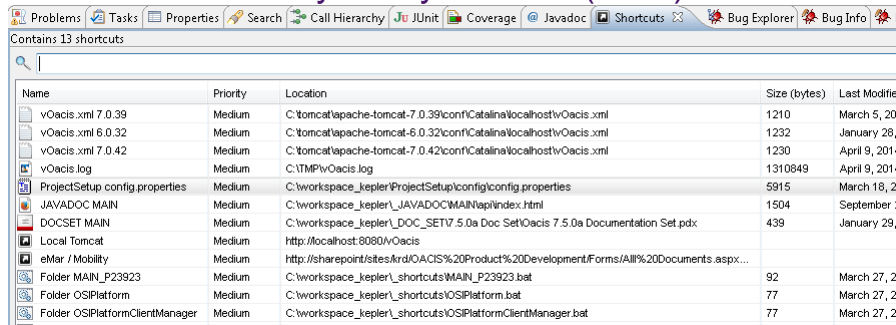
Organize your environment (Eclipse)

- JRE ambiguities
- Avoid Solaris compatibility issues (preferences and file menu)
- Double the search speed marking /tmp and /OAPatform/tmp as derived folders
- Be ready to switch Tomcat from a version to another
- Options to sort, filter, organize (tree view) and link with the editor
- History on some tabs
- Tabs walkthrough
 - project, outline, problems and tasks, search, call hierarchy (caller/callee), console
 - debug (threads and groups), variables, breakpoints

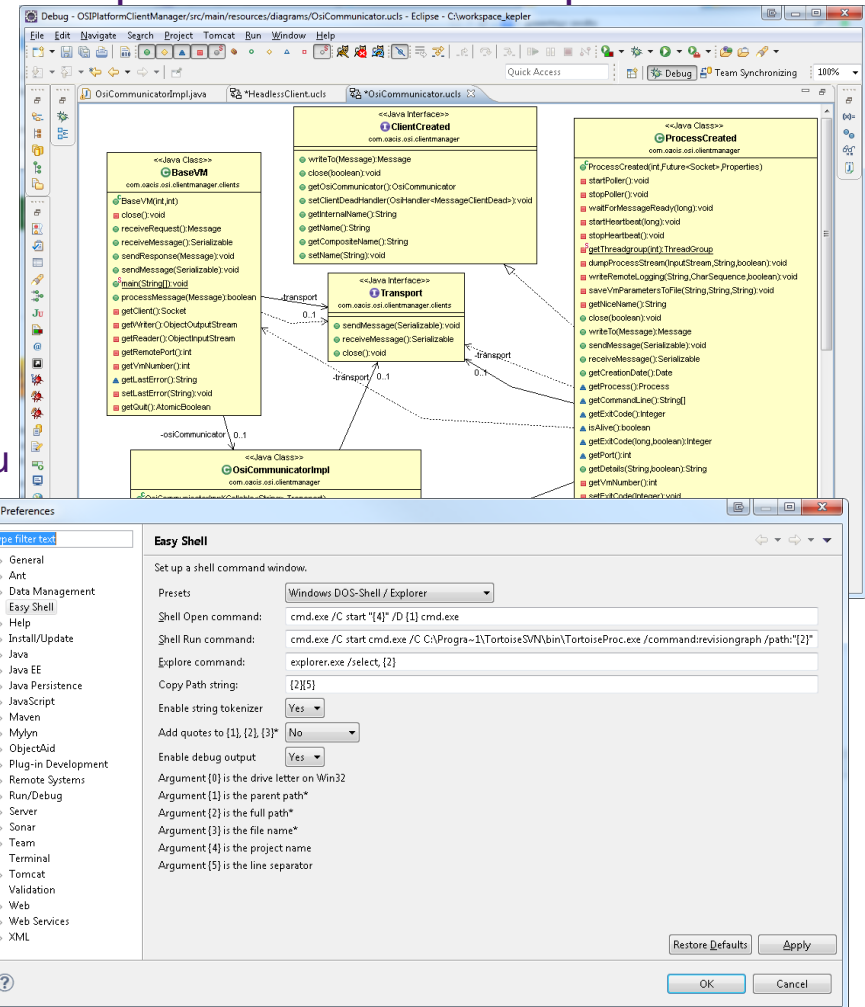
Productivity (plug-ins)

■ A few interesting plug-ins are in the Developer Workstation Setup Guide

- SVT connector
- Find-Bugs
- Eclemma
- Easy Shell
- Shortcuts (to vOacis.xml, log files, project setup properties, javadoc, doc set, URLs including Tomcat, local folders (using a script))
- ObjectAid UML (\$ for all the options) but you can use some base functions like class diagrams
- Memory Analyzer Tool (MAT) for leaks



Name	Priority	Location	Size (bytes)	Last Modified
vOacis.xml 7.0.39	Medium	C:\tomcat\apache-tomcat-7.0.39\conf\Catalina\localhost\vOacis.xml	1210	March 5, 2014
vOacis.xml 6.0.32	Medium	C:\tomcat\apache-tomcat-6.0.32\conf\Catalina\localhost\vOacis.xml	1232	January 28, 2014
vOacis.xml 7.0.42	Medium	C:\tomcat\apache-tomcat-7.0.42\conf\Catalina\localhost\vOacis.xml	1230	April 9, 2014
vOacis.log	Medium	C:\TMP\vOacis.log	1310849	April 9, 2014
ProjectSetup.config.properties	Medium	C:\workspace_kepler\ProjectSetup\config\config.properties	5915	March 18, 2014
JAVADOC MAIN	Medium	C:\workspace_kepler_JAVADOC\MAIN\api\index.html	1504	September 2, 2013
DOCSET MAIN	Medium	C:\workspace_kepler_DOC_SET\7.5.0a Doc Set\Oacis 7.5.0a Documentation Set.pdx	439	January 29, 2014
Local Tomcat	Medium	http://localhost:8080/vOacis		
eMar / Mobility	Medium	http://sharepoint/sites/krd/OACIS%20Product%20Development/Forms/AllItems.aspx...		
Folder MAIN_P23923	Medium	C:\workspace_kepler_shortcuts\MAIN_P23923.bat	92	March 27, 2014
Folder OSPlatform	Medium	C:\workspace_kepler_shortcuts\OSPlatform.bat	77	March 27, 2014
Folder OSPlatformClientManager	Medium	C:\workspace_kepler_shortcuts\OSPlatformClientManager.bat	77	March 27, 2014



Productivity (built-in)

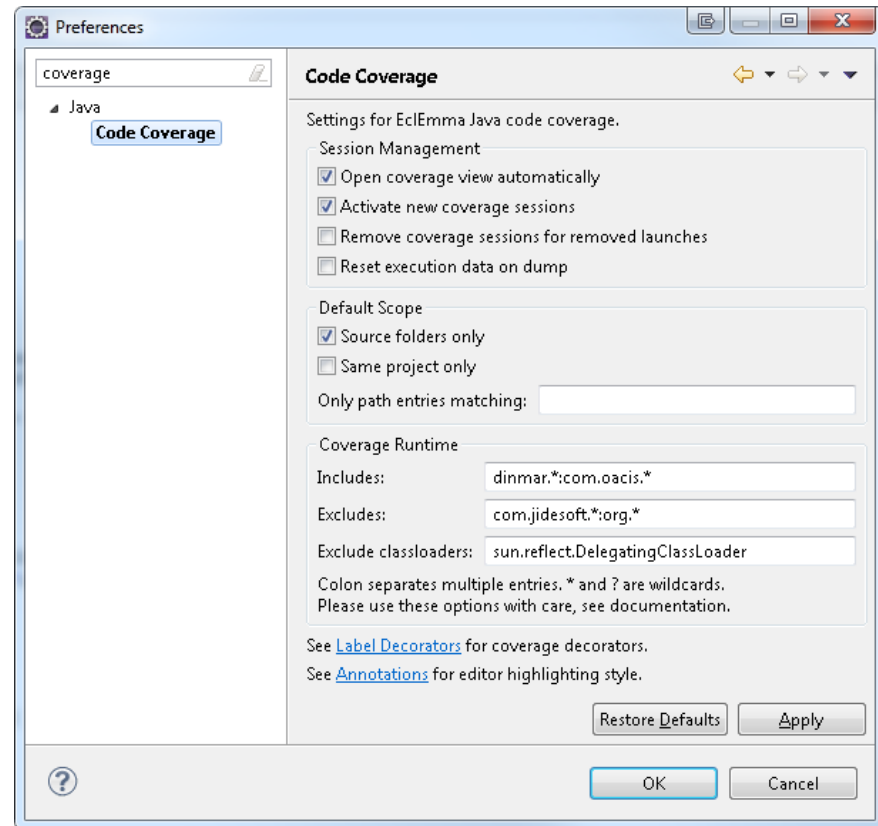
- Multiple consoles
- Detaching windows
- Code completion (CTRL-Space)
- Javadoc templates (e.g. inherited method Javadoc)
- Code templates
- Quick Assist (CTRL+1) providing some contextual refactoring
- Source and refactoring options
- Keyboard shortcuts (and operations on a selection)
 - CTRL-S, CTRL-SHIFT-S : save the current file or all
 - CTRL-SHIFT-F : format the code
 - CTRL-SHIFT-O : removes the unused imports
 - CTRL-T : type hierarchy of a class
 - Etc.
 - Google for many lists of favorite shortcuts
- Enable most all the compiler warnings to discover many issues, dead code...

Productivity (hand work)

- Create your favorite run configurations, make them favorites
- Copy the configuration from a server to your workstation
 - oaconfig.properties
 - dbconfig.properties
 - change this
 - disable that
 - don't forget that
 - why not make it automatic with a script? (see attached zip file)
- ...

Unit testing

- Unit test reports troubleshooting information
- Assistant to create a test case
- Running unit tests
- Running a test suite
- Testing with code coverage



Debugging (1)

- which database am I connected to? ProcessExplorer or TaskInfo or netstat
- multiple consoles
- debugged process/VM properties and capabilities
- debug panel options
- breakpoint options (line, exception, class loading, method, number of executions, value change, filtering the threads)
- using expressions
- custom formatters

Debugging (2)

- running 2 tomcats at the same time?
- start manually a second one and remote connect or use the server tab
- use the code hot swap to not restart the VM (avoid using anonymous inner classes)
- debug a running or production system using BSH or JSP to test something
- even in run mode you can still investigate with jVisualVM
- Tomcat not supporting well sometimes the debugging sessions and its VM crashing. What to do?

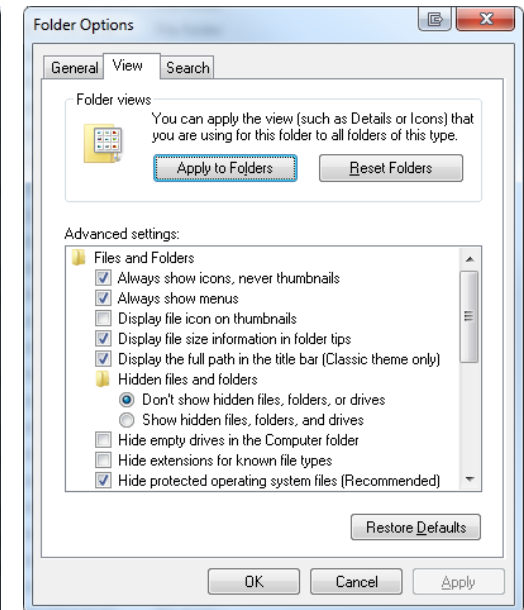
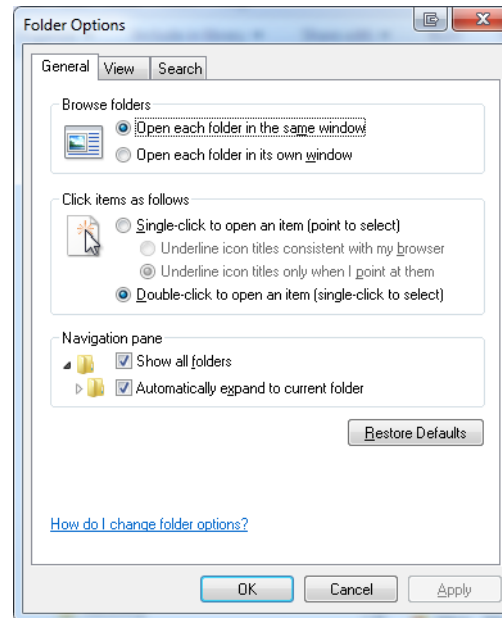
Conclusion

- Watch videos
- Observe your colleagues
- Read the documentation
- Explore yourself

Do you have a trick to share?

References - 1

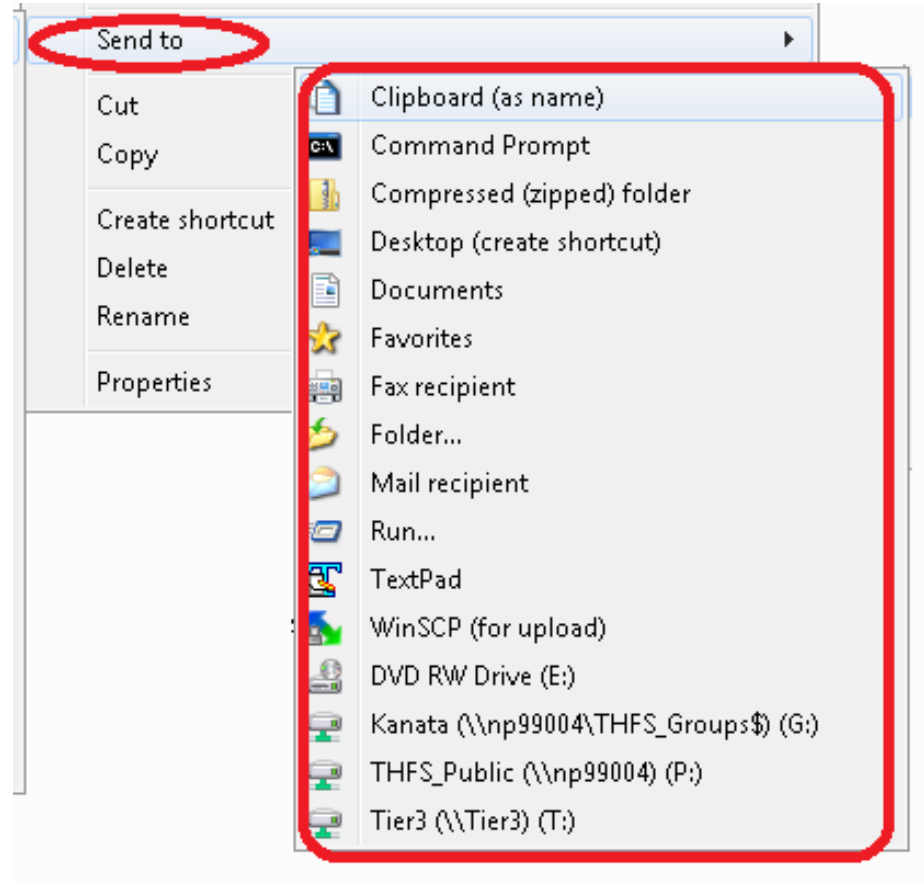
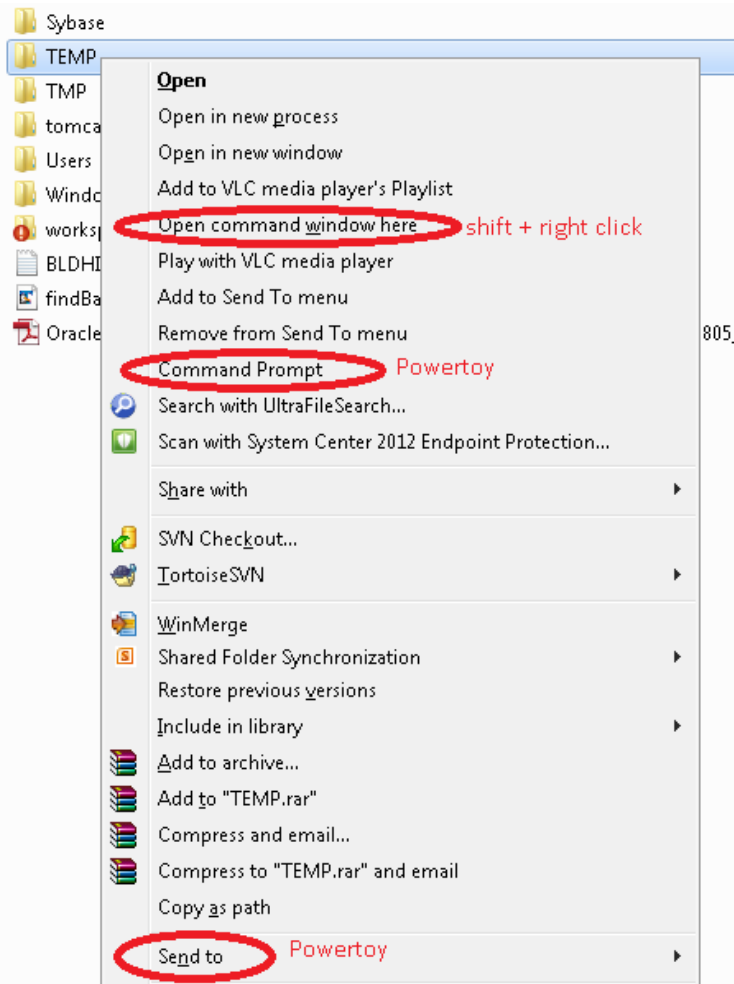
- [Windows PowerToys](#)
- [SendTo plug-in](#)
- [Eclipse new and noteworthy](#)
- [Developer's workstation setup guide](#)
- Windows Explorer options
- See the attached archive file containing multiple scripts and binaries



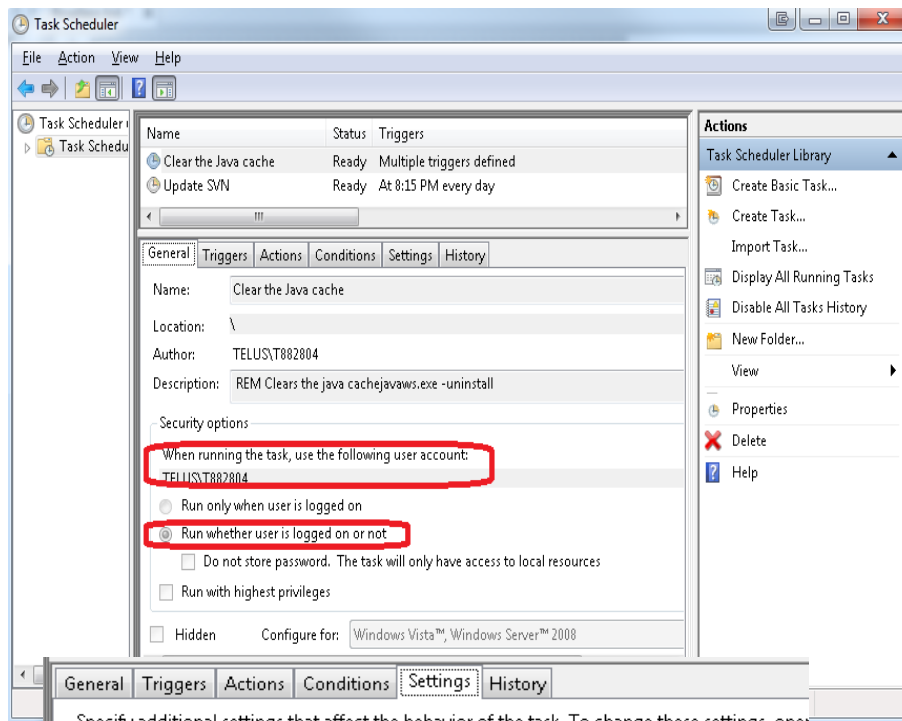
- The Java cache: create a desktop shortcut to ["C:\Program Files (x86)\Java\jdk1.7.0_60\bin\javaws.exe" –uninstall] and running in ["C:\Program Files (x86)\Java\jdk1.7.0_60\bin"] then copy it to your W7 quick launch bar

References - 2

■ Powertoy in action



References – 3 (Webstart cleaning at login and at night)



Specify additional settings that affect the behavior of the task. To change these settings, open the task's Properties command.

- ☒ Allow task to be run on demand
- ☐ Run task as soon as possible after a scheduled start is missed
- ☐ If the task fails, restart every: 1 minute
- Attempt to restart up to: 3 times
- ☒ Stop the task if it runs longer than: 1 hour
- ☒ If the running task does not end when requested, force it to stop
- ☐ If the task is not scheduled to run again, delete it after: 30 days

If the task is already running, then the following rule applies:

Do not start a new instance

When you create a task, you can specify the conditions that will trigger the task. To change the task property pages using the Properties command.

Trigger	Details	Status
At log on	At log on of TELUS\T882804	Enabled
Daily	At 1:38 AM every day	Enabled

When you create a task, you must specify the action that will occur when your task starts. To change the task property pages using the Properties command.

Trigger	Details
At log on	At log on of TELUS\T882804
Run a program	C:\workspace_kepler\ClearJavaCache.cmd

Specify the conditions that, along with the trigger, determine whether the task should run. If any condition specified here is not true. To change these conditions, open the task's Properties command.

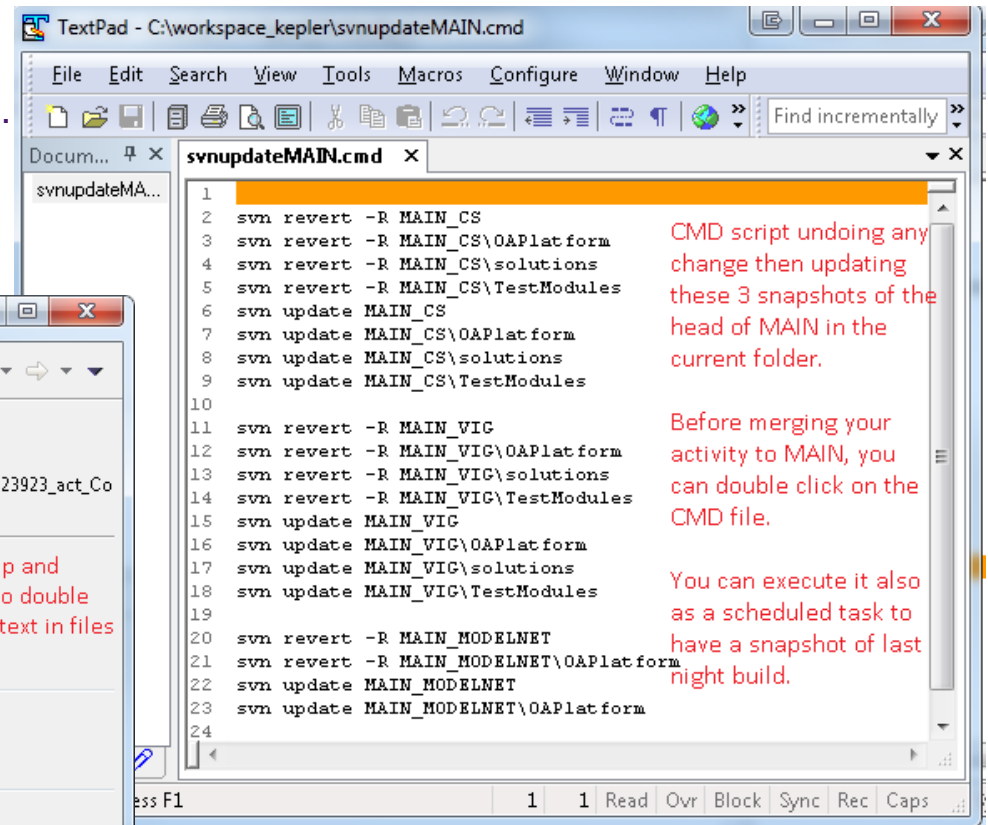
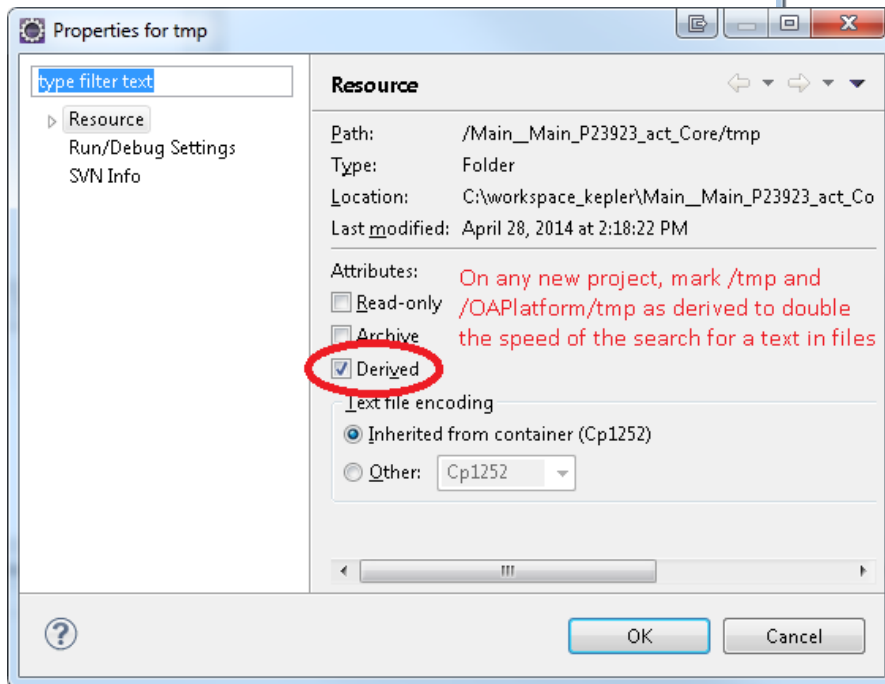
- ☐ Idle
 - ☐ Start the task only if the computer is idle for: 10 minutes
 - Wait for idle for: 1 hour
 - ☒ Stop if the computer ceases to be idle
 - ☐ Restart if the idle state resumes
- ☒ Power
 - ☒ Start the task only if the computer is on AC power
 - ☒ Stop if the computer switches to battery power
 - ☐ Wake the computer to run this task
- ☐ Network
 - ☐ Start only if the following network connection is available: Any connection

References - 4

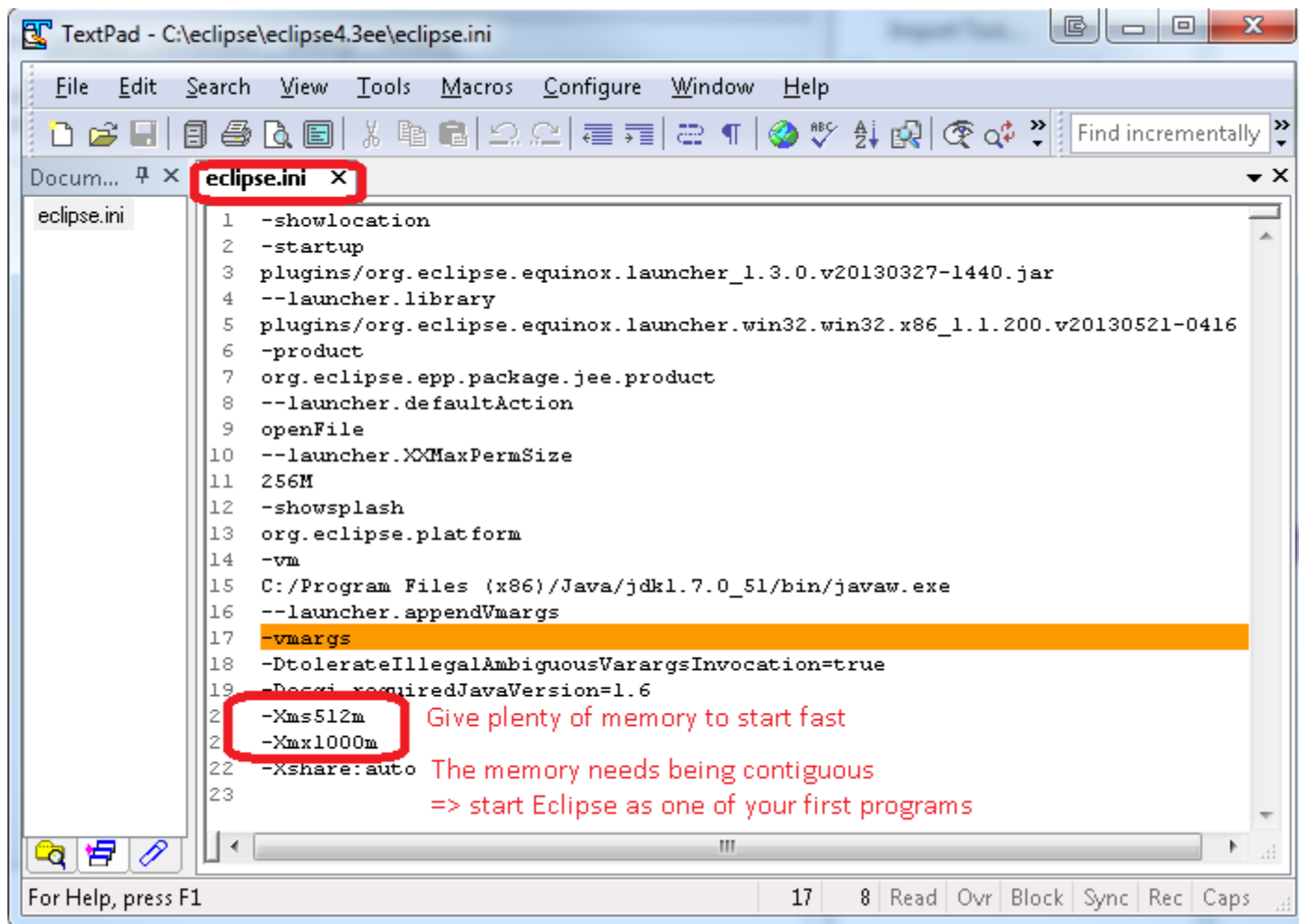
Beware: with the following script, as you do not use ProjectSetup, you have to update the Eclipse project with the changes for Tomcat versions, library versions, Java versions.

You can use such a script for other resource like the templates of ProjectSetup.

Speed up the file search !!!



References - 4



TextPad - C:\eclipse\eclipse4.3ee\eclipse.ini

File Edit Search View Tools Macros Configure Window Help

Docum... x eclipse.ini x

eclipse.ini

```
1 -showlocation
2 -startup
3 plugins/org.eclipse.equinox.launcher_1.3.0.v20130327-1440.jar
4 --launcher.library
5 plugins/org.eclipse.equinox.launcher.win32.win32.x86_1.1.200.v20130521-0416
6 -product
7 org.eclipse.epp.package.jee.product
8 --launcher.defaultAction
9 openFile
10 --launcher.XXMaxPermSize
11 256M
12 -showsplash
13 org.eclipse.platform
14 -vm
15 C:/Program Files (x86)/Java/jdk1.7.0_51/bin/javaw.exe
16 --launcher.appendVmargs
17 -vmargs
18 -DtolerateIllegalAmbiguousVarargsInvocation=true
19 -Dorg.osgi.requiredJavaVersion=1.6
20 -Xms512m
21 -Xmx1000m
22 -Xshare:auto
23
```

Give plenty of memory to start fast

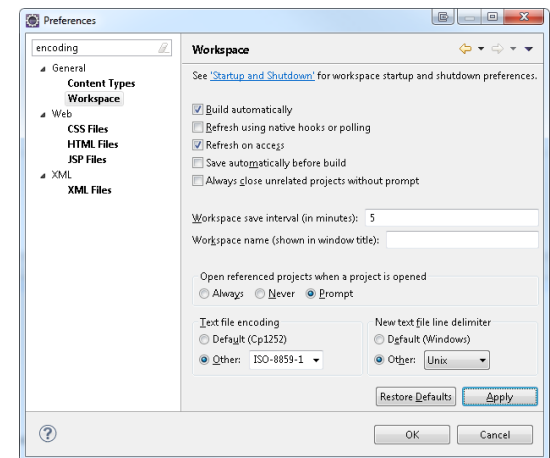
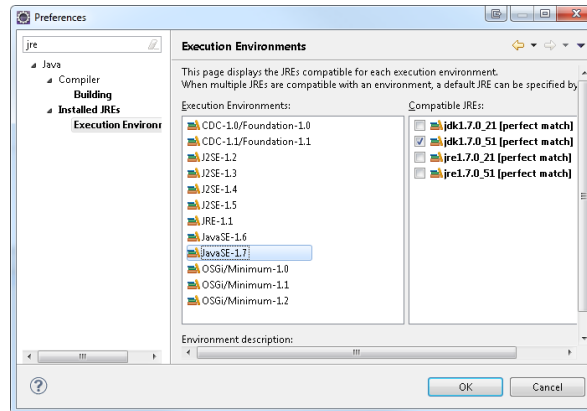
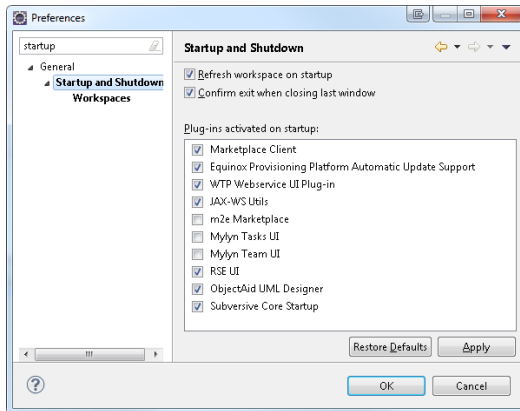
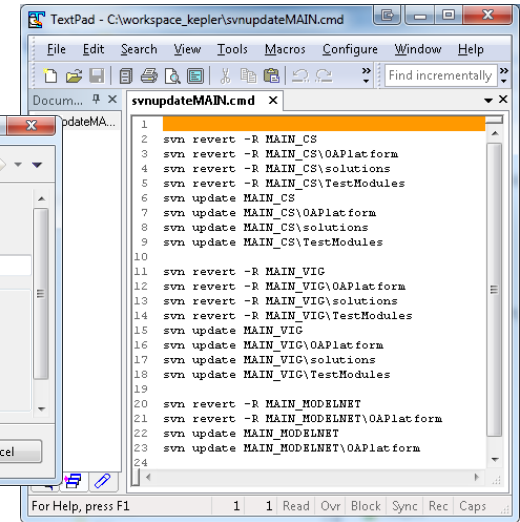
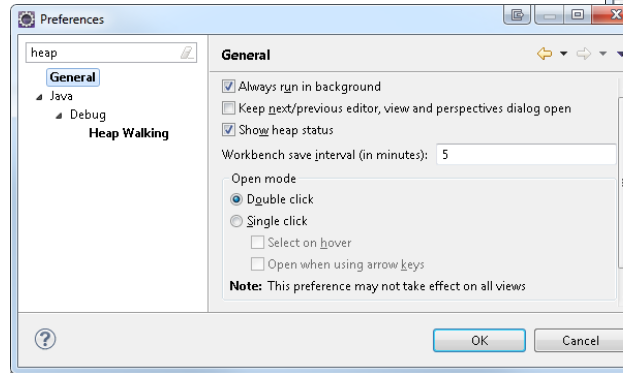
The memory needs being contiguous
=> start Eclipse as one of your first programs

For Help, press F1

17 8 Read Ovr Block Sync Rec Caps

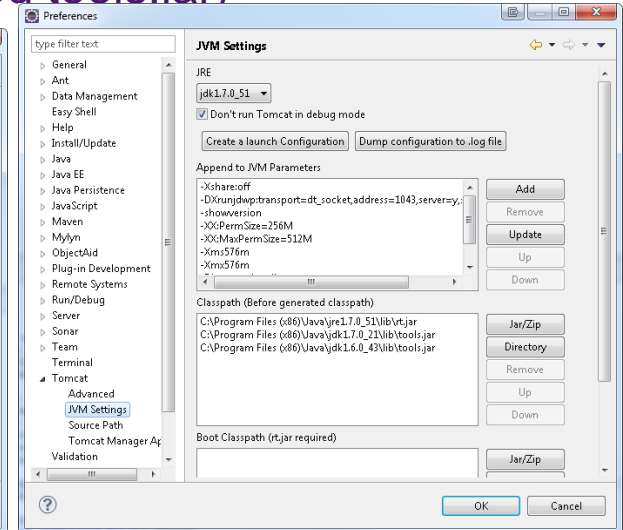
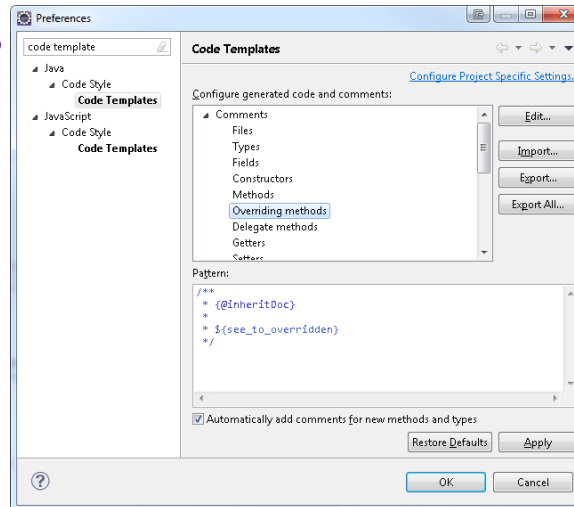
References - 5

- Reverting the SVN changes in folder then updating
- Ecl. heap status
- Ecl. JRE ambiguities
- Ecl. Solaris compatibility issues
- Ecl. start-up



References - 3

- Tomcat ready to be switched (push up the good tools.jar)
- Javadoc templates e.g. take advantage of the @inheritDoc tag



- Code templates (java / Editor / Templates)
- Shortcut (plug-in) to a folder
 - Support a shortcut to a file (e.g. voacis.xml) or to a URL (e.g. http://localhost:8080/vOacis)
 - Create a CMD file with the content below to open a folder instead and have a shortcut to it, the first folder must be the parent of the second folder that you want to explore
 - Explorer /e /root,C:\workspace_kepler /select,C:\workspace_kepler\Main__Main_P23923_act_Core

More Eclipse plug-ins

- AnyEdit plug-in <http://andrei.gmxhome.de/anyedit/>
- Grep plug-in (Slobodan) <http://marian.schedenig.name/projects/grep-console/>
- MAT plug-in <http://www.eclipse.org/mat/>
- QuickMarks plug-in (Mark) <http://eclipse-tools.sourceforge.net/quickmarks/>

And some other tools:

- Taskinfo: the Swiss knife to troubleshoot your process. It has helped me so many times *****. ([free](#))
- ProcessExplorer part of the MS [Sysinternals suite](#) (video [training](#))