Scientific Application Development Using Eclipse and the Parallel Tools Platform

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Tutorial Outline (morning)

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<th>Time</th>
<th>Module</th>
<th>Outcomes</th>
<th>Presenter</th>
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<tr>
<td>9:00 - 9:30</td>
<td>Tutorial Introduction</td>
<td>Introduction to tutorial process and setup</td>
<td>Greg Watson</td>
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<tr>
<td>9:30 - 10:00</td>
<td>1. Overview of Eclipse and PTP</td>
<td>An understanding of the overall Eclipse and PTP architecture</td>
<td>Greg Watson</td>
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<tr>
<td>10:00 - 10:30</td>
<td>2. Introduction to the Eclipse IDE</td>
<td>Introduction to the basic features of the Eclipse IDE, including building, running and debugging a sample application</td>
<td>Greg Rasmussen</td>
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<td>10:30 - 11:00</td>
<td>Break</td>
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<tr>
<td>11:00 - 12:00</td>
<td>2. Introduction to the Eclipse IDE</td>
<td>Continued...</td>
<td>Craig Rasmussen</td>
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<tr>
<td>12:00 - 12:30</td>
<td>3. Installing Eclipse</td>
<td>Eclipse installed on your laptop</td>
<td>Greg Watson</td>
</tr>
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<td>12:30 - 2:00</td>
<td>Lunch Break</td>
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Tutorial Outline (afternoon)

<table>
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<tr>
<td>2:00 - 3:00</td>
<td>4. Advanced Development</td>
<td>Exploring advanced features of the Eclipse IDE</td>
<td>Craig Rasmussen</td>
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<td>3:00 - 3:30</td>
<td>5. PTP and Parallel Language Development Tools</td>
<td>Introduction to PTP and MPI application development tools</td>
<td>Beth Tibbitts</td>
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<td>3:30 - 4:00</td>
<td>Break</td>
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<tr>
<td>4:00 - 4:15</td>
<td>5. PTP and Parallel Language Development Tools</td>
<td>Continued...</td>
<td>Beth Tibbitts</td>
</tr>
<tr>
<td>4:15 - 5:15</td>
<td>6. Parallel Debugging</td>
<td>Introduction to the Eclipse parallel debugger, locating and correcting a bug in a parallel code</td>
<td>Beth Tibbitts</td>
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<tr>
<td>5:15 - 5:30</td>
<td>Tutorial wrap up</td>
<td>Further information about Eclipse, PTP and related tools Obtain feedback from participants</td>
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Tutorial Introduction

- Tutorial is divided into modules
- Each module has clear objectives
- Modules usually comprise short theory component, followed by hands-on
- Raise your hand if you get stuck
- Ask questions at any time
- Indicates hands-on
Hands-on Setup

- Hands-on activities require use of X-Windows software
  - Avoids installing OpenMPI on your laptop (takes a long time)
  - Runs Eclipse remotely on the ‘parallel’ machine
  - Displays an Eclipse session on your laptop
- A full version of Eclipse will also be installed on your laptop in Module 3
  - This will allow you explore more Eclipse features later
- Linux:
  - Should not require any additional setup
- MacOS X:
  - May require X11 installation
- Windows:
  - Requires installation of X11

X11 Installation (MacOS X)

- Check for existing installation:
  - /Applications/Utilities/X11
- If installation required:
  - Open macOSx folder on TutorialCD
  - Double-click on
    - X11User10.3.pkg for MacOS X 10.3
    - X11User10.4.pkg for MacOS X 10.4
  - Follow installer prompts
    - Accept default options
X11 Installation (Windows)

† Options:
† Install Cygwin/X
  † Cygwin installation required for optional Module 3
† Install StarNet X-Win32
  † Installs new application
† Boot from XLiveCD
  † No installation, slower
† Boot from Knoppix CD
  † No installation, requires manual setup

Cygwin/X Installation

† Open the TutorialCD in My Computer
† Open the cygwin folder
† Double-click on setup
† Select Next >
† Select Install from Local Directory
† If not already, enter C:\cygwin in Root Directory
† Select Next >
† On the Local Package Directory page
  † Select the cygwin folder on the TutorialCD via the Browse... button, then OK
† Select Next >
† Select Next > to accept default packages
  † This will take about 5 minutes
† Select Create icon on Desktop, Finish then OK