# Ohio Supercomputer Center

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# PTP Script Editing

and other non-PTP things you can do with Eclipse
for HPC developers

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Slides available at https://wiki.eclipse.org/PTP/PTP_User_Meetings

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# HPC Programming and Eclipse

- The Eclipse Parallel Tools Platform (PTP) contains many features important to HPC programmers
  - Features related to C,C++,Fortran programming
  - Remote development, launch, monitoring,debugging
  - Performance analysis and integration with other tools
  - Packaging in "Eclipse for Parallel Application Developers"

- Other HPC environments heavily use scripting languages
  - E.g. Python, bash, perl, R, Matlab
- Other Eclipse plug-ins, and other features and settings in Eclipse, can complement the Eclipse PTP workbench.
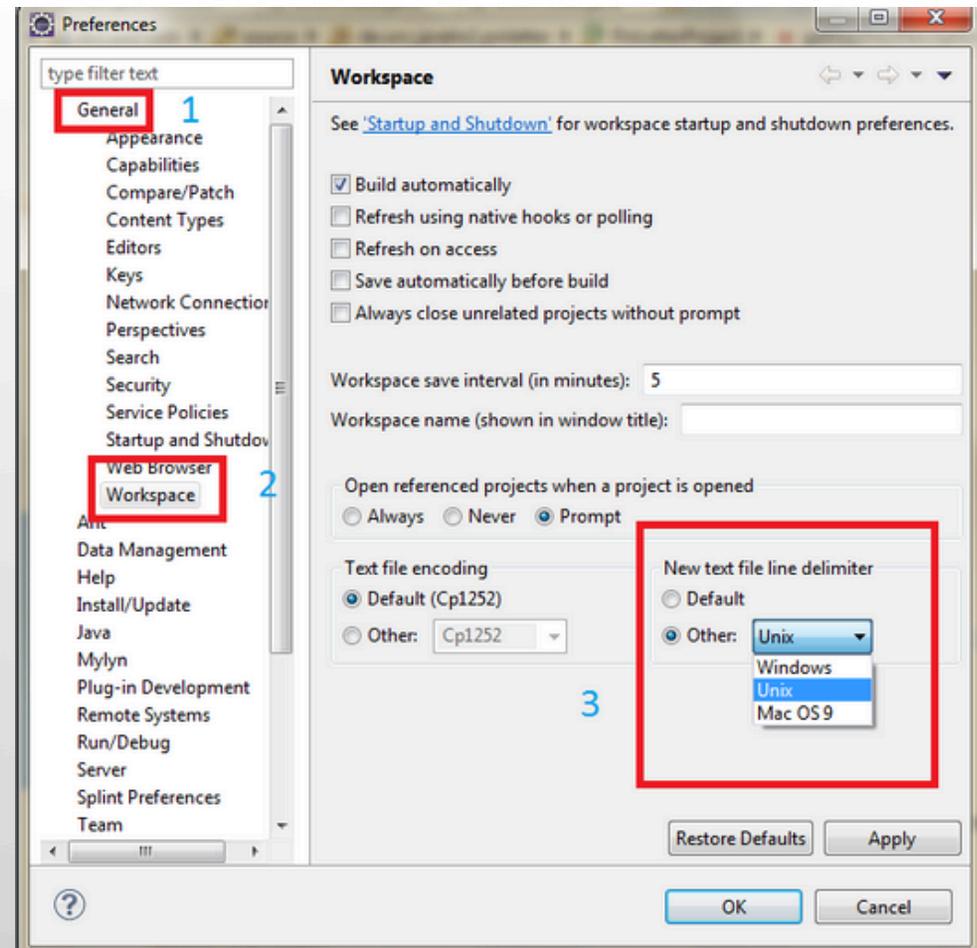
# Topics

- Other Eclipse settings useful for scripting
  - Line ending preferences
- Other plugins for scripting languages
  - shellEd for Bash editing
  - PyDev for Python editing
  - EPIC for Perl editing
  - StatET for R editing
  - Matclipse for Matlab Editing
- Testing scripts on remote hosts within eclipse

# Line Ending Preferences (1 of 2)

- To set new files line-endings to Unix
  - Step 1: Click on eclipse preferences
  - Step 2: Click on General
  - Step 3: Click on Workspace
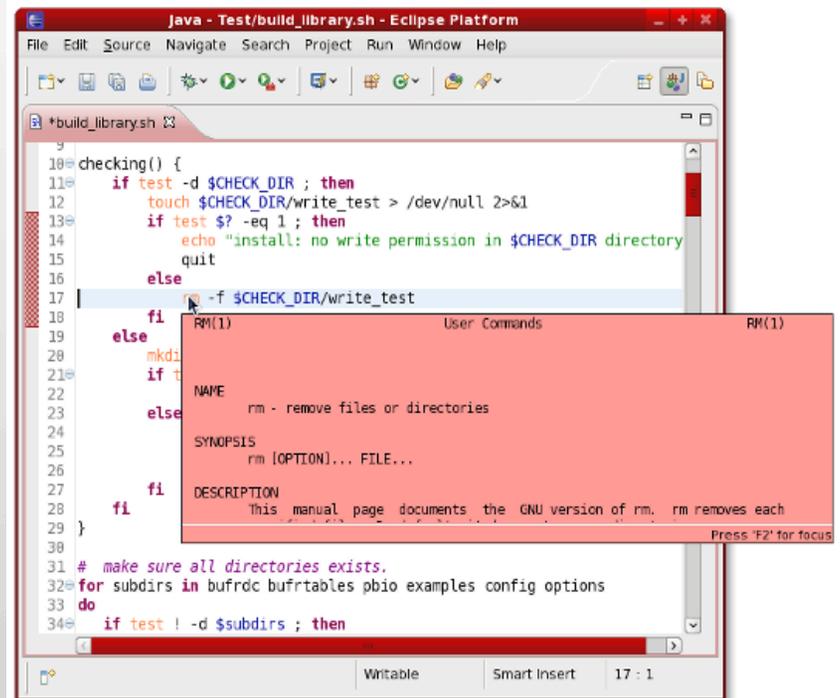  - Step 4: Set the line delimiter

# Line Ending Preferences (2 0f 2)

- Set the line ending preferences to Unix in Eclipse in existing files
  - Step 1: Open the file for editing
  - Step 2: Click on File
  - Step 3: Click on Convert Line Delimiters To -> Unix

# shellEd – for bash scripts

- Installation
  - Step 1: Go to http://sourceforge.net/apps/trac/shelled/wiki/Documentation/InstallGuide
- Benefits
  - Syntax highlighting
  - Integration of man page

# Python – PyDev plug-in

- Installation
  - Step 1: Click on help in eclipse
  - Step 2: Click on Eclipse MarketPlace
  - Step 3: Search for Python
  - Step 4: PyDev is found -  Click on install
- Other Installation for Python 2.8.2
  - Step 1: Download the zip file from http://sourceforge.net/projects/pydev/files/pydev/PyDev%202.8.2/
  - Step 2: Restart eclipse
- Benefits
  - Code Completion
  - Unit Test integration

```python
def printHello():
    print "Hello"

count = 6
x = 0
while x < count:
    if x % 2 == 0:
        printHello()
    x+=1
```

# EPIC – Perl plug-in

- Installation
    - Step 1: Click on help in eclipse
    - Step 2: Click on Eclipse MarketPlace
    - Step 3: Search for Perl
    - Step 4: EPIC is found - Click on install
- Benefits
    - All of your editing can be done in Eclipse
    - Syntax Highlighting
    - On-the-fly syntax checking
    - Source formatting

```perl
for $i (1, 2, 3, 4, 5) {
        print "$i ";
    for $i (1, 2, 3, 4, 5) {
        print "$i";
    }
    print "\n";
}
```
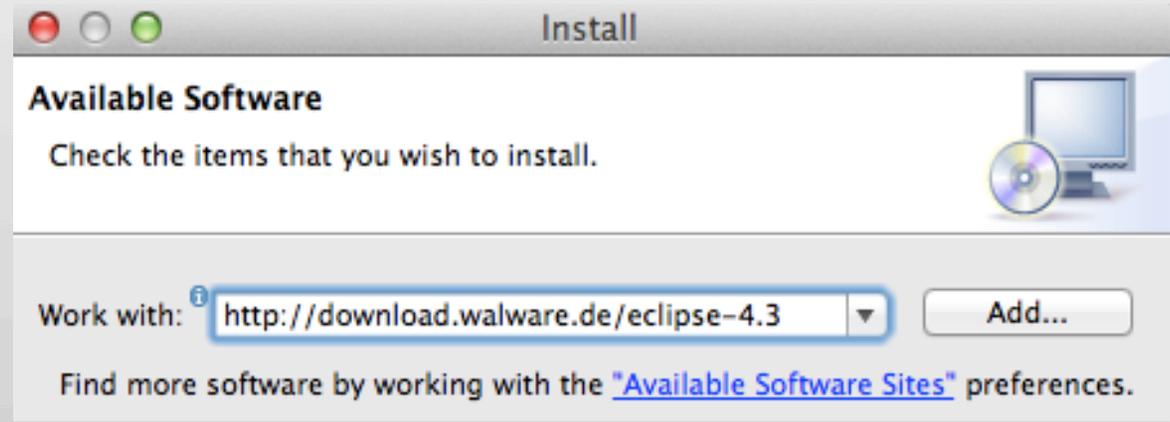
# StatET - plugin for Editing R (1 of 2)

- Installation
  - Step 1: Click on Help in eclipse
  - Step 2: Click on Install New Software…
  - Step 3: In the text field
    Work with: http://download.walware.de/eclipse-4.3
  - Step 4: Click Add
  - Step 5: Select
  - Walware - StatET

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# StatET - plugin for Editing R (2 0f 2)

- Benefits
  - Syntax highlighting
  - Text folding
  - Syntax Checking

```
median <- function (x, na.rm = FALSE) {
    if (is.factor(x) || mode(x) != "numeric")
        stop("need numeric data")
    if (na.rm)
        x <- x[!is.na(x)]
    else if (any(is.na(x)))
        return(NA)
    n <- length(x)
    if (n == 0)
        return(NA)
    half <- (n + 1)/2
    if (n%%2 == 1) {
        sort(x, partial = half)[half]
    }
    else {
        sum(sort(x, partial = c(half, half + 1))[c(half, half + 1)])/2
    }
}
```

- A complete list of StatET features at
  - http://www.walware.de/goto/statet

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# Testing Scripts on Remote Hosts

1. Terminal view within Eclipse
   - Can reuse Connection if you have Synchronized project

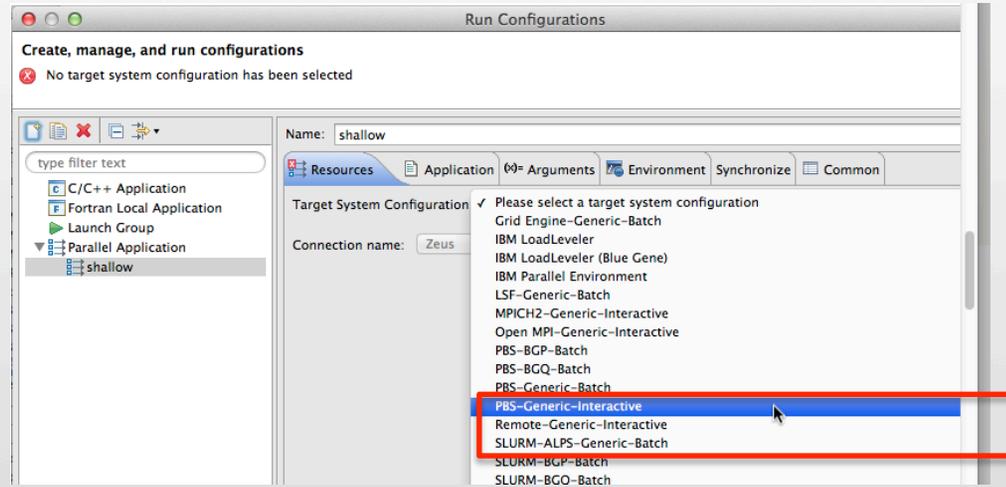# Testing Scripts on Remote Hosts (2)

## 2. Remote launch – use Target System Configuration "Remote Generic Interactive"

# Questions

**PTP Resources:**

- **http://eclipse.org/ptp**
- **http://wiki.eclipse.org/PTP**