

# Advanced Weather Interactive Processing System II (AWIPS II)

AWIPS Development Environment (ADE)  
and the  
Common AWIPS Visualization  
Environment  
(CAVE)

*Module 18: AWIPS ADE Updates for TO10*

February 18, 2009

AWP.TRG.SWCTR/TO10.ADE/CAVE-18.00

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# Objective

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- Understand modification made to the AWIPS II ADE for TO 10



# Topics

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- Describe ADE platform updates
- Describe AWIPS II installer updates
- Describe AWIPS II flow tag updates
- Describe Code baseline updates
- Describe ADE Build Issues
- Describe Test Driver Issues



# Platform Updates



# Platform Updates: Eclipse

- Update:
  - Eclipse updated to Version 3.4.1, built 9/11/2008
- Rationale:
  - Latest Version available at the appropriate time in the TO, contains latest bug fixes and enhancements
  - Used for CAVE and EDEX development and builds
  - Should be used for all ADE based development
- Impacts:
  - Minimal changes required
- Install:
  - Packaged with AWIPS II Installers



# Platform Updates: PostgreSQL

- Update:
  - Postgres updated to PostgreSQL 8.3.4
- Rationale:
  - Latest Version available at the appropriate time in the TO, contains latest bug fixes and enhancements
- Impacts:
  - Minimal changes required
  - PG Admin should be updated (not included with installers)
- Install:
  - Packaged with AWIPS II Installers



# Platform Updates: ActiveMQ

- Update:
  - ActiveMQ updated to version 5.2.0 (from 4.1.1)
- Rationale:
  - Latest ActiveMQ Version available at the appropriate time in the TO, contains latest bug fixes and enhancements
  - Supports embedding of other Apache products into an integrated running environment
- Impacts:
  - Minimal changes, updated configuration required
    - Updated configuration included in AWIPS II Installers
- Install:
  - Packaged with AWIPS II Installers



# Platform Updates: Apache Camel

- Update:
  - Mule replaced with Apache Camel 1.5.0
- Rational:
  - Camel provides a low impact, flexible SOA framework
  - Mule was starting to show insurmountable problems
  - See slides 42 – 46 of module 16 for details
- Impacts:
  - Some coding modification required
  - Complete rework of EDEX deployment descriptors required
  - Updated code/configuration is included in AWIPS II Installers
- Install:
  - Packaged with AWIPS II Installers



# Platform Updates: IzPac

- Update:
  - IzPac has been updated to version 4.2.0
- Rationale:
  - Latest IzPac version available at the appropriate time in the TO, contains latest bug fixes and enhancements
- Impacts:
  - Minimal, installers have updated look and feel
- Install:
  - Not included with the ADE, used to create AWIPS II Installers



# Platform Updates: Other Packages

- Other software updated as needed to be compatible with the platform
  - Specific version information available in the AWIPS II SVD document (included on the install media)



# Questions?

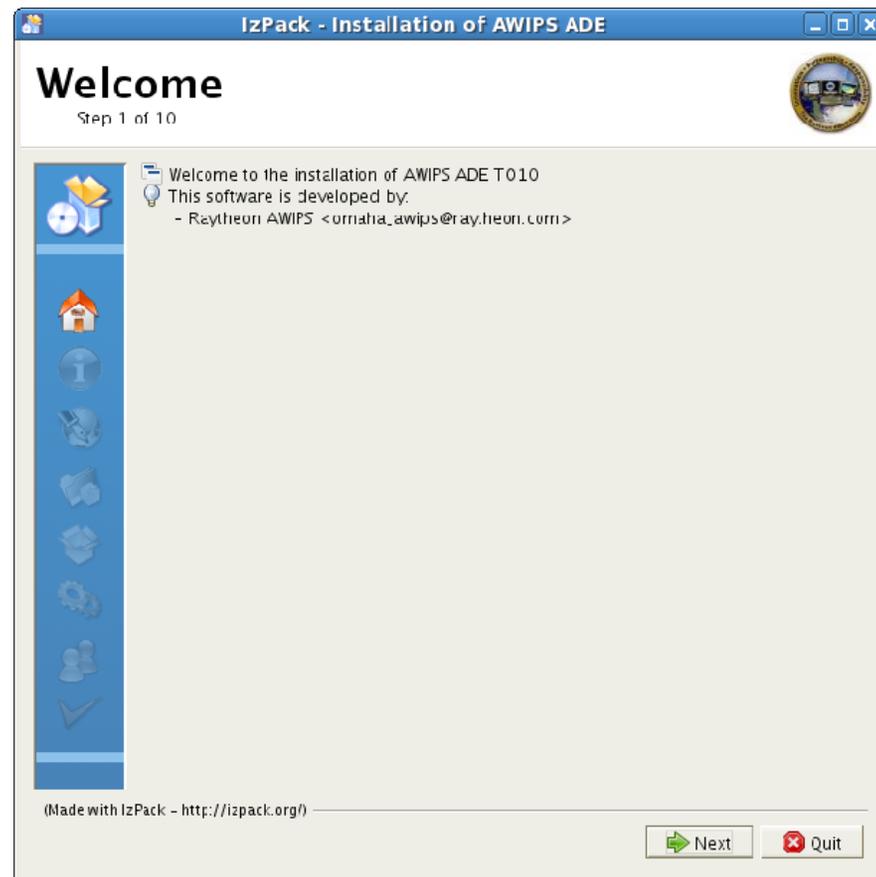


# AWIPS II Installer Updates



# Installer Updates: IzPack Update

- IzPack updated to version 4.2.0.
- The most visible change is a new “skin”
  - Shown here on a Fedora Linux box.
- The new look does not change the basic flow of the installers.
- The intent is to provide a more professional look and feel and user experience.



# Installer Updates: ADE Installer

- AWIPS II ADE installer now includes:
  - ADE code Baseline and JavaDoc
  - ANT 1.70
  - Eclipse 3.4.1
  - Java JDK 1.6.0u5.
- All components except the ADE Baseline are optional.
- ADE Installer is designed to coordinate with an existing EDEX runtime installation.
  - EDEX development requires an EDEX runtime installation.
  - ADE installer defaults to standard EDEX locations, and may be changed by the user.



# Installer Updates: ADE Installer (cont'd)

- ADE code baseline includes:
  - AWIPS II Code
    - CAVE code
    - EDEX code
    - FOSS projects
  - JEPP
    - Contains source code for Jepp (Java Embedded Python) libraries
    - Compiled libraries are delivered in *AWIPS/org.jep*
  - METEOLIB
    - Contains source code and build scripts for JNI METEOLIB libraries
    - Compiled libraries are delivered in *AWIPS/com.raytheon.edex.meteolib*
  - OHDLIB
    - Contains source code and build scripts for JNI OHD Libraries



# Installer Updates: CLI Installer

- AWIPS II added a Command Line Interface (CLI) tool kit in TO10.
- There is a separate installer *cli\_installer.jar* for the CLI:
  - Located with the other installers on the install media.
  - Use the *setup\_cli.sh* script to install the CLI.
- CLI installer requests required configuration information:
  - Most configuration requests offer reasonable defaults.
  - See the system flow tags for appropriate values.
- Using the CLI installer has been added to the appropriate flow tags.



# Installer Updates: EDEX Installer

- EDEX installer includes updated versions of platform software.
- EDEX installer includes requests for configuration information:
  - Most configuration requests offer reasonable defaults.
  - See the system flow tags for appropriate values.
- EDEX is now designed to run using a startup script, `start.sh`:
  - `start.sh` sets environment appropriately for running EDEX.
  - Starting EDEX directly will result in runtime errors.



# Installer Updates: CAVE Installer

- CAVE installer includes updated versions of platform software.
- CAVE installer includes requests for configuration information:
  - Most configuration requests offer reasonable defaults.
  - See the system flow tags for appropriate values.



# Questions?



# AWIPS II Installation Flow Tags



# AWIPS II Installation Flow Tags

- Starting with TO9, AWIPS II, Installers were supported with Installation Flow Tags:
  - Flow tags consist of detailed instructions for performing a specific installation.
- Flow Tags are available for:
  - Cluster-based EDEX/CAVE install
  - Standalone EDEX/CAVE install
  - Developer (ADE) install.
- Flow Tags have been updated to reflect changes made in TO10.

## AWIPS

Flow Tag Record  
Cluster Deployment

Integration Server Information

NAS Server	
EDEX DB Server	
EDEX Server	
EDEX Server IP Address	
EDEX Client(s)	
EDEX Client(s) IP Address	
CAVE Machine(s)/user(s)	

Task Order	
Build Number	

Final Readiness Approval Record

Department	Assignee	Signature	Date
Systems			
Engineering:			
Quality			
Assurance:			



# Questions?



# AWIPS II Code Organization



# AWPS II ADE Install Structure

- The basic install structure for the ADE is shown at right.
  - Recommended that you use the Eclipse installed with the ADE for development work.
- The AWIPS II code baseline is located in the projects directory.
  - jepp, meteoLib and ohdLib are JNI code projects used by AWIPS I.I
  - CAVE and EDEX code is in awips.
- Under awips, there are a number of directories that do not start “com.raytheon”.
  - This directory structure reflects the code reorganization as discussed in Module 16.
  - Most are COTS/FOSS projects that support the AWIPS II runtime (CAVE and EDEX).

```
ade
|-- Uninstaller
|-- apache-ant-1.7.0
|-- eclipse
|-- jdk1.6.0_05
`-- projects
    |-- awips
    |-- jepp
    |-- meteoLib
    `-- ohdLib
```



# Questions?



# ADE Build Issues



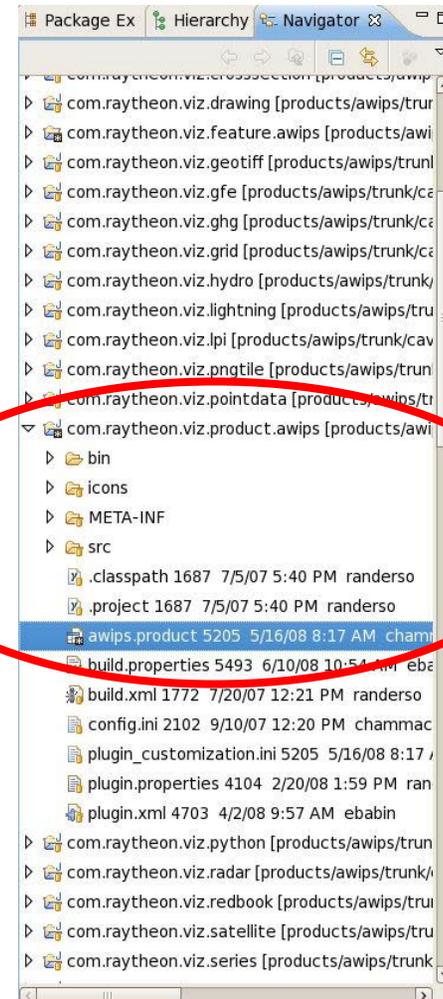
# ADE Build Issues

- For ADE development, the code baseline has been designed to be auto compiled by Eclipse as development work is performed.
  - See the ADE flow tag for details on setting up the ADE for development.
- EDEX must be deployed into an EDEX runtime for testing.
  - Installing the EDEX runtime is contained in the ADE flow tag.
  - Deploying EDEX to the runtime – covered in Module 16, slides 37 – 39.
  - running EDEX – covered in Module 16, slide 47.
- CAVE is designed to be test run from inside Eclipse.
  - Running CAVE from Eclipse covered in the TO 9 briefing. The slides are repeated later for convenience.



# Modified CAVE Startup: Developer

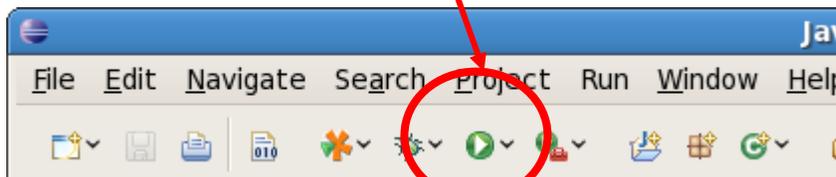
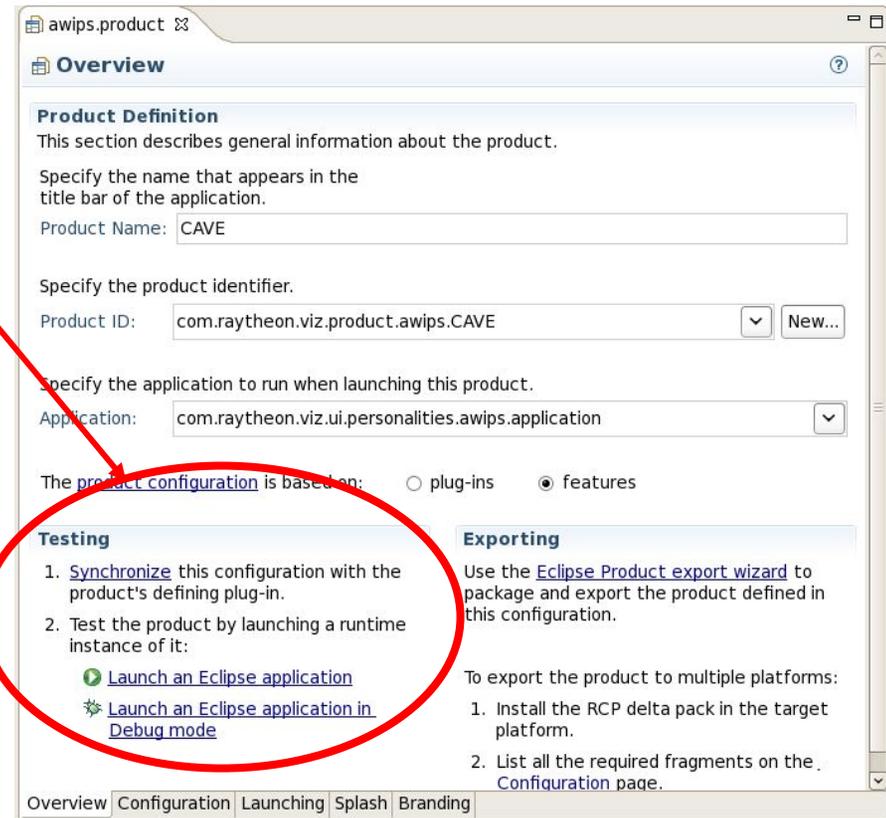
1. From inside Eclipse, locate the **com.raytheon.viz.product.awips** project.
2. Expand the project (click the triangle).
3. Double click on **awips.product**.



# Modified CAVE Startup: Developer (cont'd)

After the description page loads:

4. Click the *features* radio button.
5. Click on the **blue Synchronize** hyperlink.
6. Click on the **blue Launch the Product** hyperlink.
7. Once this has been done, you can usually launch CAVE by clicking the green *Run As* button on the Eclipse toolbar.



# ADE Build Issues: JNI

- Java Native Interface (JNI) mechanism is utilized to interface with certain non-Java libraries.
  - In AWIPS II, these are JEPP, OHDLIB, and METEOLIB.
- These projects are included in the ADE outside the AWIPS II baseline.
- The ADE currently does not support building or deploying this code.
  - Native code in TO10 is built through Eclipse using the CDT plug-in.
  - Once the native object code (so) files are created they are manually copied into place.
  - Next few slides outline the procedure that JNI developers at Omaha use when working on this code.



# ADE Build Issues: JNI (cont'd)

## Eclipse CDT Setup

- Add the CDT plug-in to an existing installation of Eclipse:
  - By adding the <http://download.eclipse.org/tools/cdt/releases/ganymede> url to software updates
  - Installing the following features:
    - CDT GNU Toolchain Build Support
    - CDT GNU Toolchain Debug Support
    - Eclipse C/C++ Development Platform
    - Eclipse C/C++ Development Tools
- Follow the dialog prompts:
  - Restart Eclipse when requested



# ADE Build Issues: JNI (cont'd)

## Initial Code Import

- Create a new workspace for each native library or library collection (in the case of ohdlib)
- Follow the procedure outlined in the ADE flow tag to import the JNI code into the Eclipse work space

Hint: You may want to disable *Projects*→*Build Automatically* before performing the code import.



# ADE Build Issues: JNI (cont'd)

## Build the Native Code

- Once the code has been imported, select *Project*→*Build All*.
- Some include paths may need to be adjusted before the build will successfully complete.
  - To fix include path issues, select *C/C++ Build*→*Settings*" menu on the project *Properties* dialog.
  - Modify *GCC C Compiler*→*Directories* and *GCC C Linker*→*Libraries* settings as needed.
- After the code builds successfully, *Project*→*Build Automatically* may be re-enabled.



# ADE Build Issues: JNI (cont'd)

## Copy Compiled Libraries to Appropriate Location

- Location of the newly compiled objects may differ among native libraries.
  - Some libraries may output the shared object (so) file into the projects Debug folder.
  - Other libraries may output the shared object (so) file into a different folder specified by the "Build Artifact" tab of the *C/C++ Build*→*Settings* menu.
- Copy the newly compiled native shared object (so) files into *awips/lib* (in the EDEX runtime).



# ADE Build Issues: JNI (cont'd)

- TO11 will introduce a more standardized system for synchronizing, building, and deploying native libraries.
- Separate workspaces for each library (or library collection) will no longer be needed.
- Manual copying will no longer need be required.



# Questions?

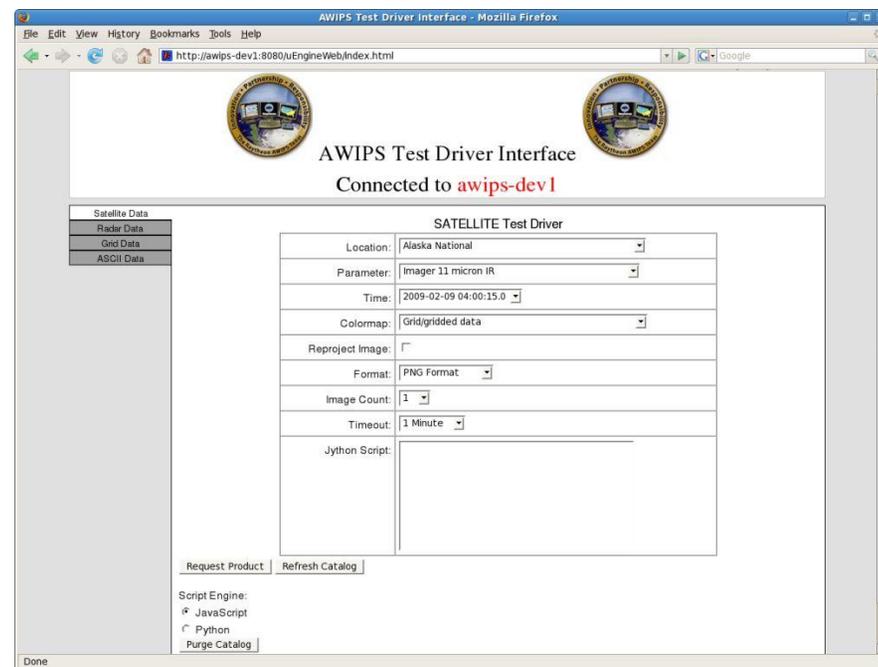


# ADE Test Driver Issues



# ADE Test Driver Issues

- AWIPS II ADE includes a test driver.
- The test driver is a Web-based application for:
  - Testing availability of certain data.
  - Testing/developing  $\mu$ Engine scripts.
- Test driver interface includes several options that either do not work or work incorrectly.



# ADE Test Driver Issues (cont'd)

- Most links on secondary page (uEngineWeb/index.jsp) link to pages that do not work.
  - The pages display, but script submissions generally result in a page displaying “Cannot process response.”
- Several options on main page (uEngineWeb/index.html) do not work correctly.
  - Attempting to execute JavaScript scripts generally does not work:
    - You will get a dialog with error information
  - The *Purge Catalog* option does not work:
    - You get a pop-up that says “Not yet implemented”
    - You can perform a purge by navigating to <http://localhost:9581/services/purgeAll> in your browser.
  - The archived data options do not work:
    - Data directory structure modified for Camel update does not match the test driver’s expected directory structure



# Questions?



# Wrap-Up



# Summary

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- Covered ADE platform updates
- Covered AWIPS II installer updates
- Covered AWIPS II flow tag updates
- Covered Code baseline updates
- Covered ADE Build Issues
- Covered Test Driver Issues



# Resources

- On the ADE TO10 DVD
  - Current code available for examination in the ADE baseline
  - JavaDoc documentation available
- Also available
  - TO10 Training Updates
  - TOT1 Training Materials

