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This seminar will cover the new **ARRIS Developer** plug-in and how to use it.

- Setting up the Development Environment and the Developer Defaults
- The Sigmac Compile / Build menu
- The Menu Compile / Build menu
- The revised Menu Help system

This seminar is not intended to teach the Sigmac programming language or menu source language, however some syntax relevant to the compile process will be covered. Familiarity with the sigmac language and creating custom menus will be helpful, but is not required to understand the basics of **ARRIS Developer**.

Reference Documents:

Developer topic of the **ARRIS** Encyclopedia

Background

Before **ARRIS 7.0**, writing sigmacs was done exclusively on Unix systems.

- The source code was written in a Unix text editor such as **VI Editor** on Sun systems or **JOT** on SGI.
- The sigmac compiler was an operating system command line command "compile sigmac.ff".
- The archiving of compiled binary sigmac (.gg) files to a sigmac library (.sm) was a command line process "smar -r sigmac.gg library.sm".
- Menus are compiled inside **ARRIS** using the :menld mnemonic command. The archiving of a compiled binary menu descriptor (.md) files to a menu library (.ml) was a command line process "mnar -r menu.md library.ml".
- The archive commands ("**smar**", "**mnar**") are also used to list, extract, and delete sigmacs /menus in/from the library.



After **ARRIS 7.0** there was an external Windows program - **ADE** - included with MS Windows releases of **ARRIS** to compile and archive sigmacs.

- Development environment - working directory can be specified.
- Global variables file may be specified.
- Source code files (.ff) may be opened in edited, although the text editor is very rudimentary.
- ADE allows a Compile of 1 or more source code files, and also a "Build" (Compile and Archive to the library in a single step) of 1 or more source files.
- Windows versions of the operating system command line archive programs "**smar**" and "**mnar**", (as well as the Repeated Item archive command "**riar**" which is similar) are included in **ARRIS**.
- Menus are still compiled inside **ARRIS** using the :menld mnemonic command. The archiving of menus into a library must be done using the Windows command line version of "**mnar**".

The MS Windows versions of these commands are somewhat clunky and more difficult to use. The Windows environment in general is much harder to develop in than Unix.

ARRIS Developer

1. Set up the Development Environment

- A. Make a directory on your computer where your development projects are to be stored - a "project" or "working" directory. Also within that directory, make a sub-directory where sigma / menu source code is to be stored.
- B. Set the Development Parameters in the Development Parameters menu in **ARRIS Developer**.
 - Default Development Working Directory
 - Default Sigmac Source Directory



- Default Menu Source Directory
- Default Menu Graphic Repeated Item Library
- Development Text Editor

Note: The Development Text Editor must work on pure ascii text files. For this reason a word processor (such as MS Word) is not recommended, even though it can save files as ascii text. Instead use a text editor. Defaults available in MS Windows are Notepad and Wordpad. I highly recommend Lemmy VI Editor - a Windows version of the standard Unix text editor which combines the keyboard and command line power of the Unix editor with a few nice things about Windows such as cut and paste.

2. The Sigmac Compile / Build Menu

The **Sigmac Compile Build Menu** is divided into 4 main parts.

- Source Files
- Binary Files
- Sigmac Library
- Compile / Build Log

Source Files

- Source directory
- Source File List (.ff files)
- Source Commands
 - Selection
 - Compile
 - Build
 - Global Variables File(s)
 - Edit Source

Binary Files

- Working Directory



- Binary File List (.gg files)
- Binary Commands
 - Selection
 - Archive
 - Delete

Sigmac Library

- Sigmac Library
- Library Archive List (.gg files)
- Library Commands
 - Selection
 - Extract
 - Delete
 - Library Load / Unload

Compile / Build Log

- Display Mode
 - All Log Messages
 - Errors Only
 - Sigmac Archive Long Listing
- Log Commands
 - Clear Display
 - Print Log

3. The Menu Compile / Build Menu

The **Menu Compile Build Menu** is divided into 4 main parts and is just like the Sigmac Compile Build Menu.

- Source Files
- Binary Files
- Menu Library



- Compile / Build Log

Source Files

- Source directory
- Source File List (.mt files)
- Source Commands
 - Selection
 - Compile
 - Build
 - Menu Repeated Items (On/Off)
 - Menu Help (On/Off)
 - Edit Source
 - Create Menu Repeated Items (Only)
 - Create Menu Help (Only)

Binary Files

- Working Directory
- Binary File List (.md files)
- Binary Commands
 - Selection
 - Archive
 - Delete

Menu Library

- Menu Library
- Library Archive List (.md files)
- Library Commands
 - Selection
 - Extract
 - Delete
 - Library Load / Unload

Compile / Build Log



- Display Mode
 - All Log Messages
 - Errors Only
 - Menu Archive Long Listing
- Log Commands
 - Clear Display
 - Print Log

4. Sigmac / Menu Library Commands

The **ARRIS Developer** has commands to load, unload, and check the status of both Sigmac and Menu libraries. The Sigmac and Menu library commands work exactly the same. The **Load** commands load libraries making the Sigmacs / Menus contained in the library active for use in **ARRIS**. The **Unload** commands unload libraries which deactivates Sigmacs / Menus contained in them. The **Status** commands list the libraries that are loaded.

5. Utilities

The **ARRIS Developer** has utilities which are useful in the development process.

Menu RI Select - Opens the RI Select Menu with the default menu creation RI library loaded. This shows the graphic RI used to create the menu.

Menu RI Manager - Opens the RI Library Manager with the default menu creation RI library loaded. This allows you to manipulate the graphic RIs used to create the menu.