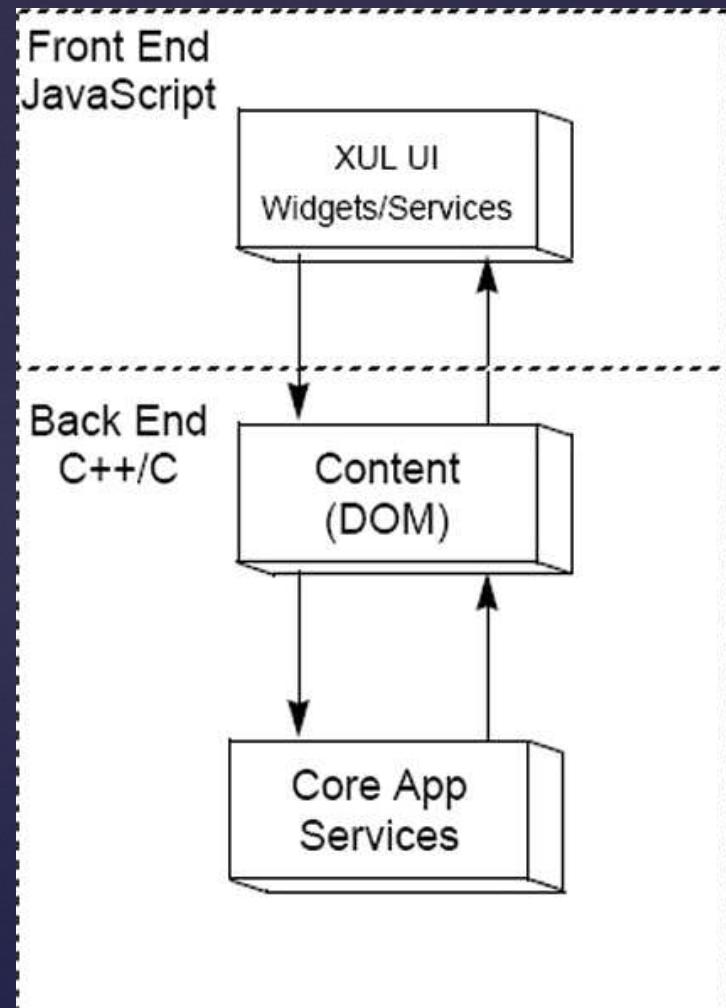


# Firefox Concrete Architecture

{ By: The Other Group

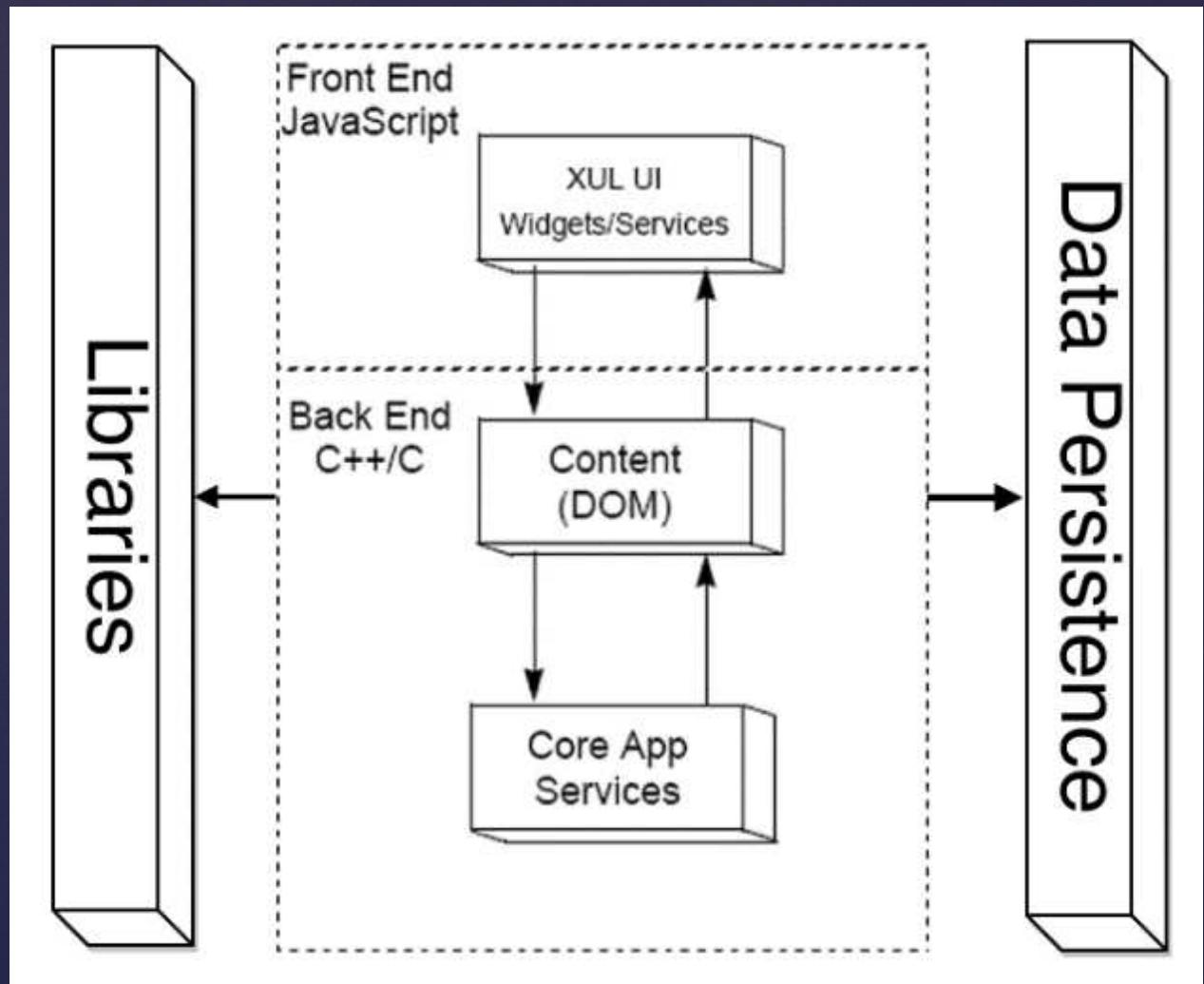
# Original Conceptual Architecture

- ❖ A layered-style architecture consisting of 3 distinct layers, each with its own unique architecture
  - ❖ XUL UI Widgets/Services
    - ❖ Consists of services and widgets
  - ❖ Content (DOM)
    - ❖ Utilizes a Hybrid Pipeline-Repository architecture
  - ❖ Core App Services – Object-Model (XPCOM)
    - ❖ Consists entirely of XPCOM objects



# Updated Conceptual Architecture

- & Layers interface with libraries and data-persistence.
- & Still retains the main layered-style approach (Utilizes three layers with unique architectures)

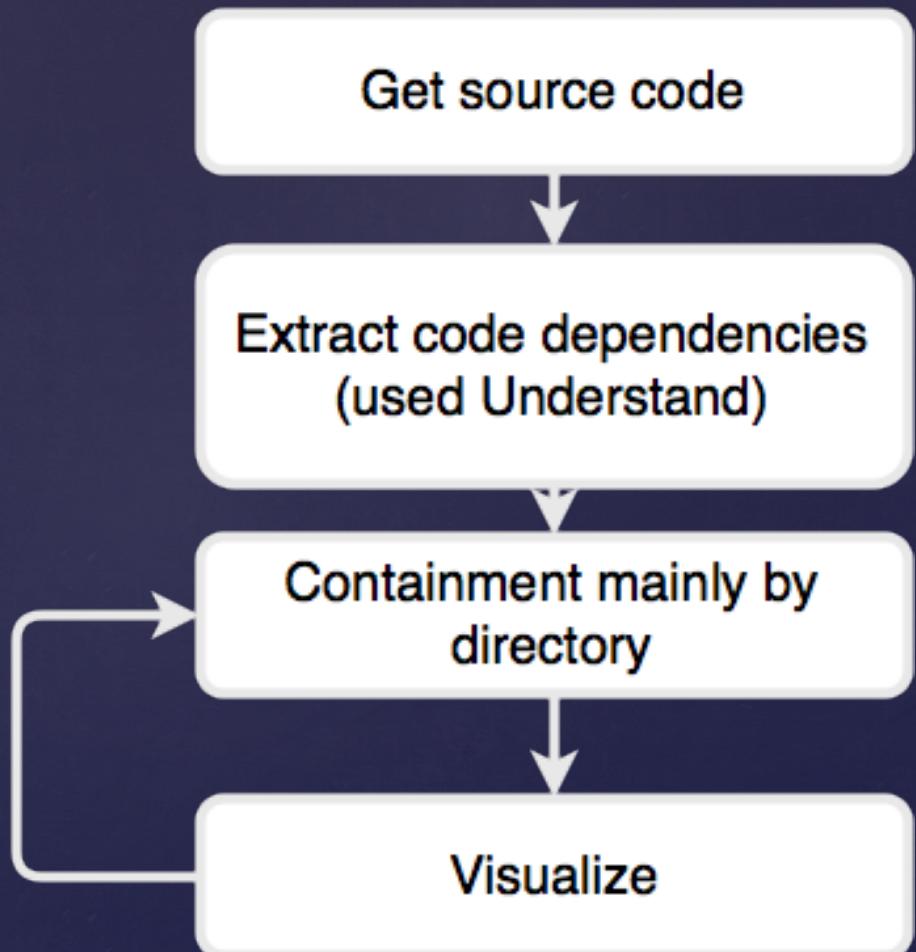


# Extraction Method

## & Extraction tools:

- ς Provided base relations  
*These were acquired using Understand*
- ς Provided base layout
- ς Provided a base containment file
- ς Wrote containment rules

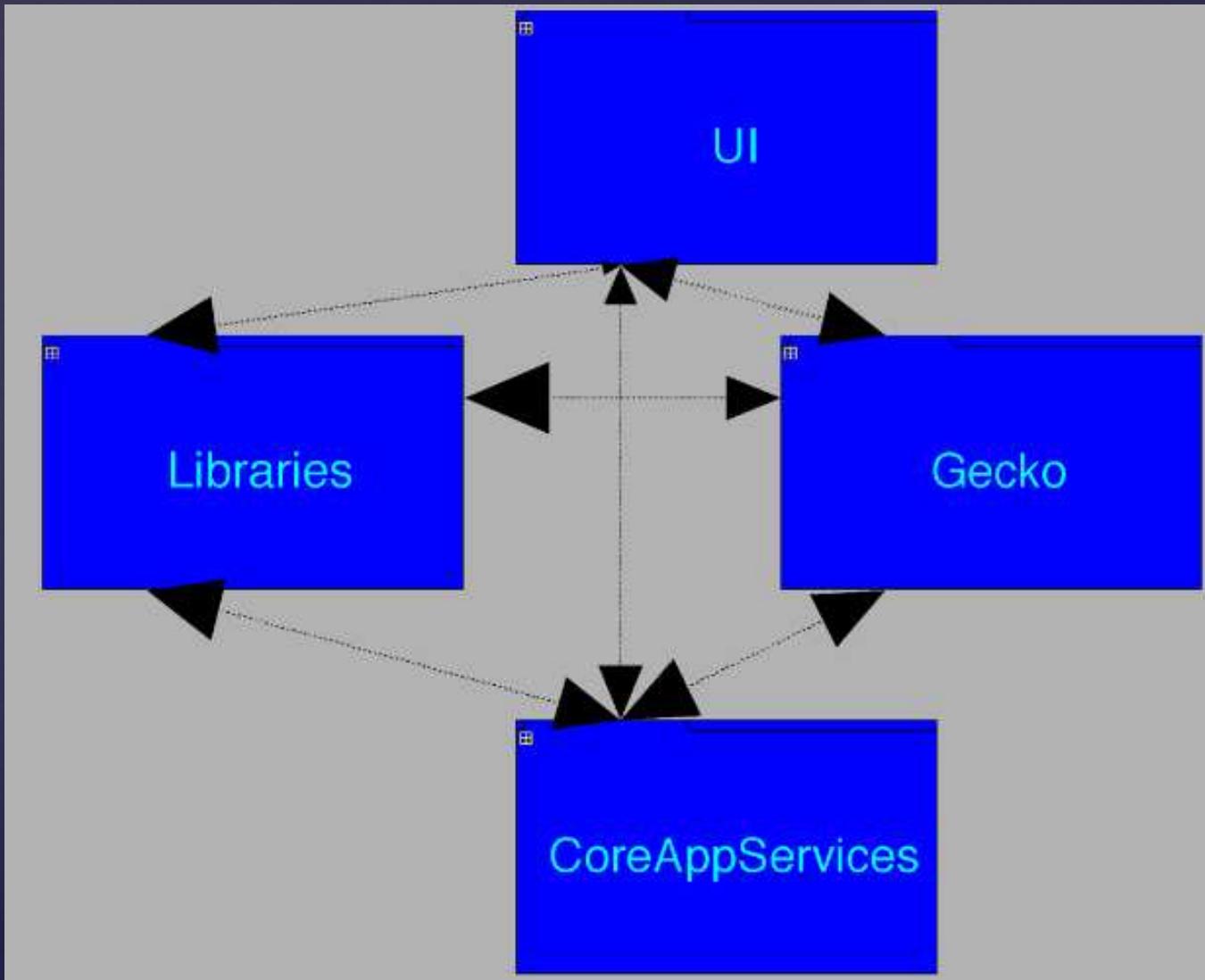
& Containment Rules were written to move folders into specific sections as well as 'name' folders



# Concrete Architecture

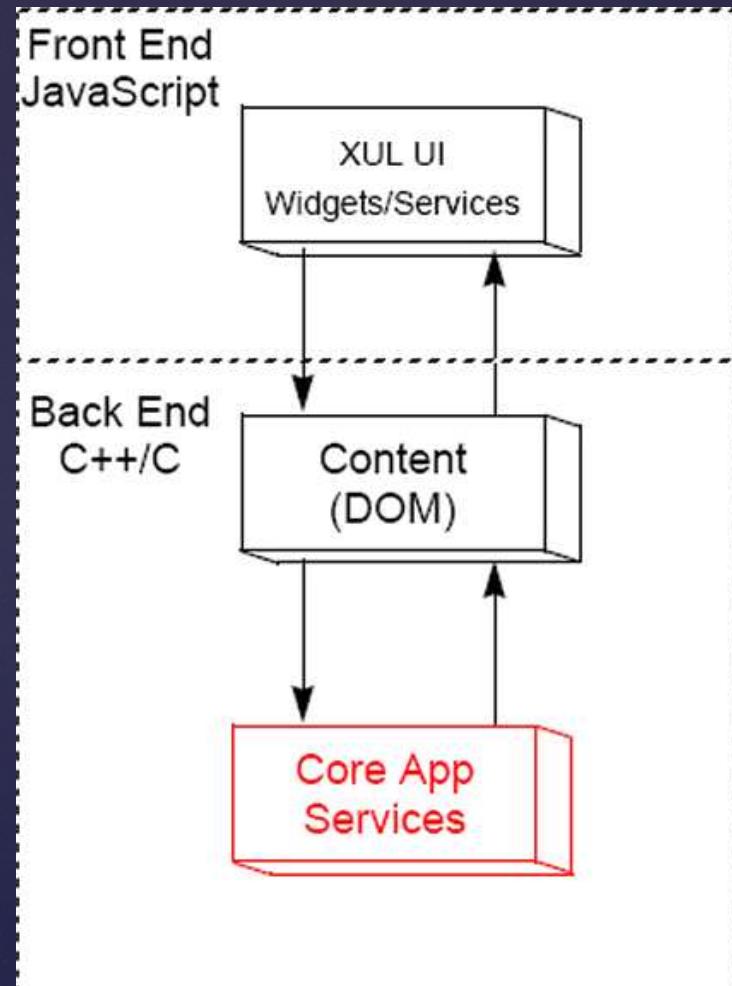
- ¶ The layout gravitated towards the conceptual three-layered architecture. Most modules fit distinctly inside one of the three layers, or a library.
- ¶ Most of the objects/components interface mostly within the same layer or with the Libraries.
- ¶ Some dependencies exist across layers (i.e .skipping a layer)
  - ☒ These however, were far fewer in number than the expected dependencies.
  - ☒ Mostly exist for optimization reasons.

# Concrete Architecture

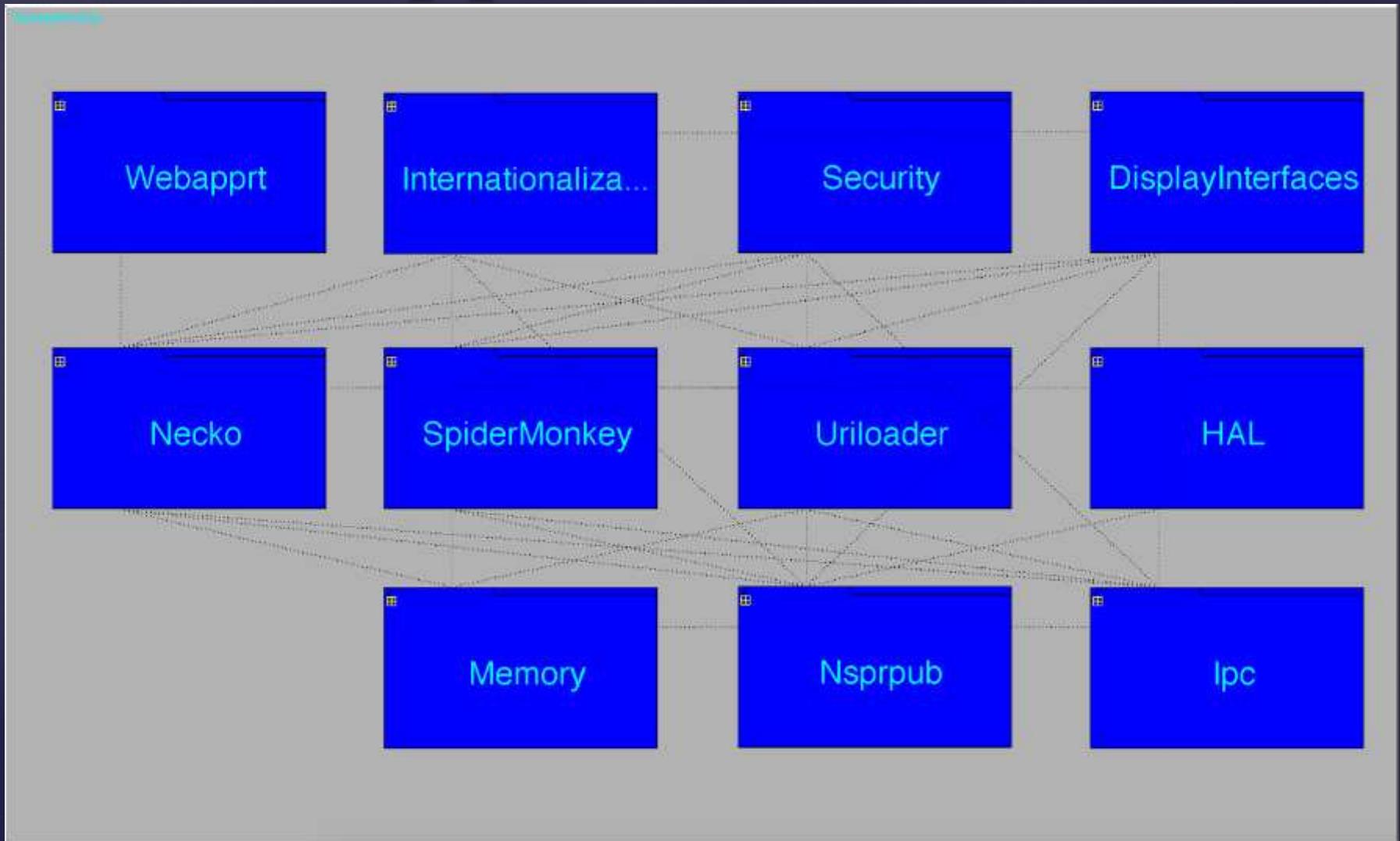


# Core App Services

- Similar to the conceptual architecture the bottom layer, known as ‘Core App Services’ implements an object-oriented style, consisting entirely of XPCOM implementations
- Dependencies in this layer were predicted to be to/from the Content Layer
- Less dependencies were expected within ‘Core App Services’



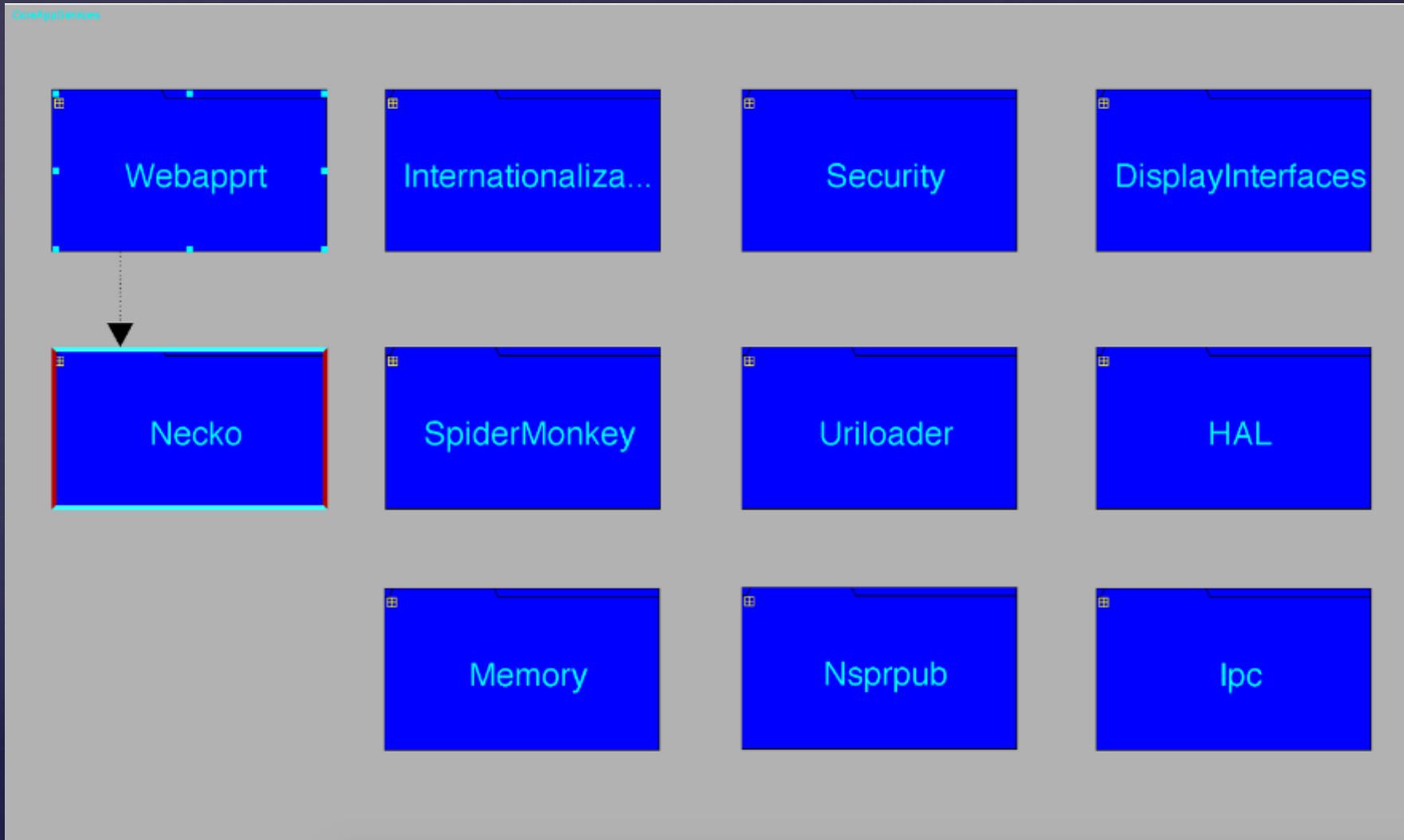
# Core App Services



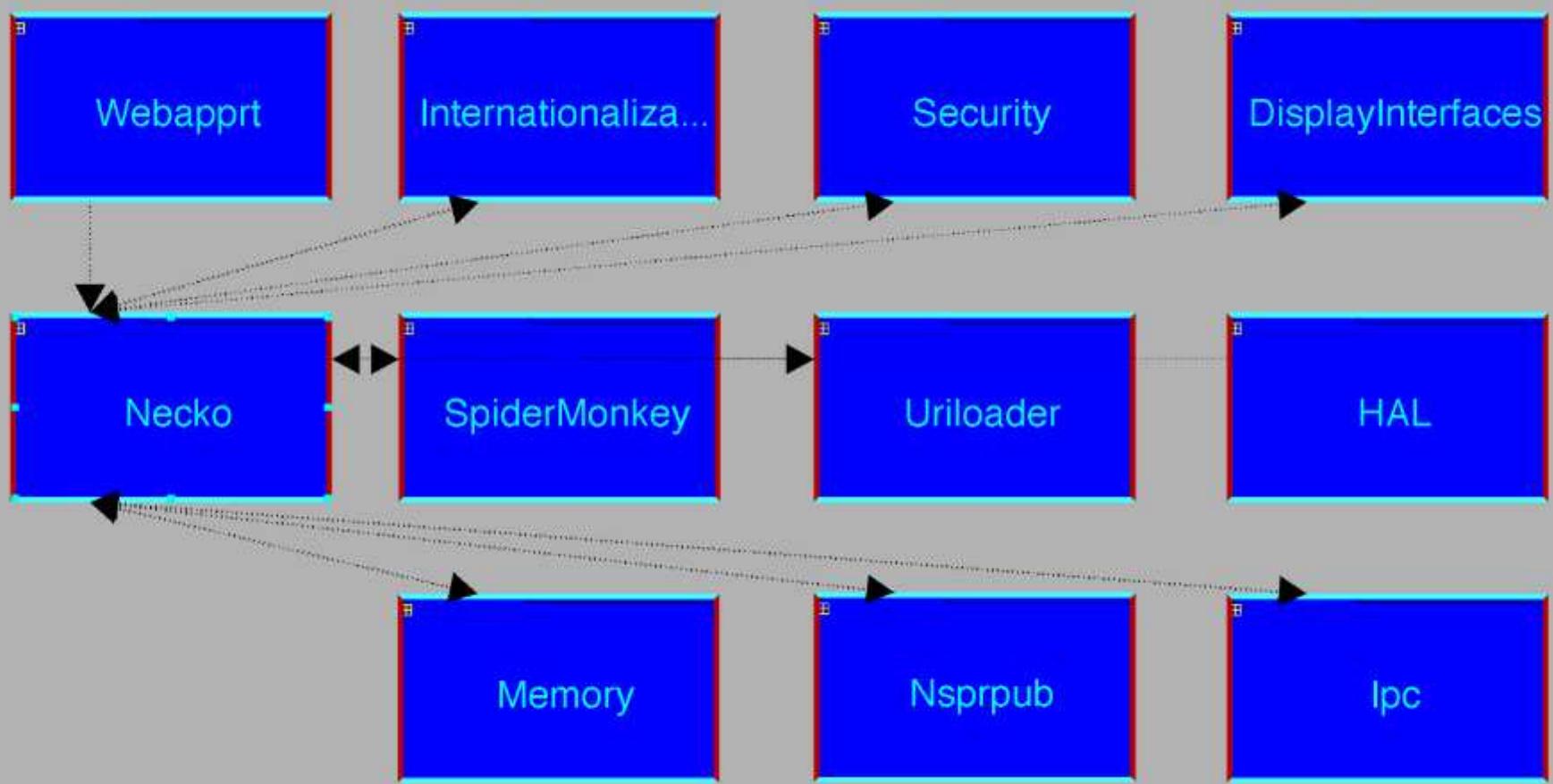
# Core App Services

- WebAppRT
- Necko
- Internationalization
- SpiderMonkey
- Memory
- Security
- URILoader
- NSPRpub (Netscape Plugable Runtime)
- DisplayInterfaces
- HAL (Hardware Abstraction Layer)
- IPC (Inter-process Communication)

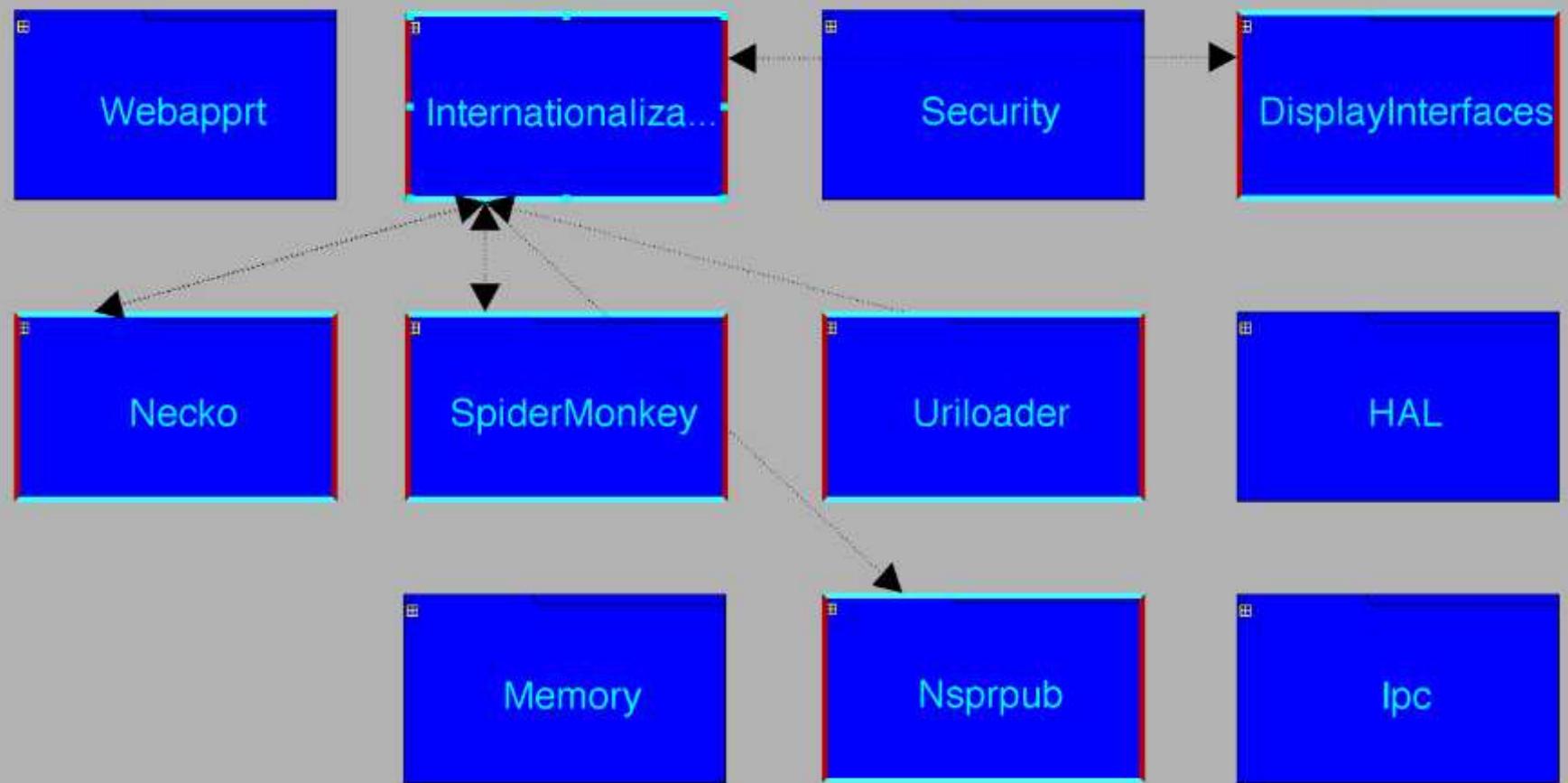
# Webapprt



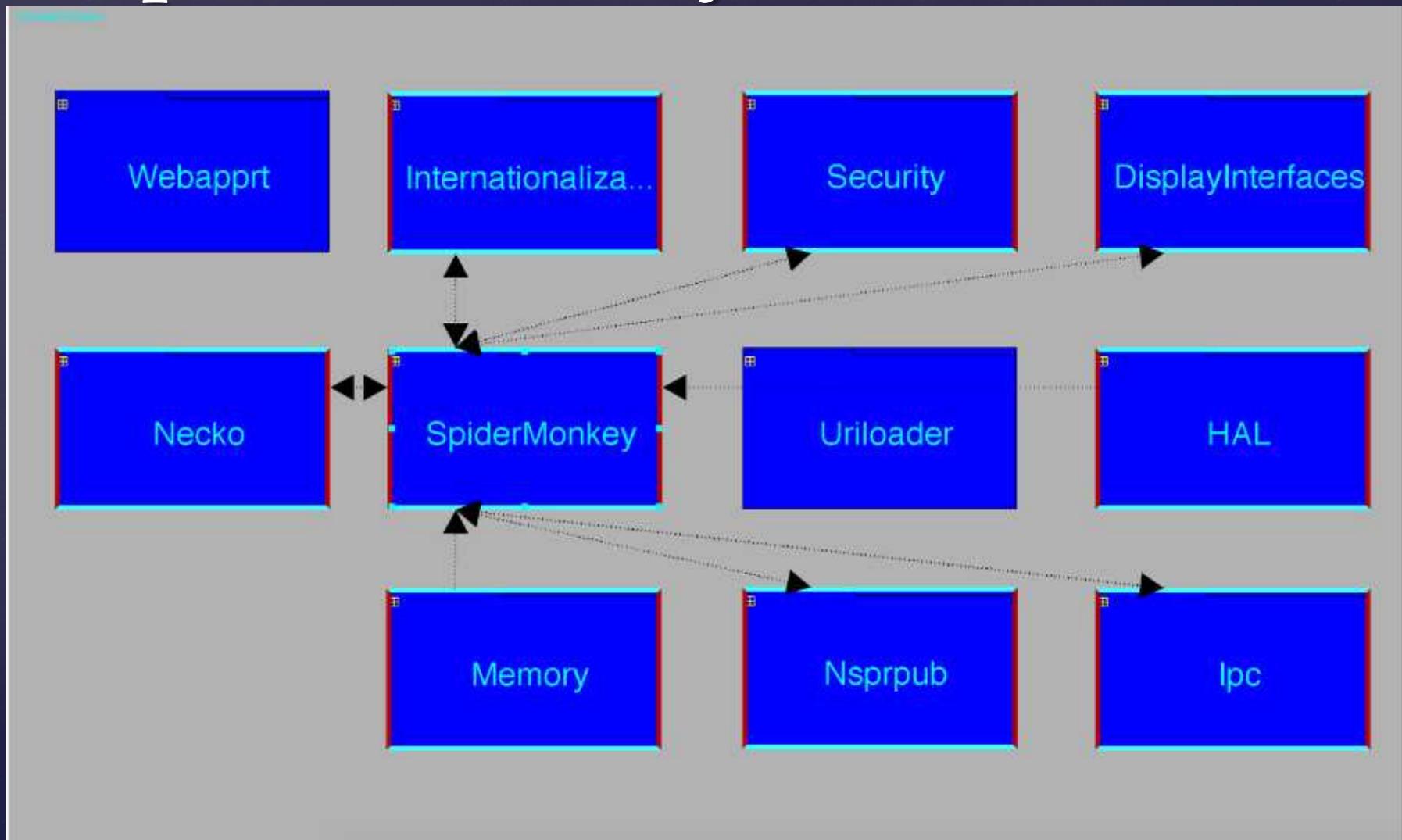
# Necko



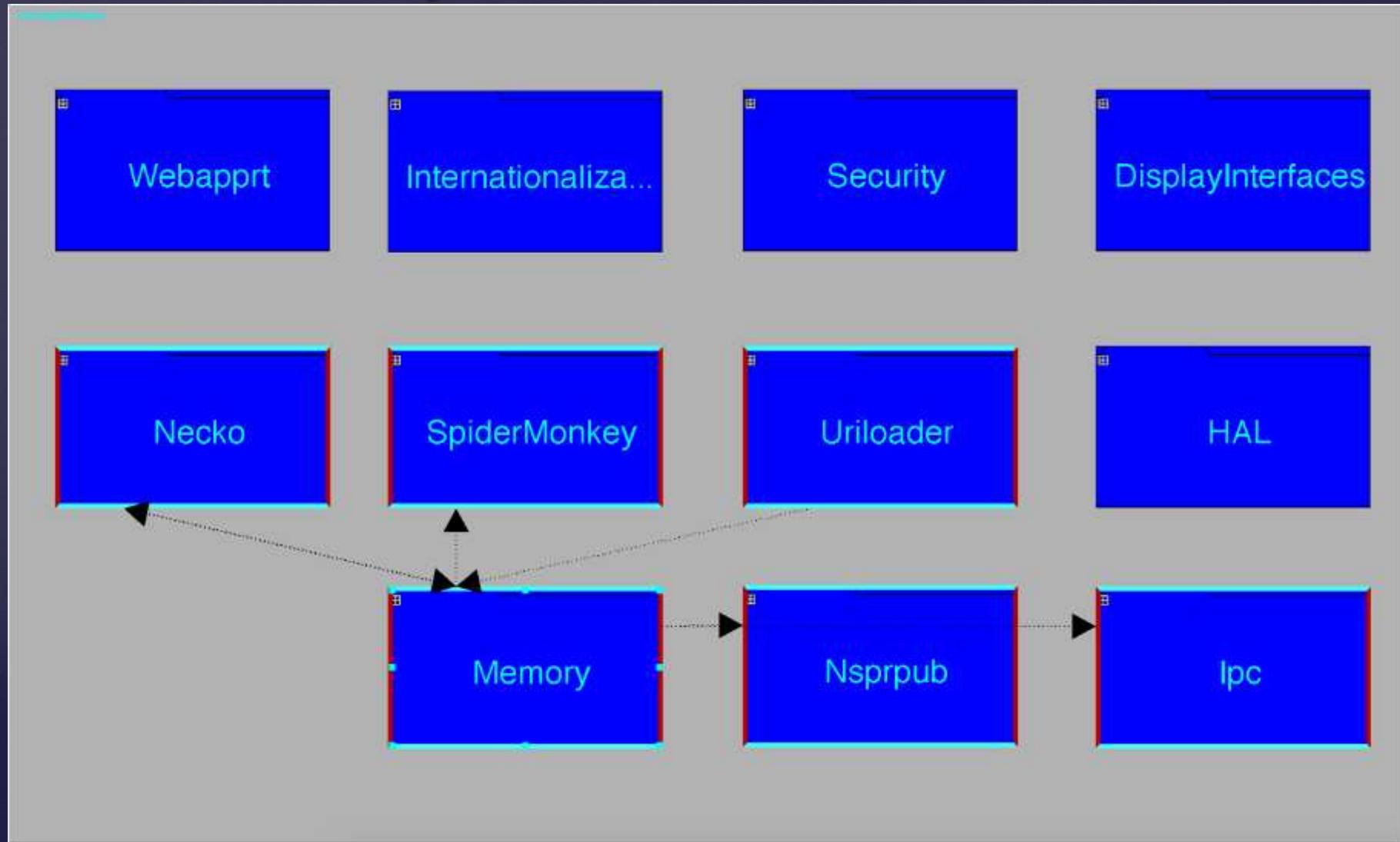
# Internationalization



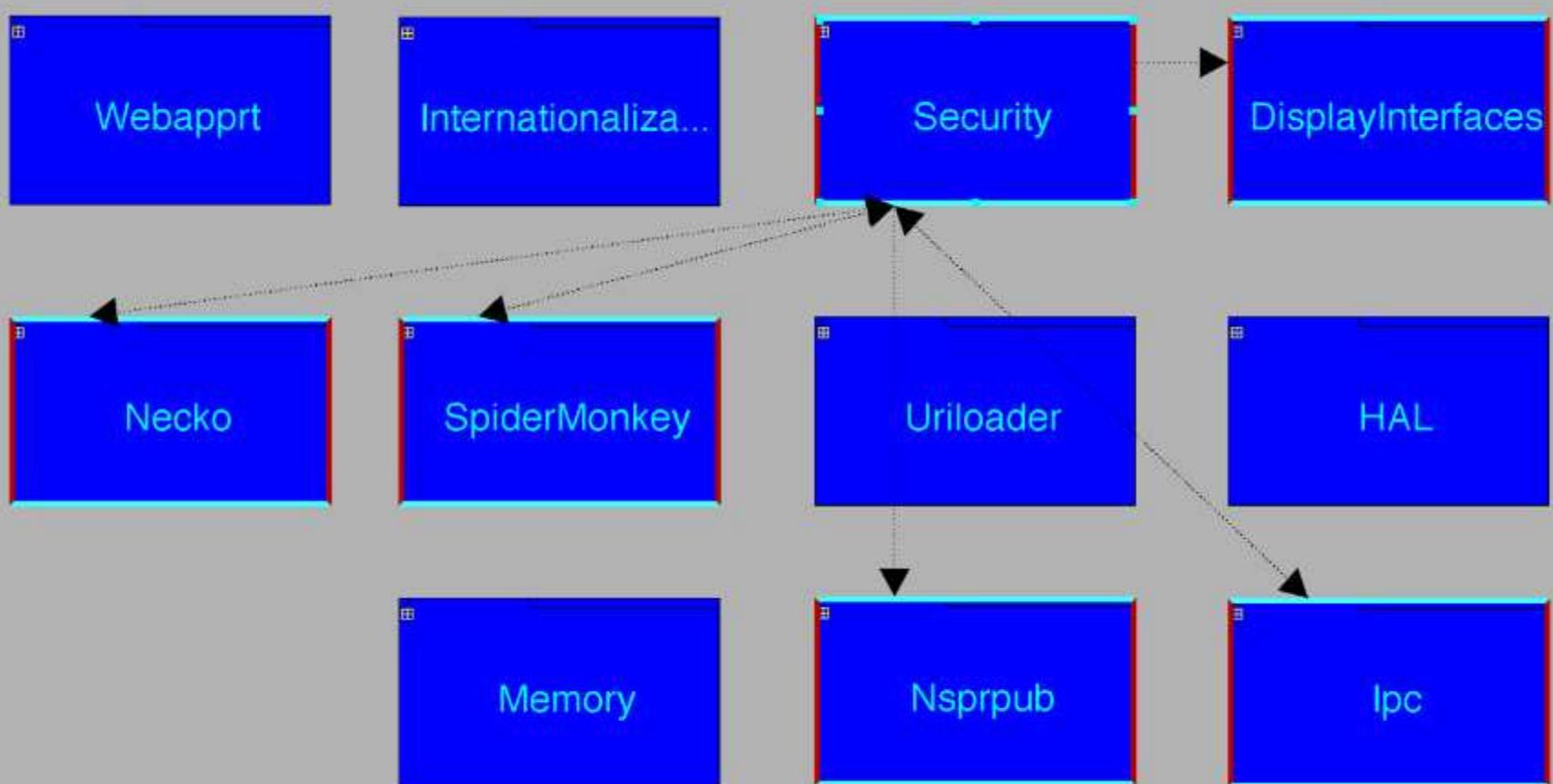
# SpiderMonkey



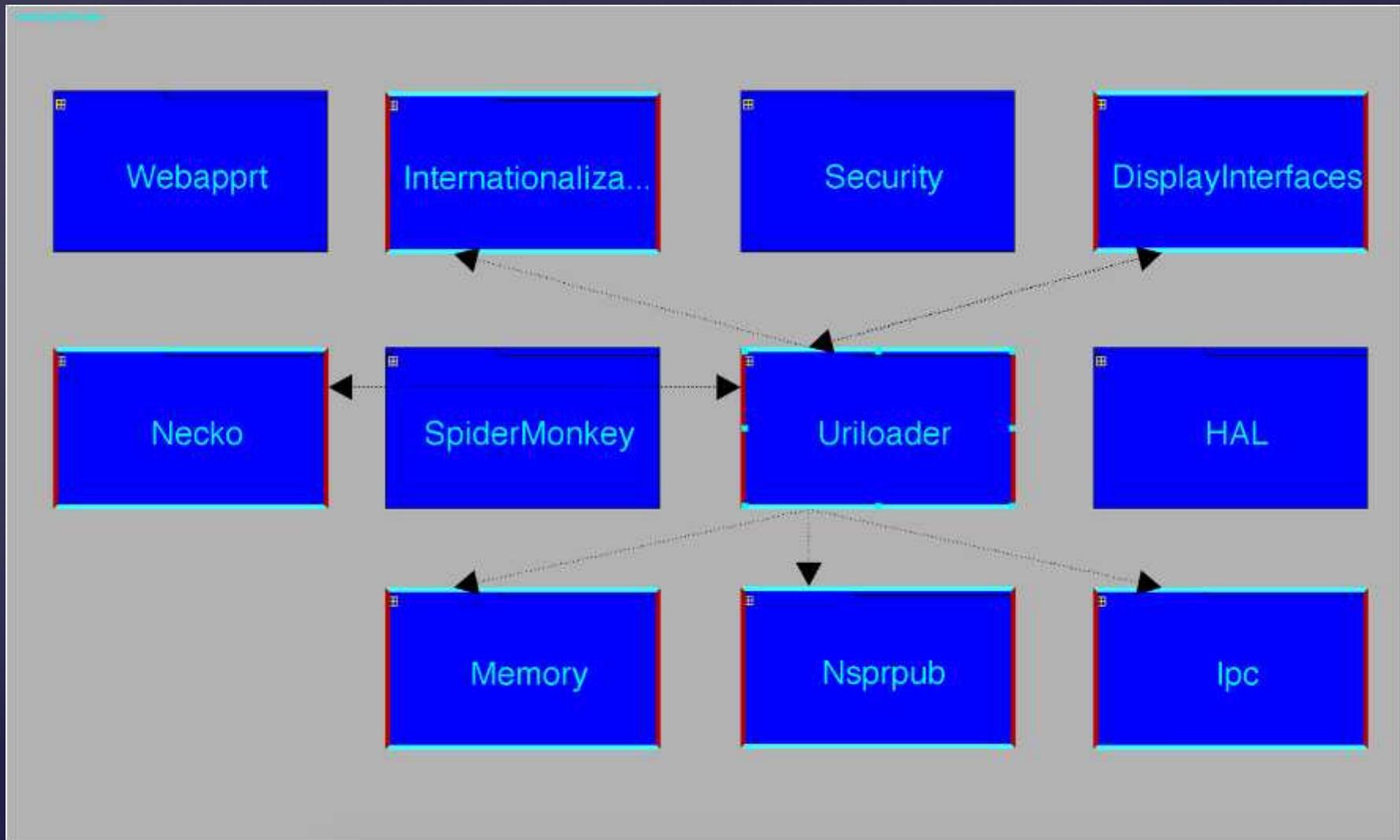
# Memory



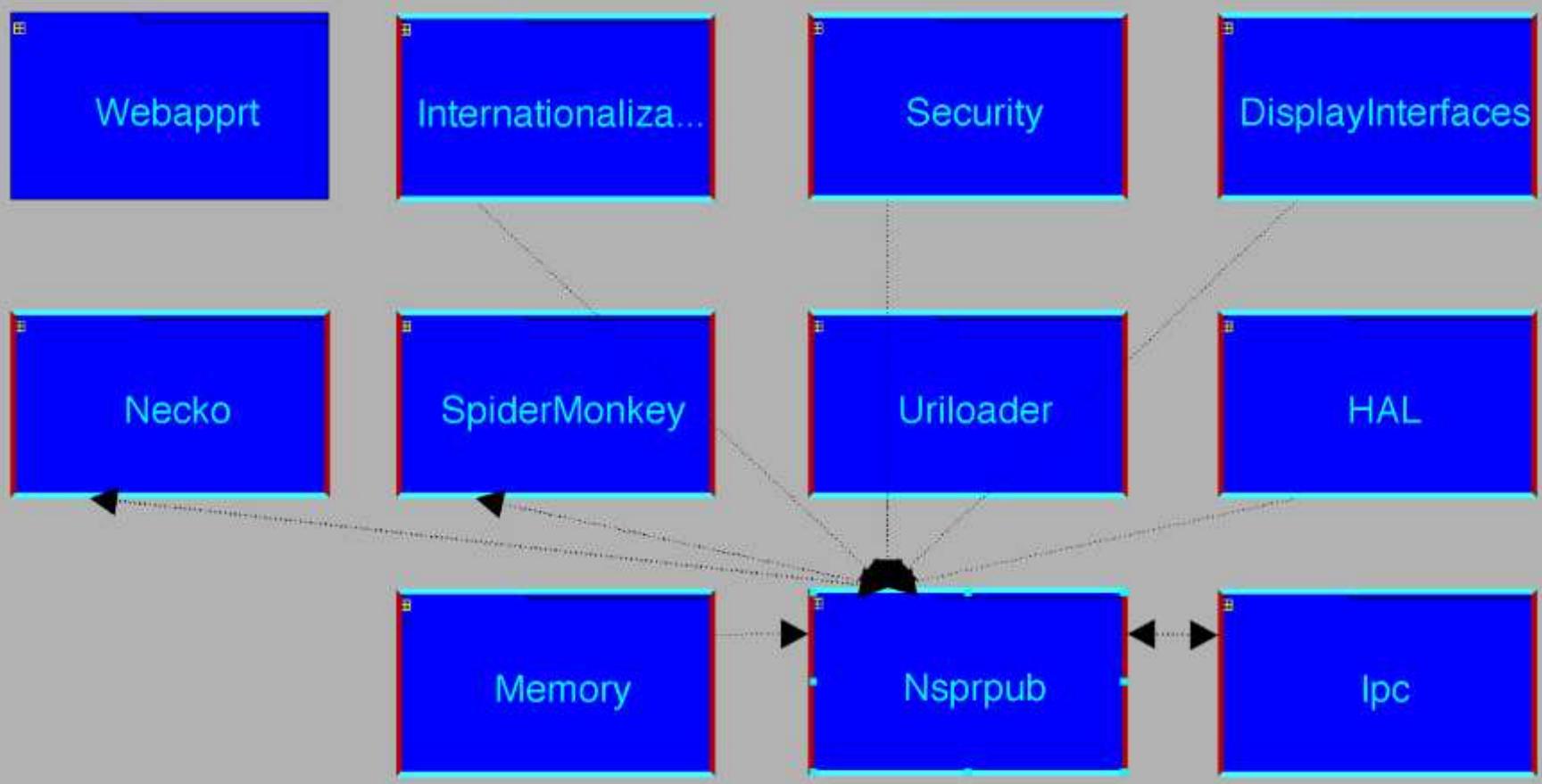
# Security



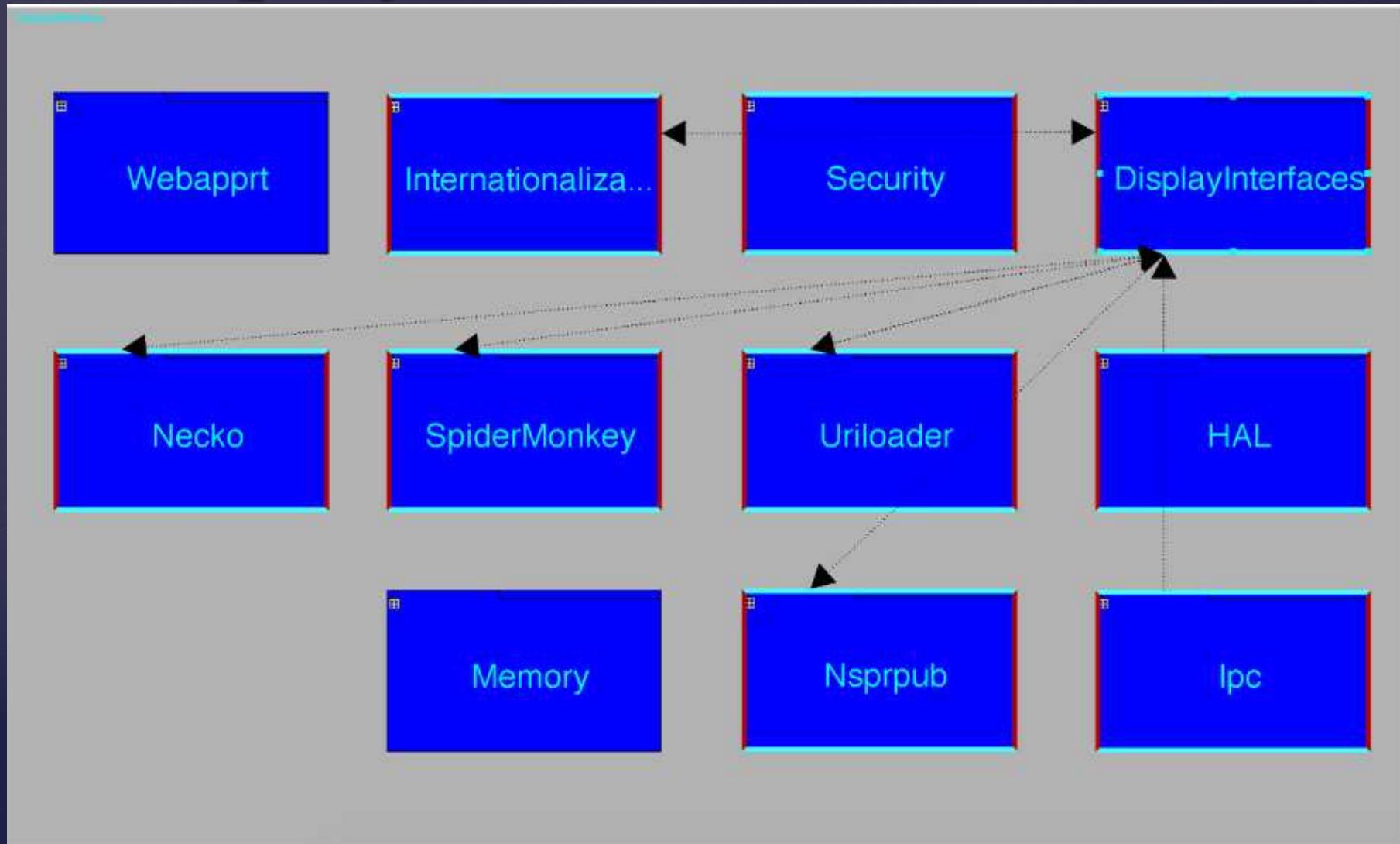
# Uriloader



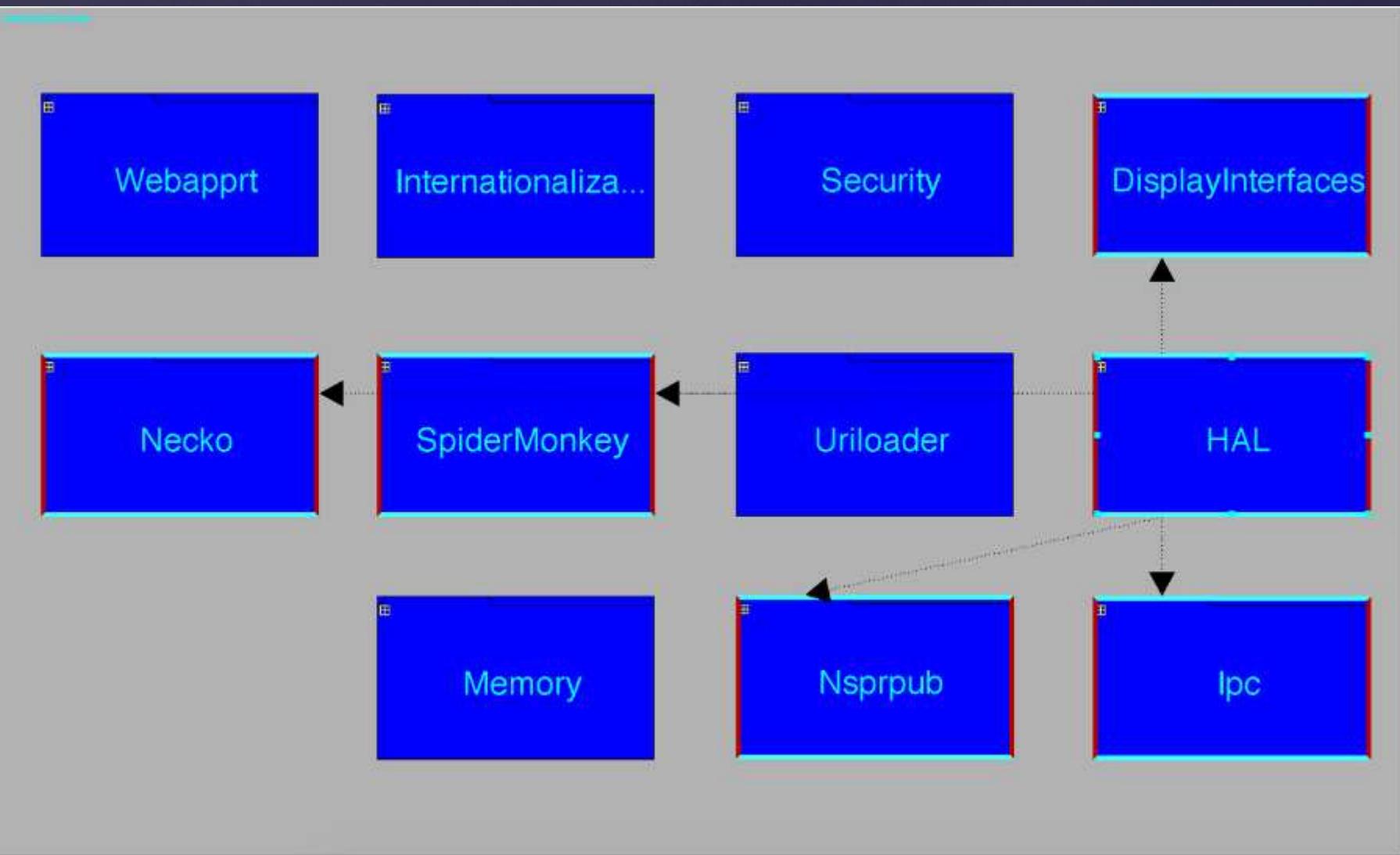
# NSPRpub



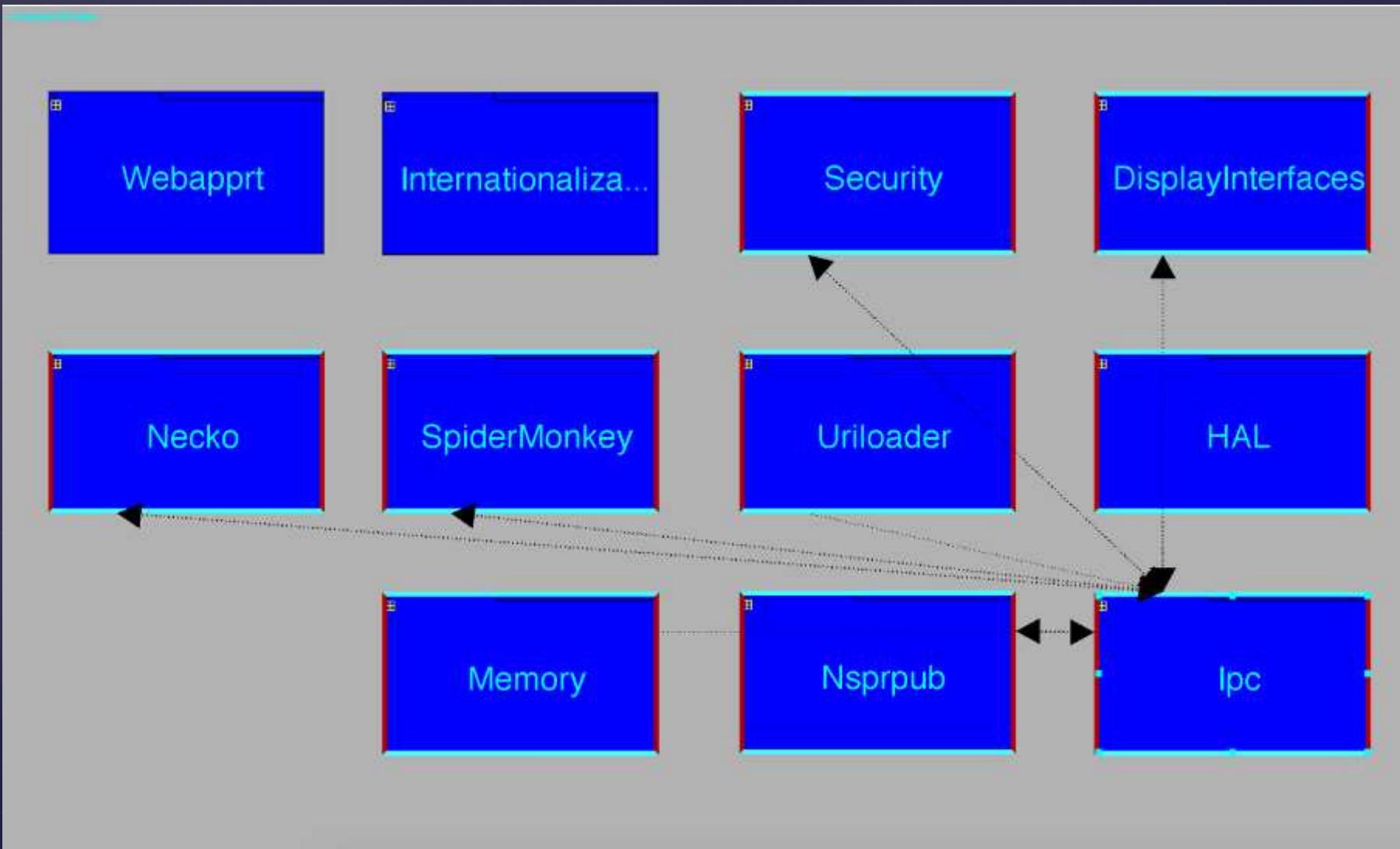
# DisplayInterfaces



# HAL



# IPC



# References

- [https://developer.mozilla.org/en-US/docs/Mozilla/Developer\\_guide/Source\\_Code/Directory\\_structure](https://developer.mozilla.org/en-US/docs/Mozilla/Developer_guide/Source_Code/Directory_structure)
- <https://developer.mozilla.org/en-US/docs/Mozilla/Projects/NSPR>
- <https://wiki.mozilla.org/Apps/WebRT>