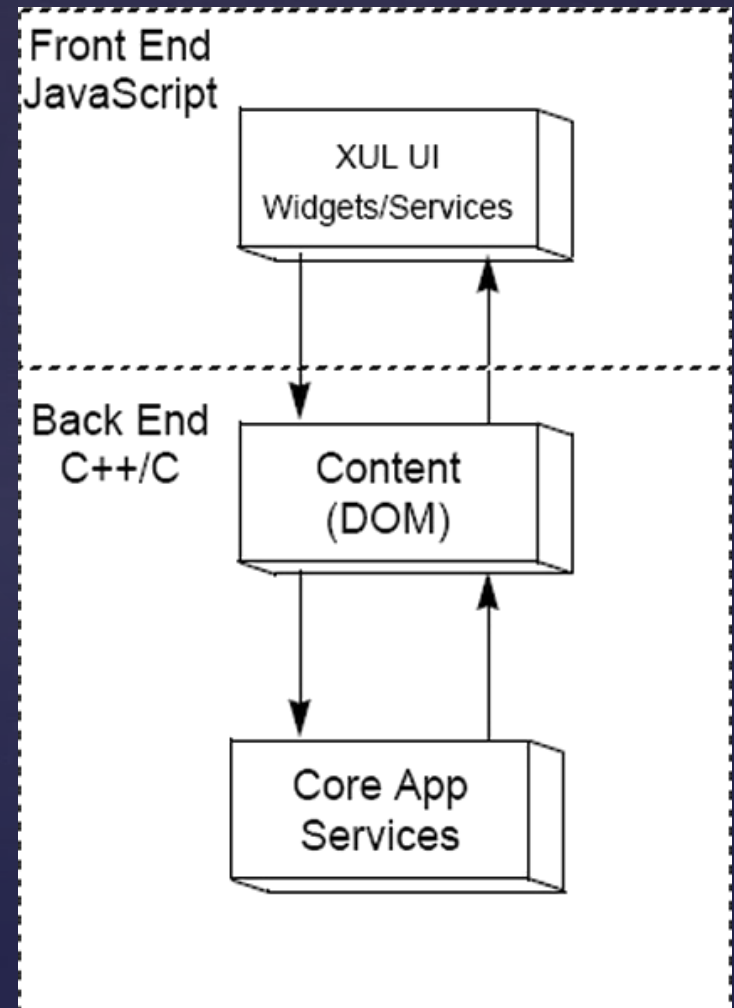


Firefox Concrete Architecture

{ By: The Other Group

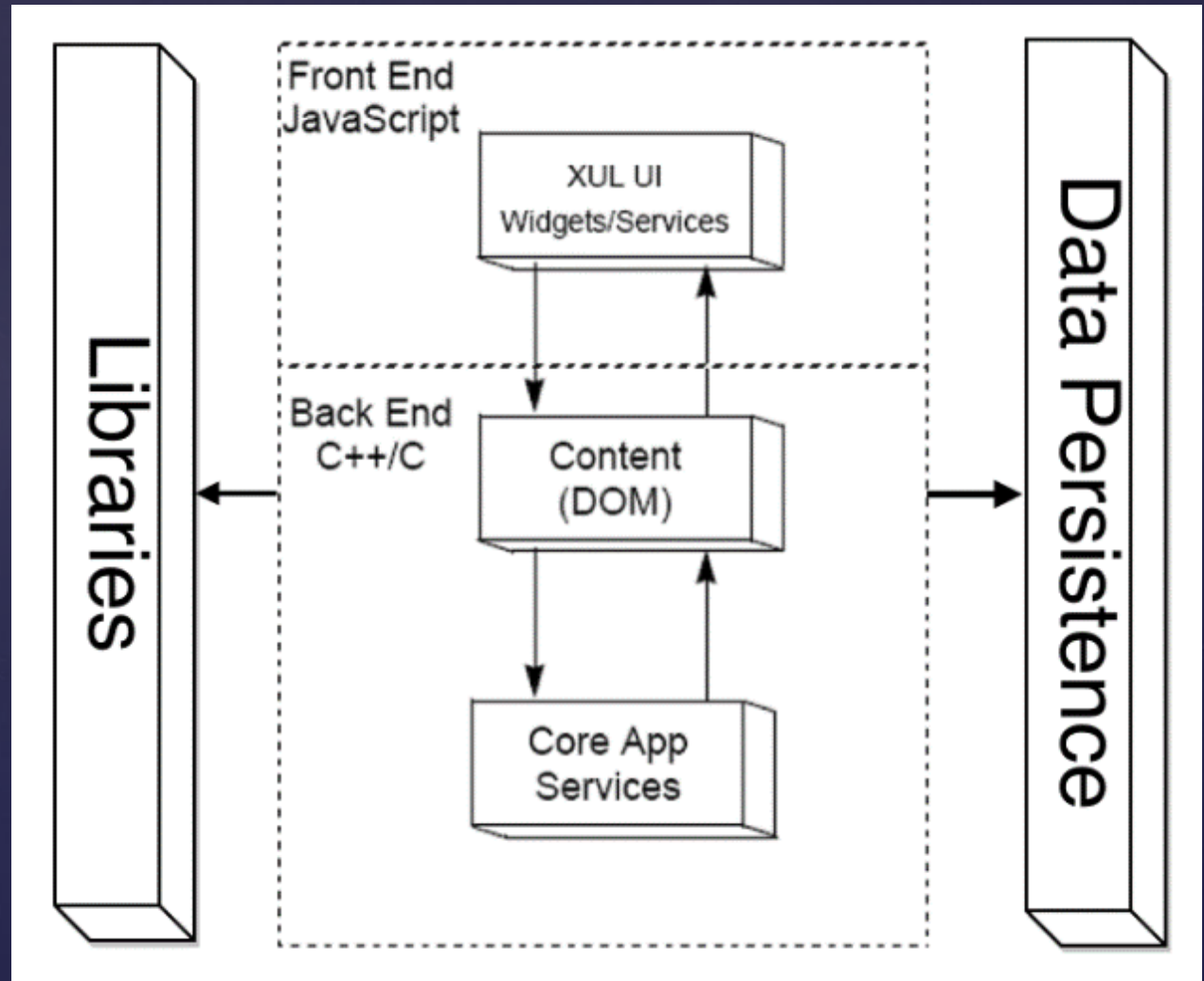
Original Conceptual Architecture

- ⌘ 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

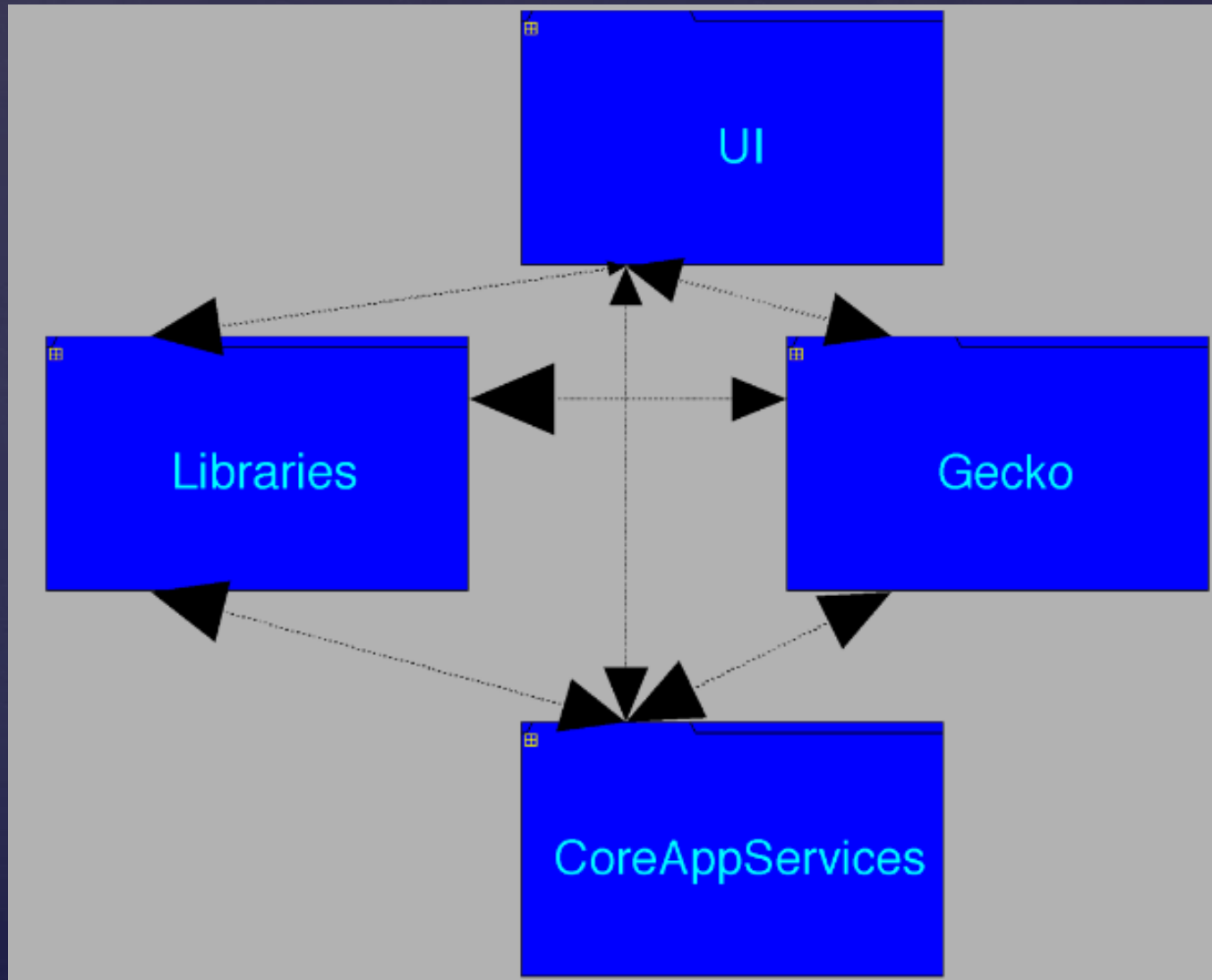
- ⌘ Layers interface with libraries and data-persistence.
- ⌘ Still retains the main layered-style approach (Utilizes three layers with unique architectures)



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



Extraction Method

⌘ Extraction tools:

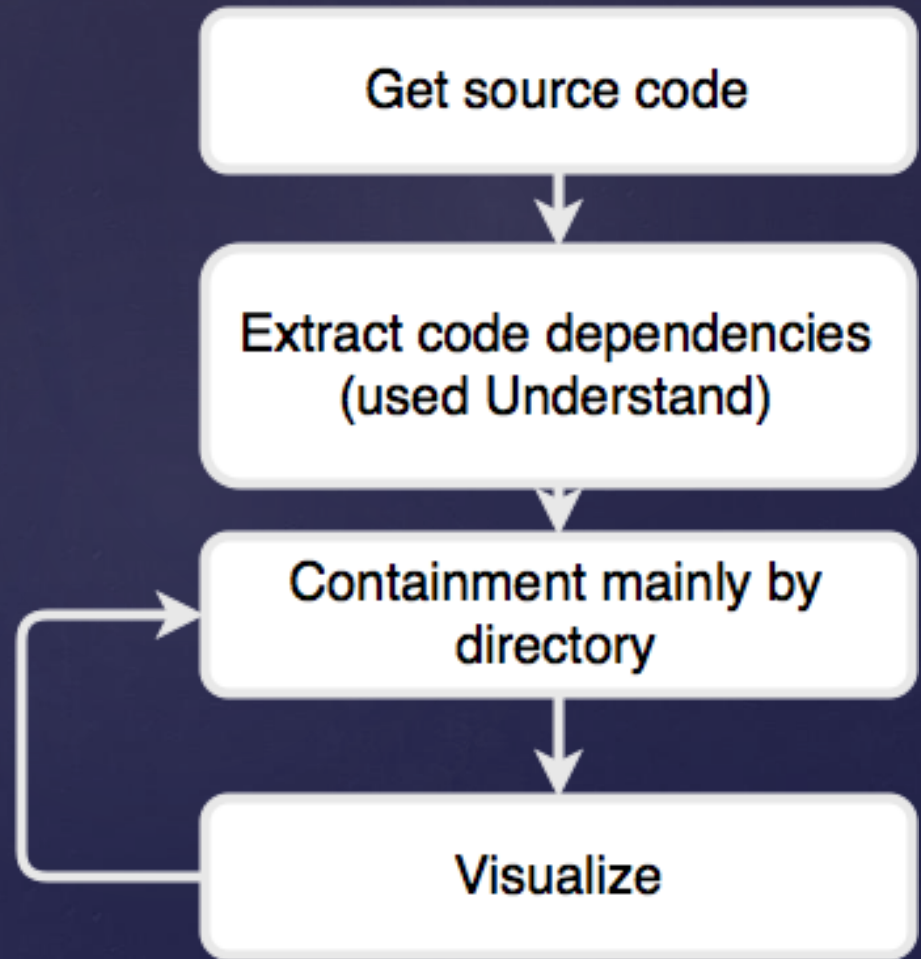
- ⌘ Provided base relations
These were acquired using Understand

- ⌘ Provided base layout

- ⌘ Provided a base containment file

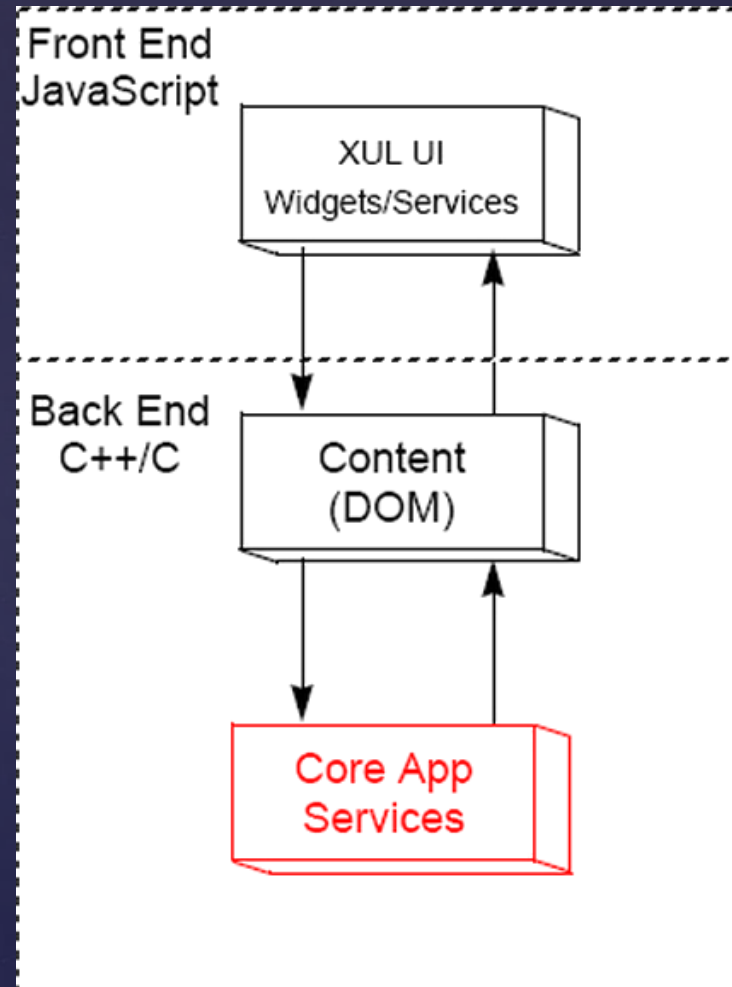
- ⌘ Wrote containment rules

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



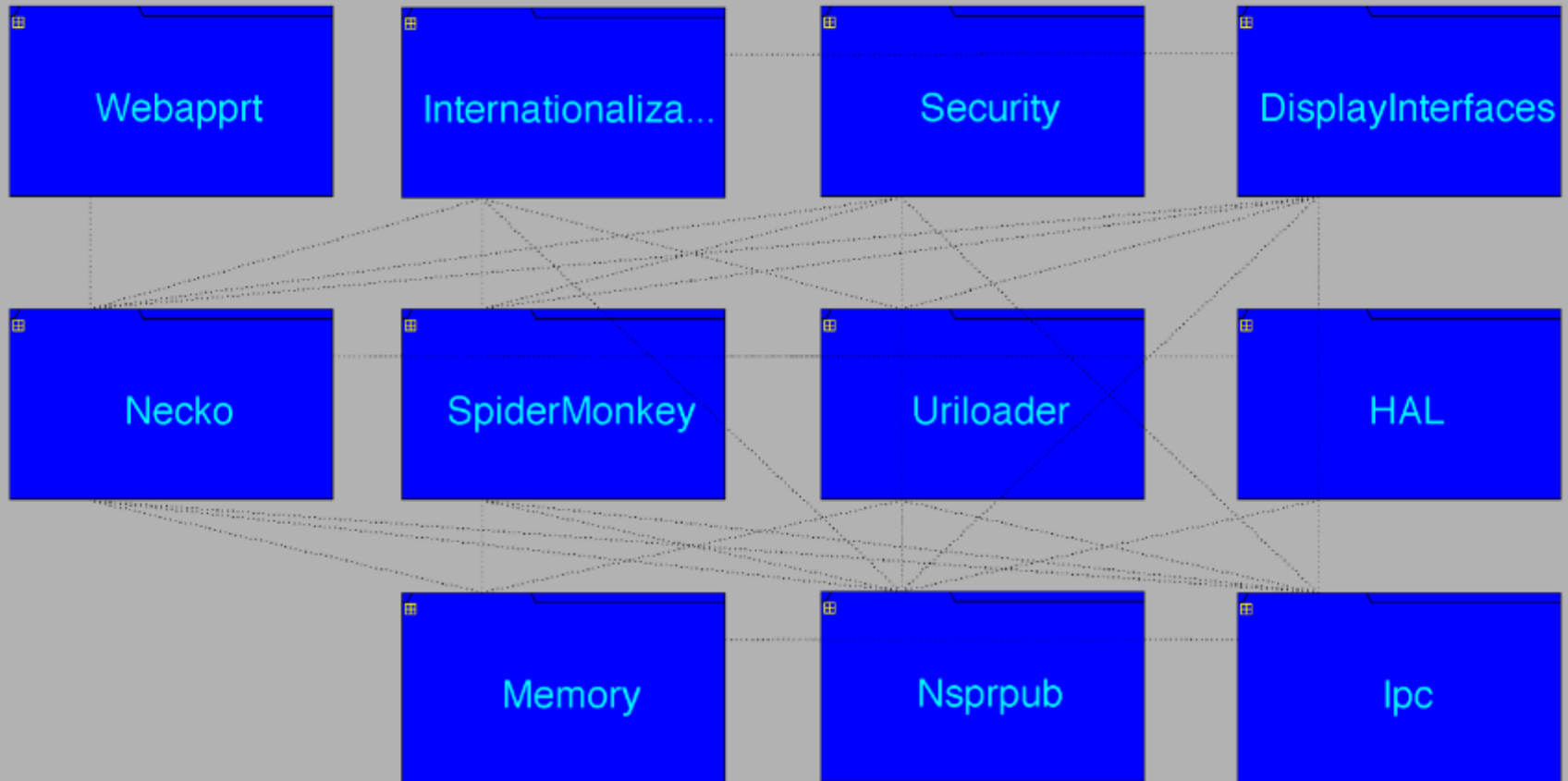
Core App Services

- ⌘ 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

CoreAppServices



Core App Services

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

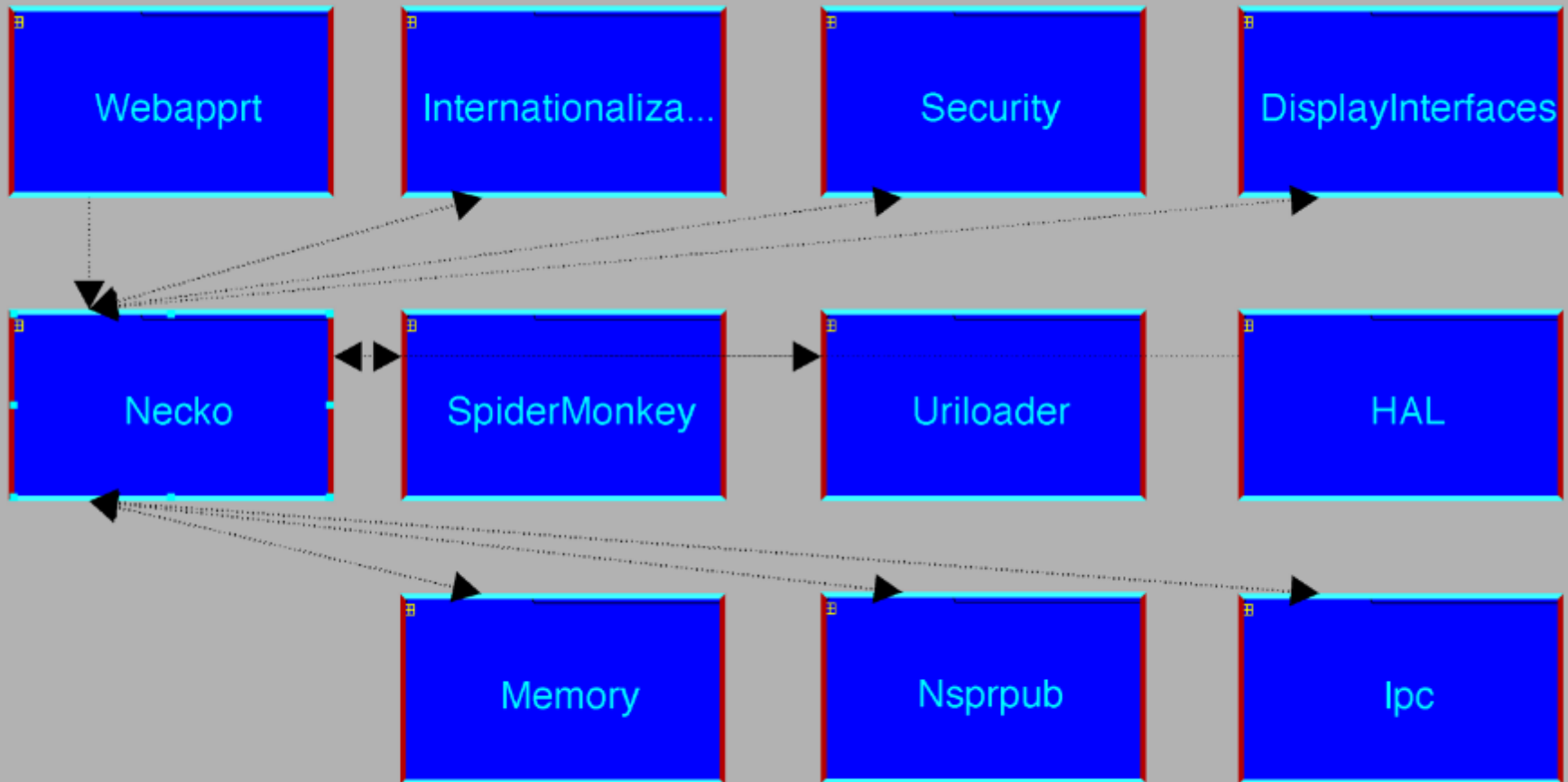
Webapprt

CoreAppInterfaces



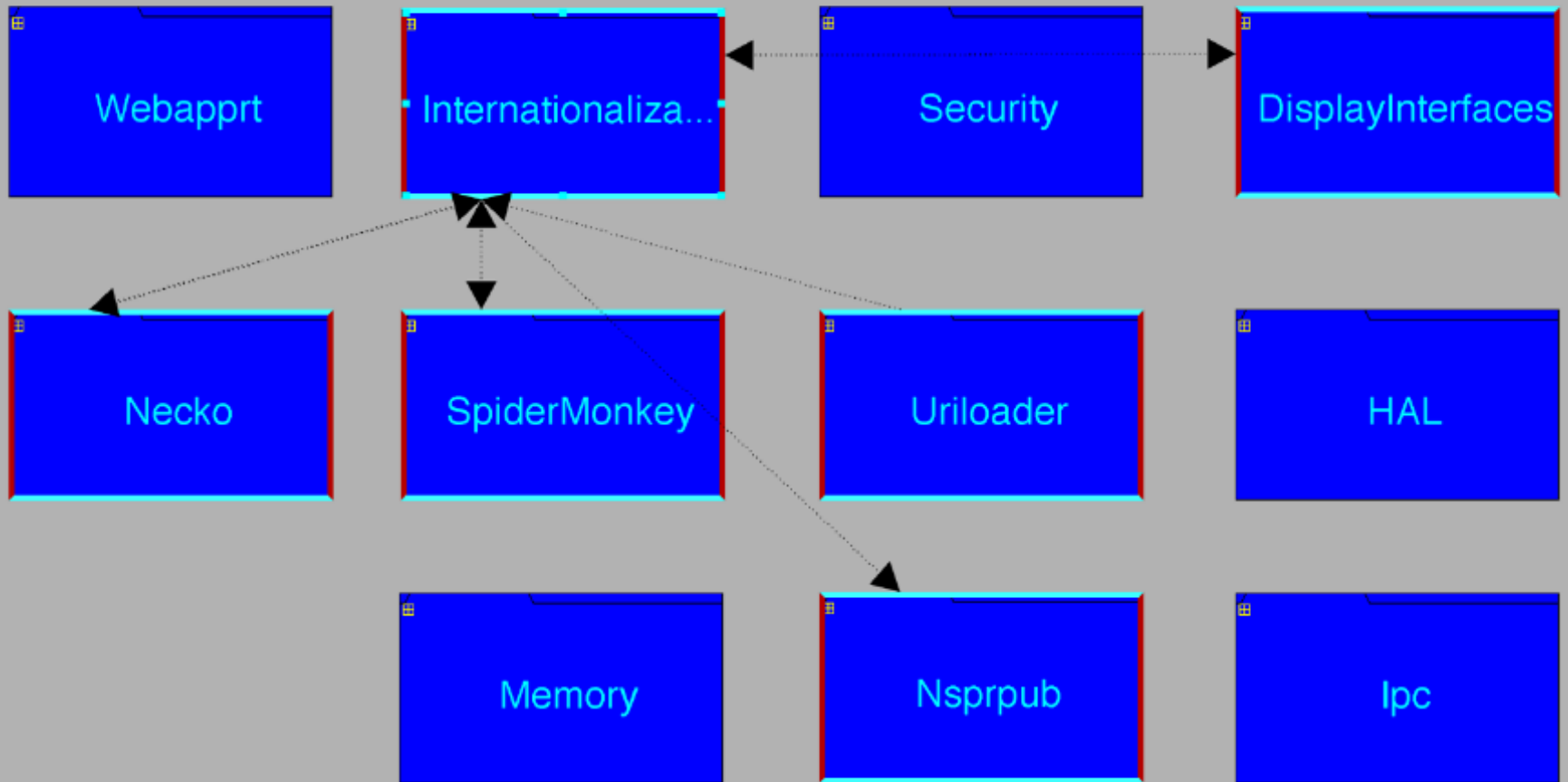
Necko

GeckoAppServices



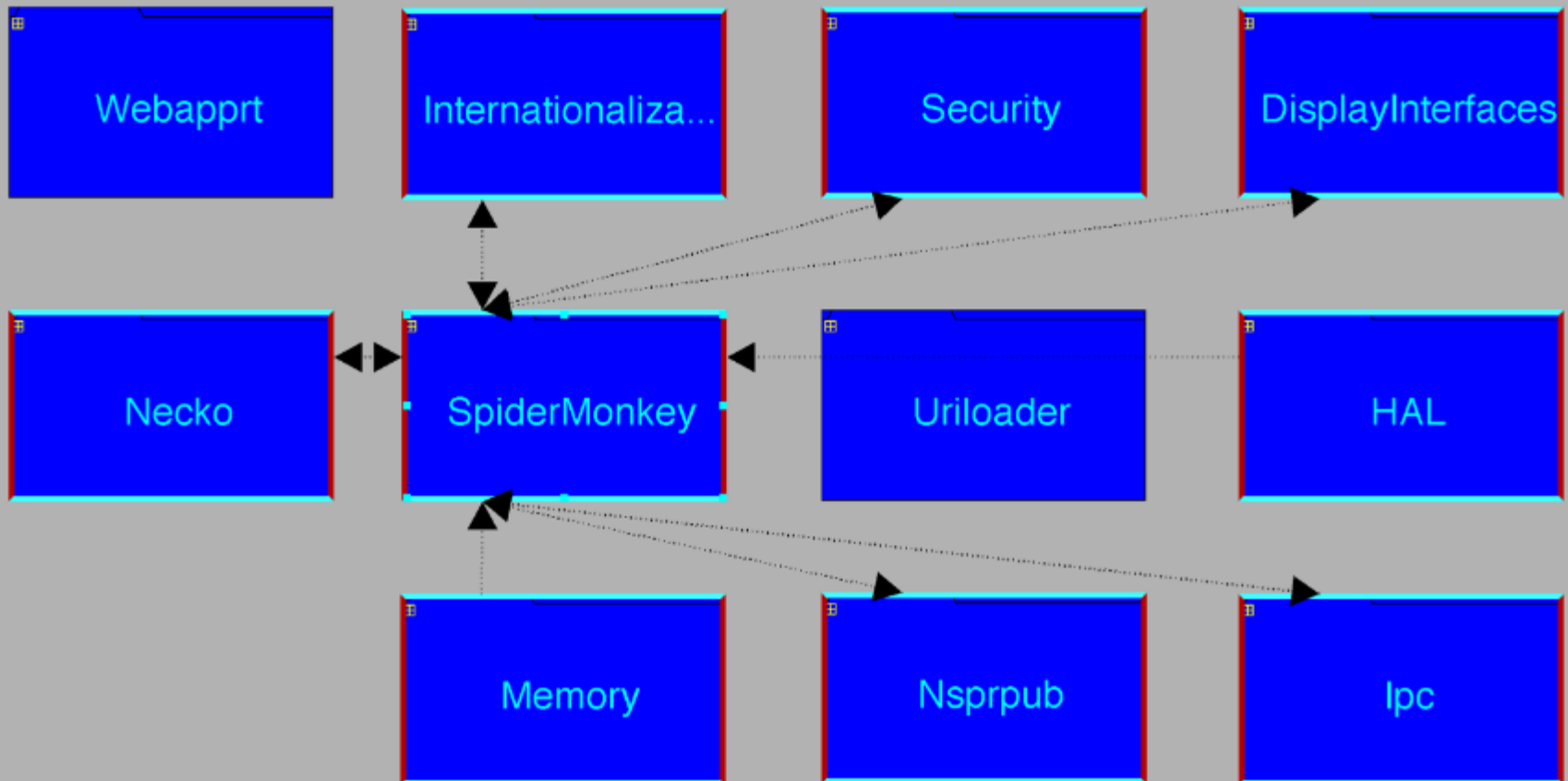
Internationalization

CocoaPods



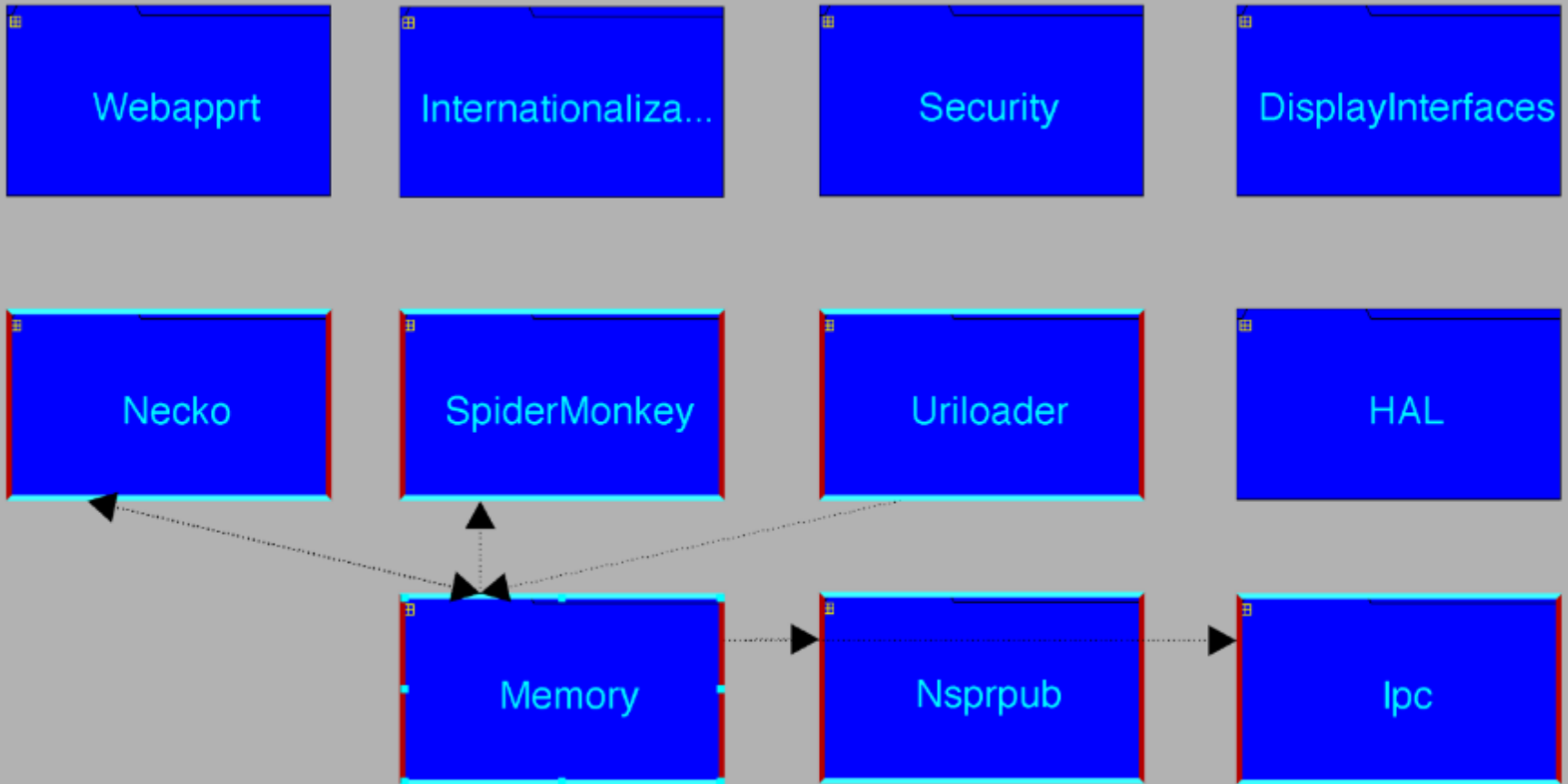
SpiderMonkey

CoreAPI/Services



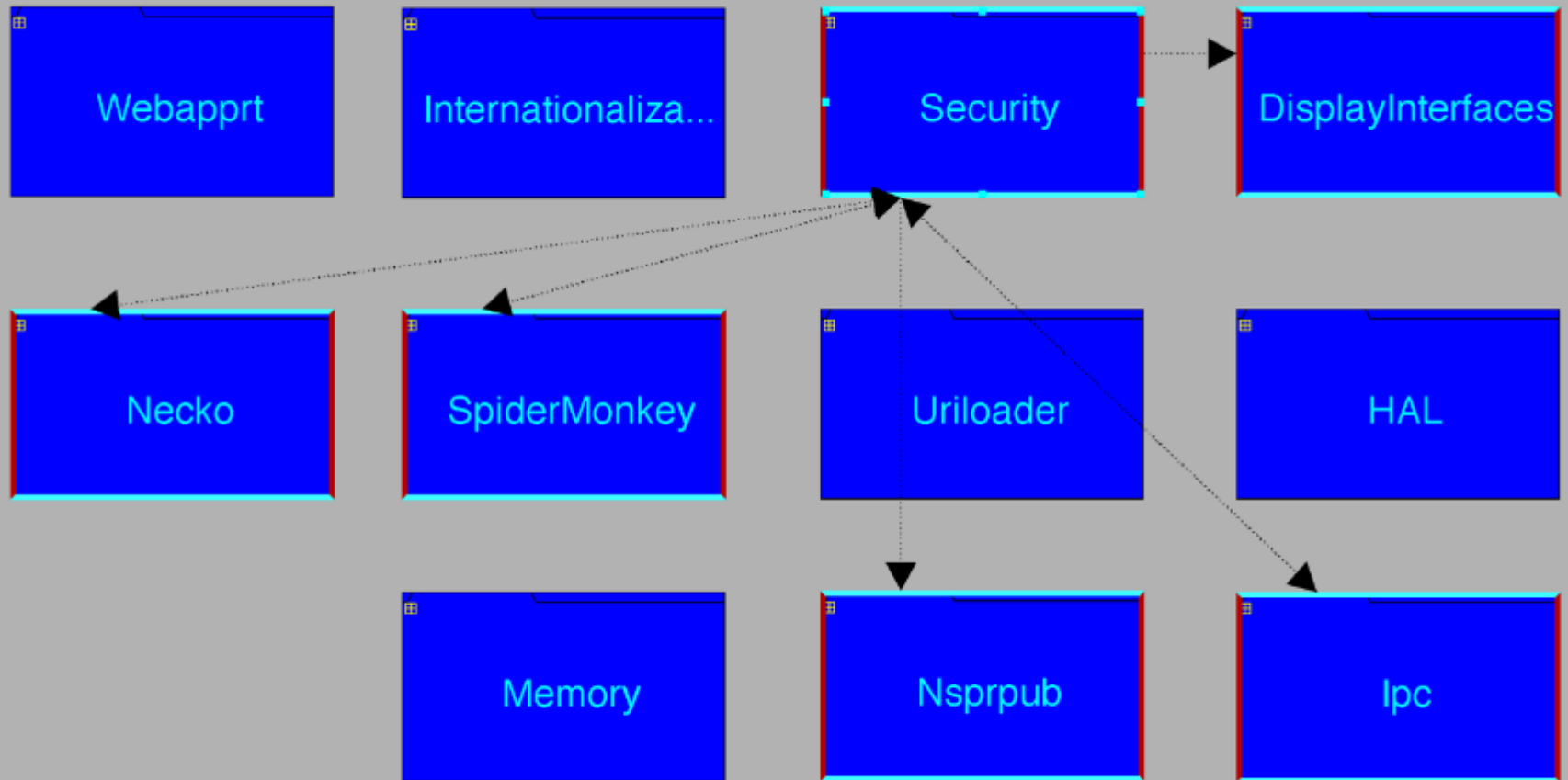
Memory

CoreAppServices



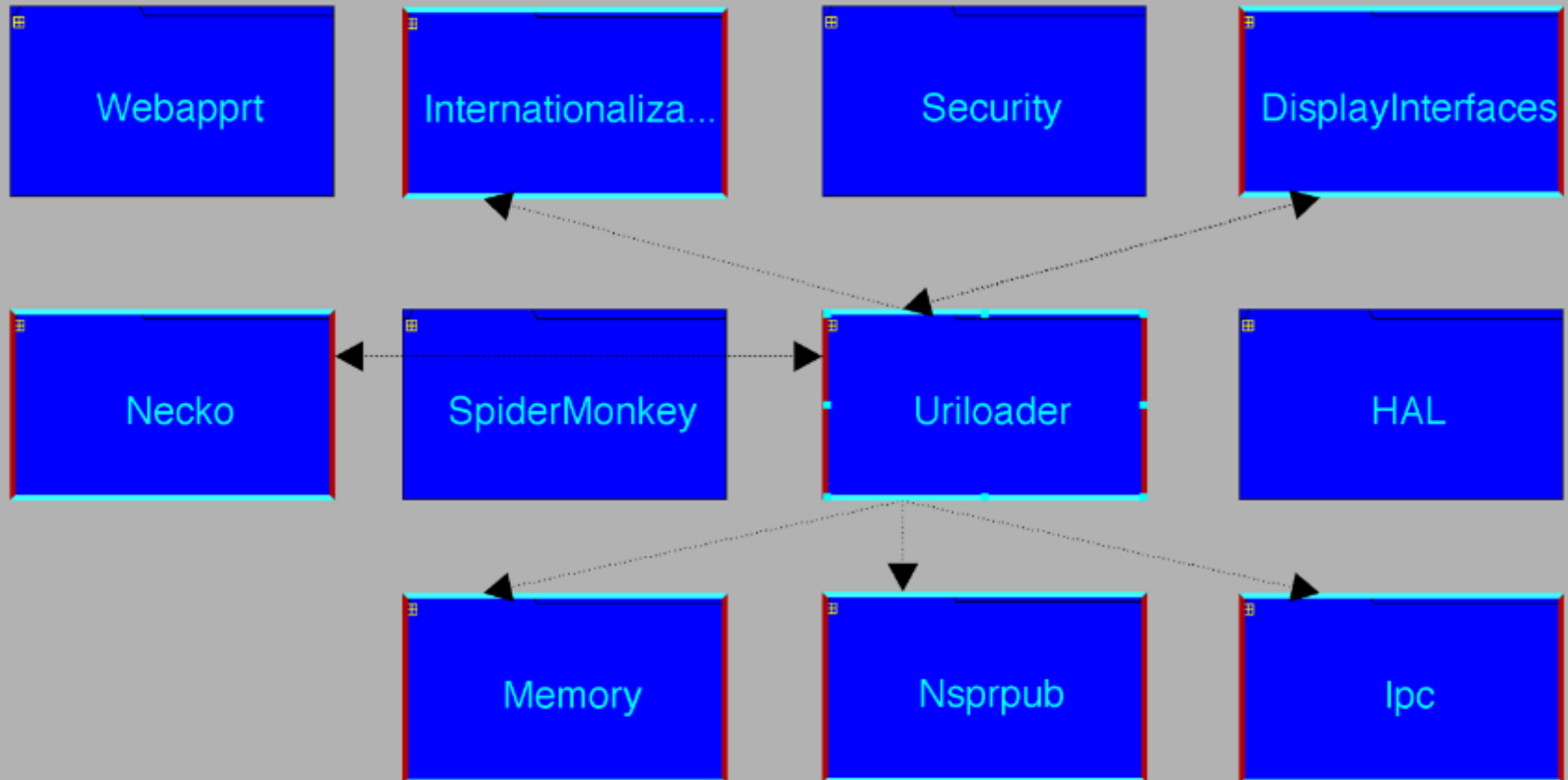
Security

Configuration



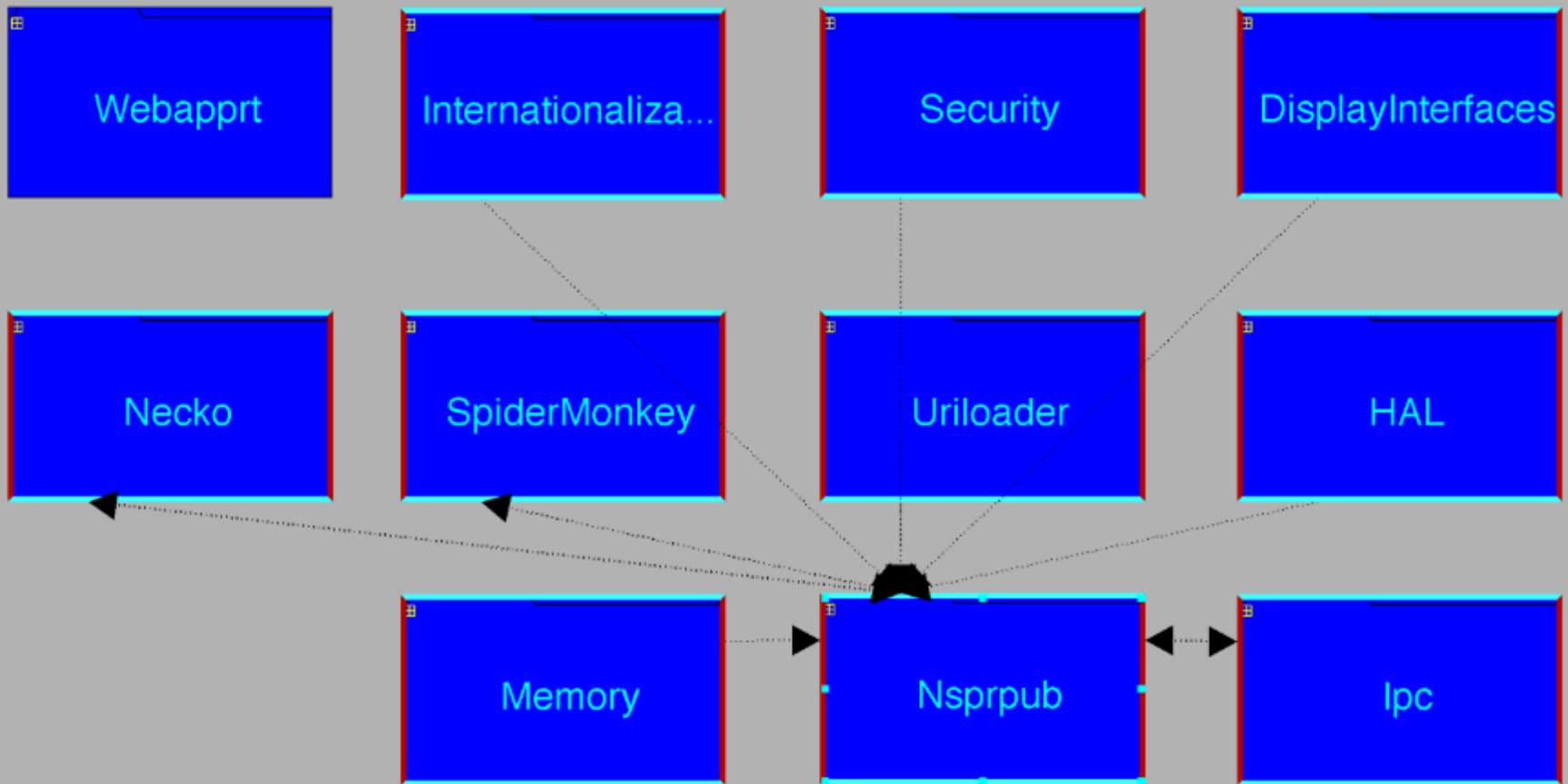
Urloader

CoreAppServices



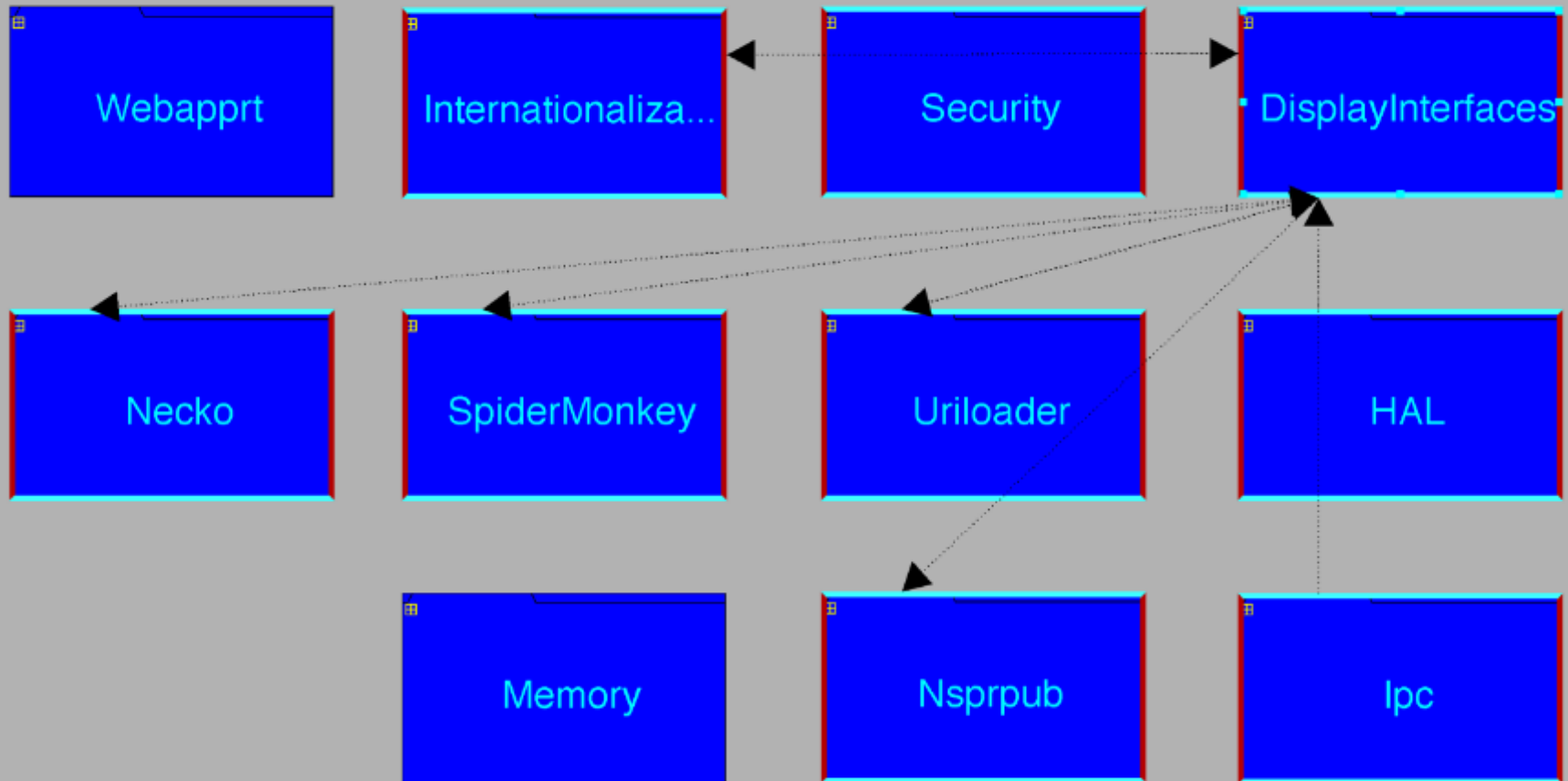
NSPRpub

Core Services



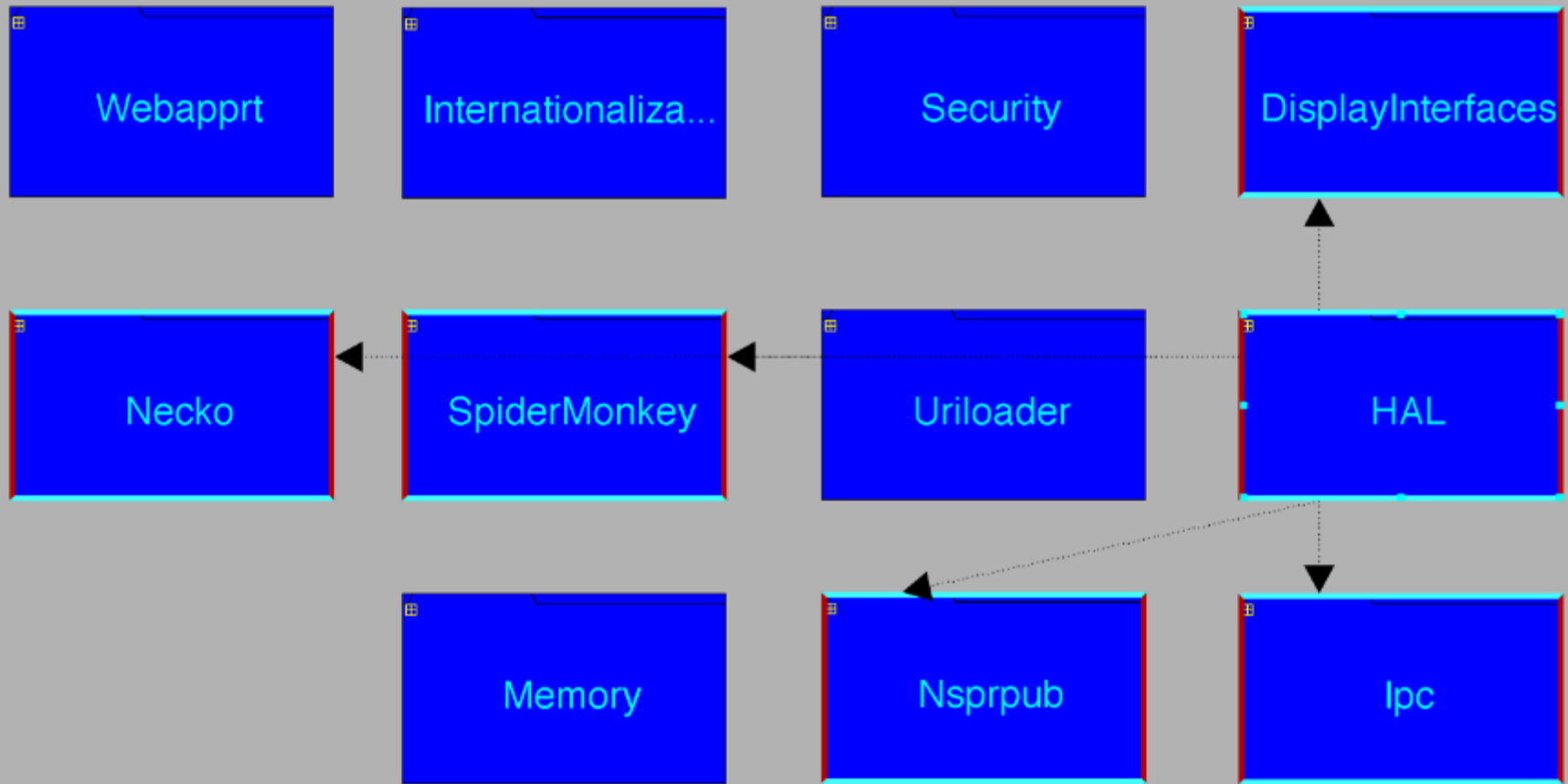
DisplayInterfaces

Overlaid on the



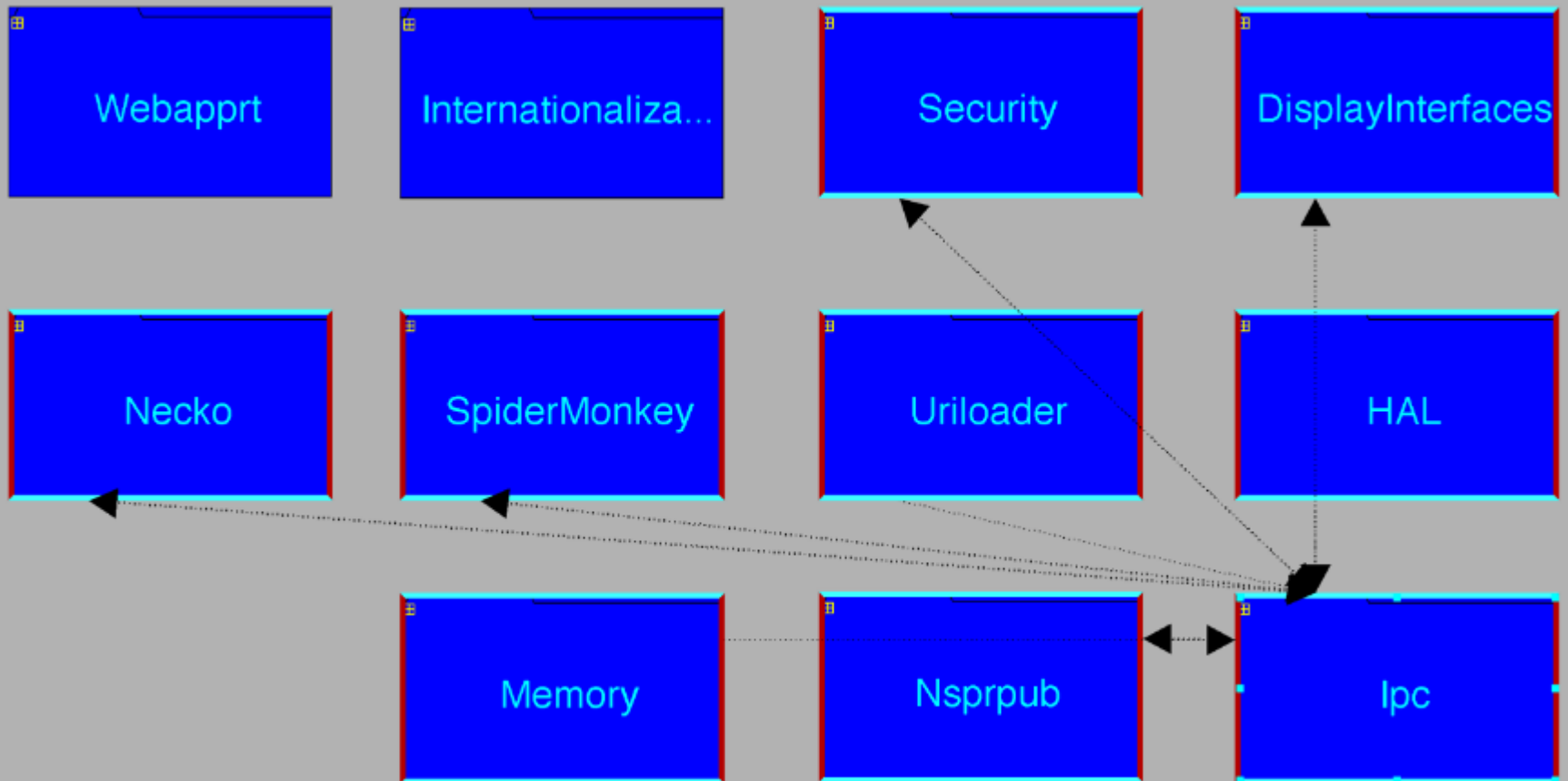
HAL

CoreTypeServices



IPC

OverAppCordova



References

- ⌘ 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>