Up and Running

Making a great impression with every launch

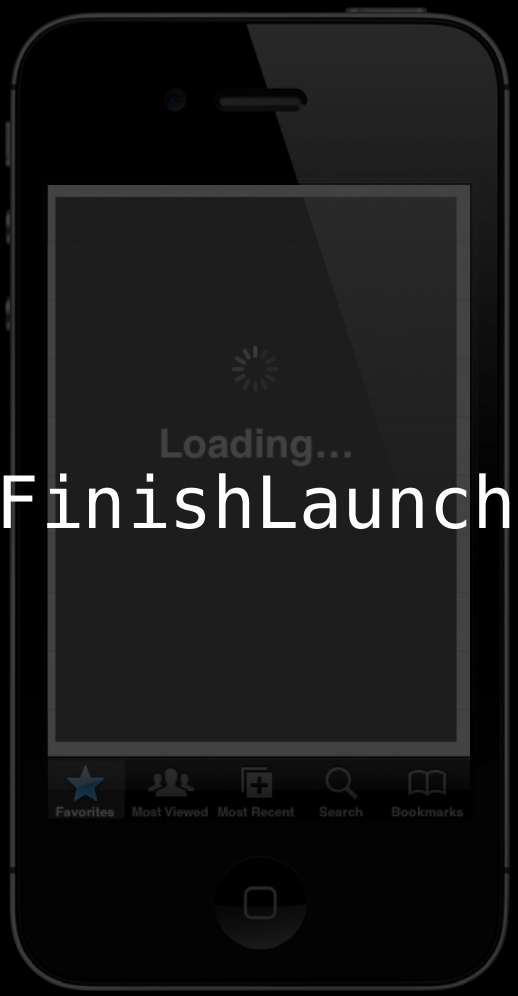
Session 225

Jim Turner
iOS Frameworks

These are confidential sessions—please refrain from streaming, blogging, or taking pictures

Loading…
Favorites
Most Viewed
Most Recent
Search
Bookmarks

application:didFinishLaunchingWithOptions:

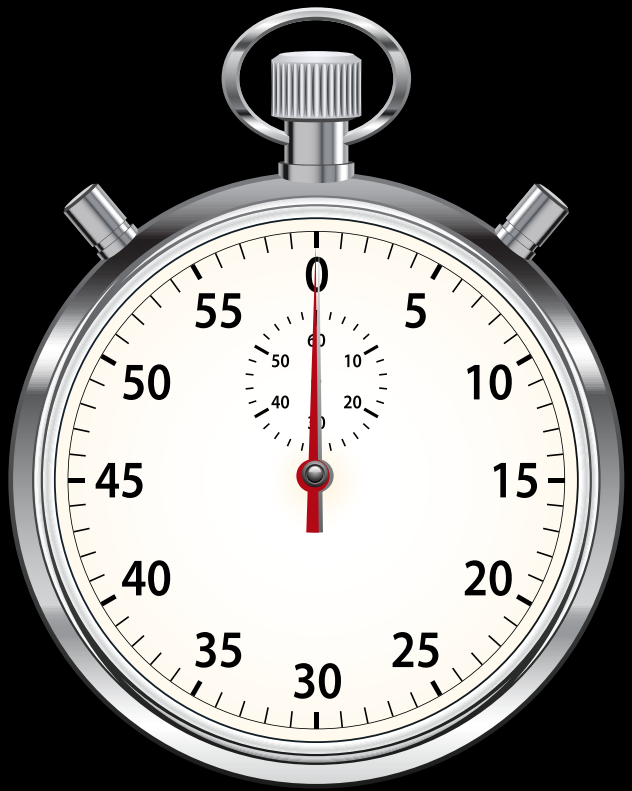


Demo

Brandon Newendorp
iOS Software Engineer

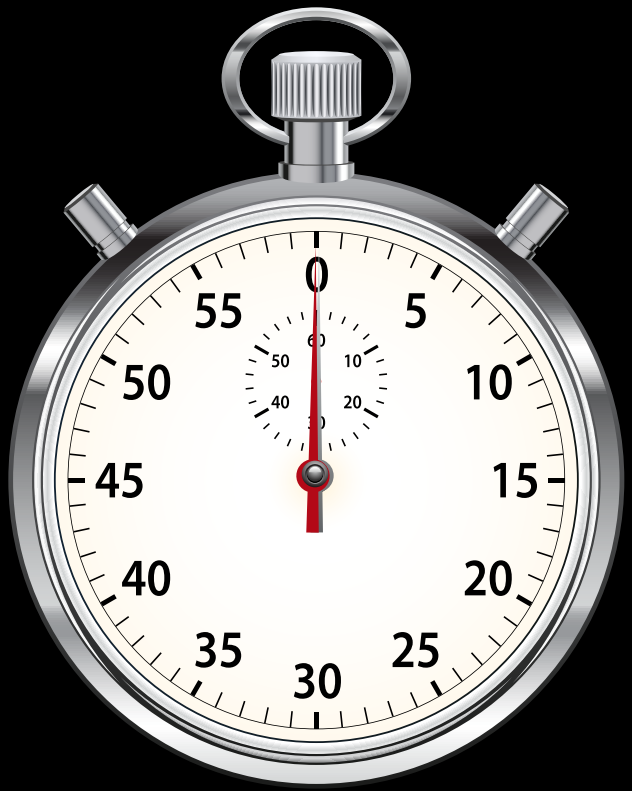
Watchdog

I see what you did there



Watchdog

I see what you did there



Watchdog

I see what you did there

Watchdog

I see what you did there

```
Ensures app launch time
Exception Type:  00000020
Exception Codes: 0x8badf00d

Highlighted Thread:  0
Application Specific Information:
com.your.app.id failed to launch in time
Elapsed total CPU time (seconds): 11.120 (user 1.840, system 9.280), 59% CPU
Elapsed application CPU time (seconds): 2.160, 12% CPU
```

Watchdog

I see what you did there

0x8badf00d

Watchdog

I see what you did there

Watchdog

I see what you did there

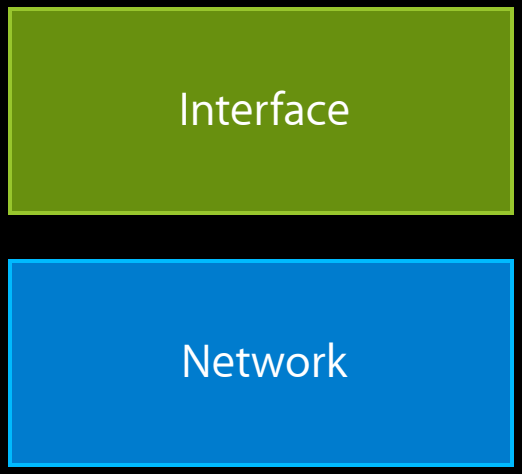
Watchdog

I see what you did there

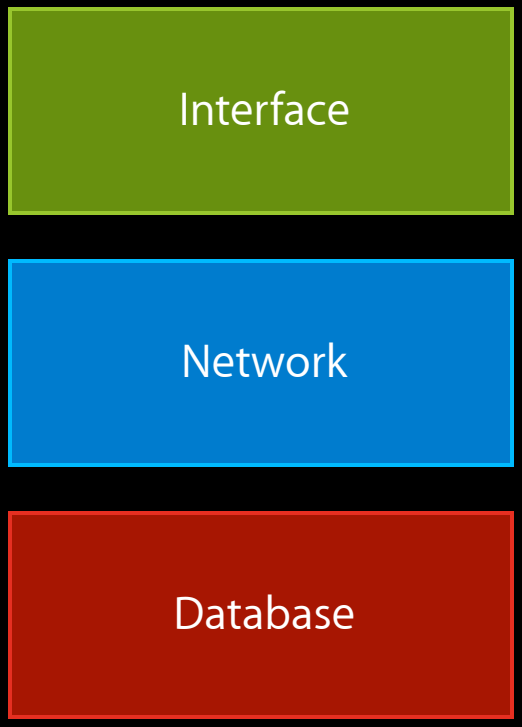
Demo App Startup

Demo App Startup

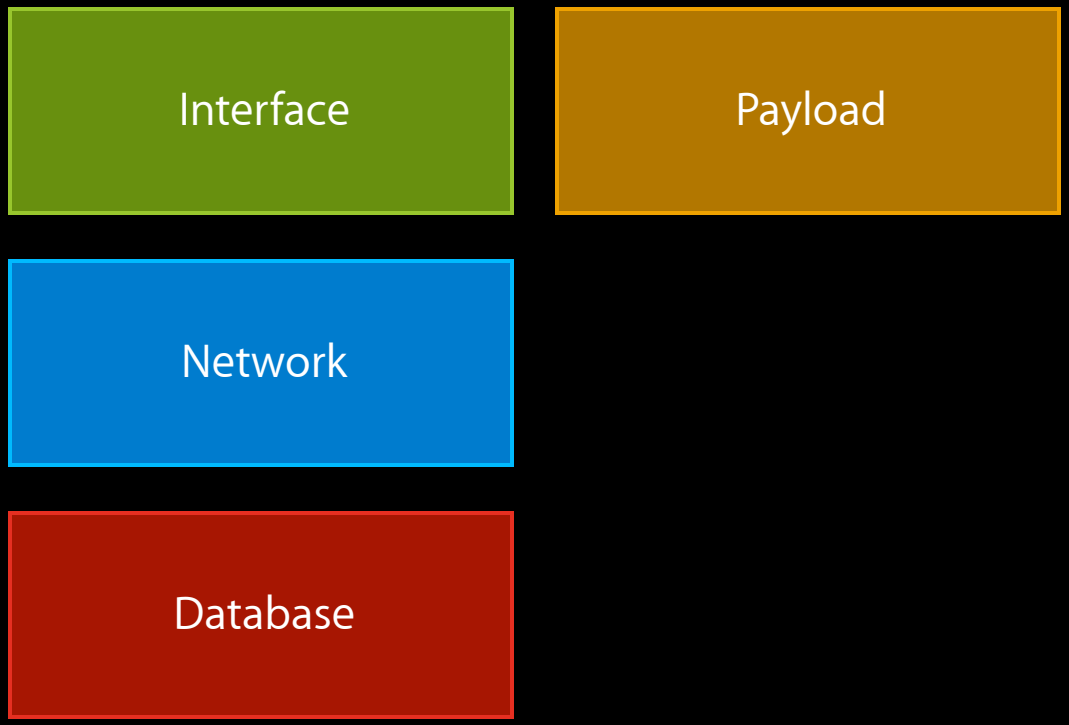
Demo App Startup



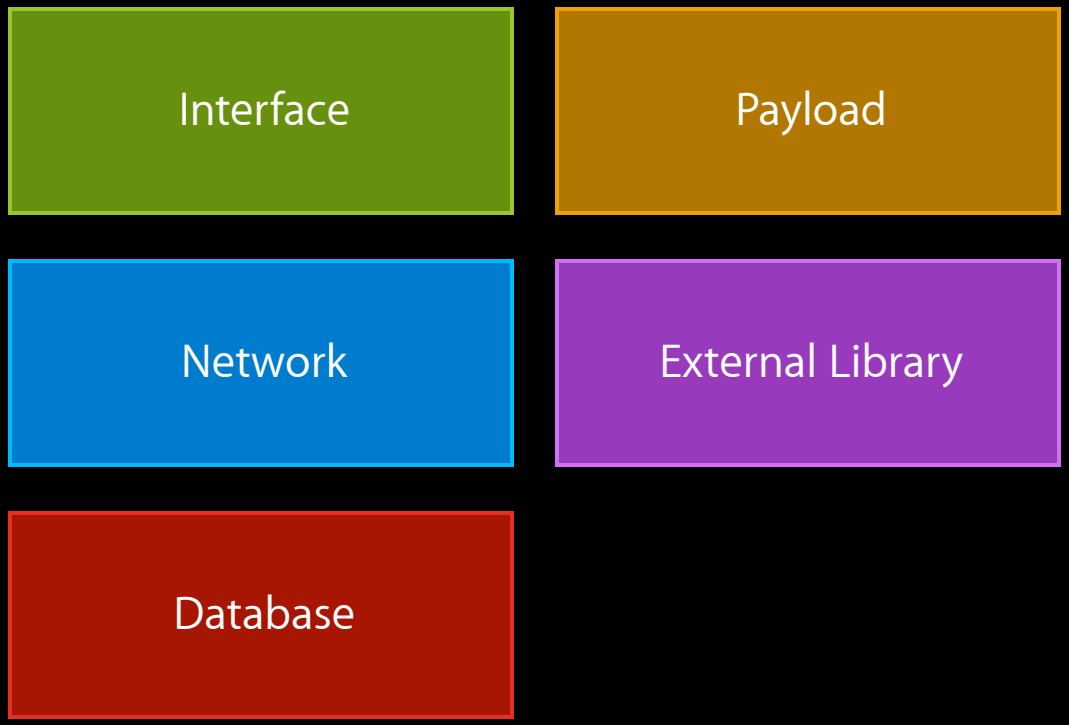
Demo App Startup



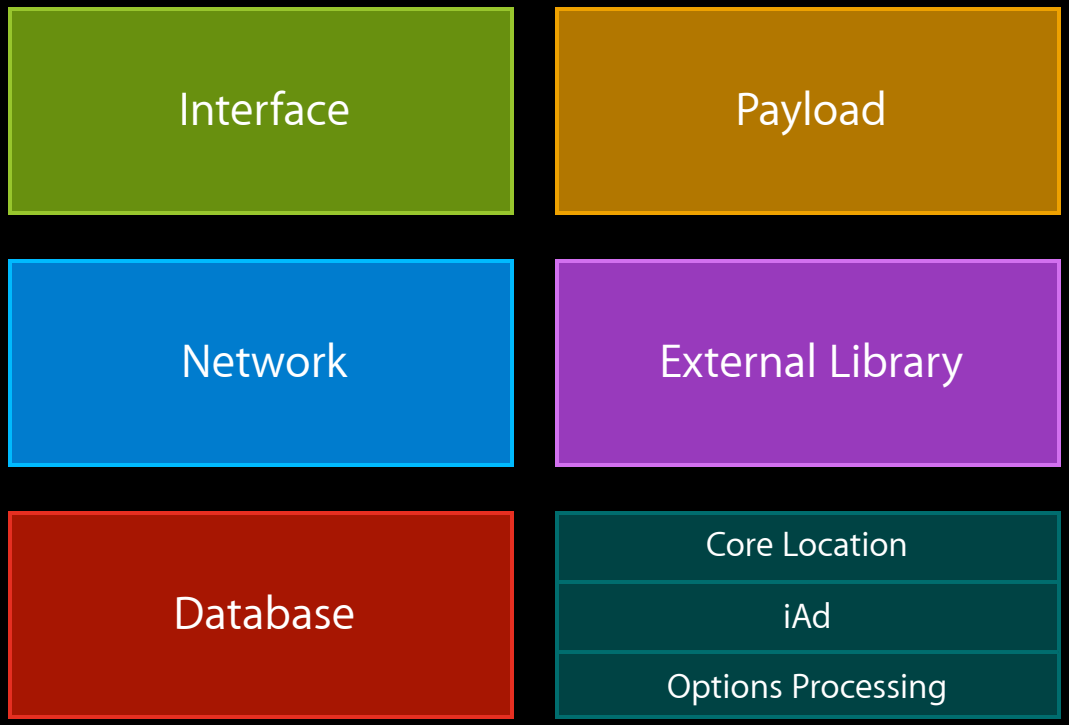
Demo App Startup



Demo App Startup



Demo App Startup



Demo App Startup

Main Queue

Demo App Startup

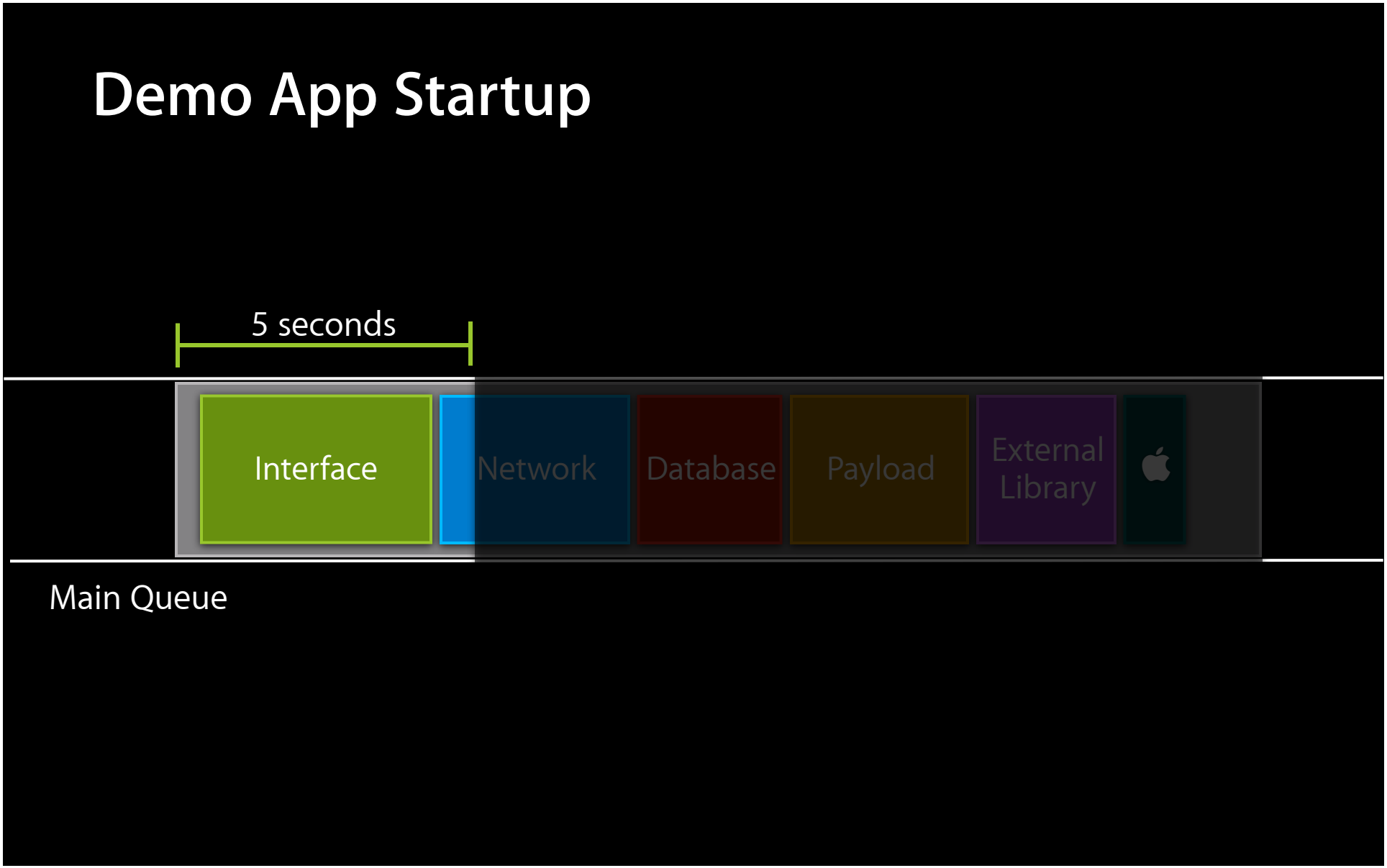
application:didFinishLaunchingWithOptions:

Main Queue

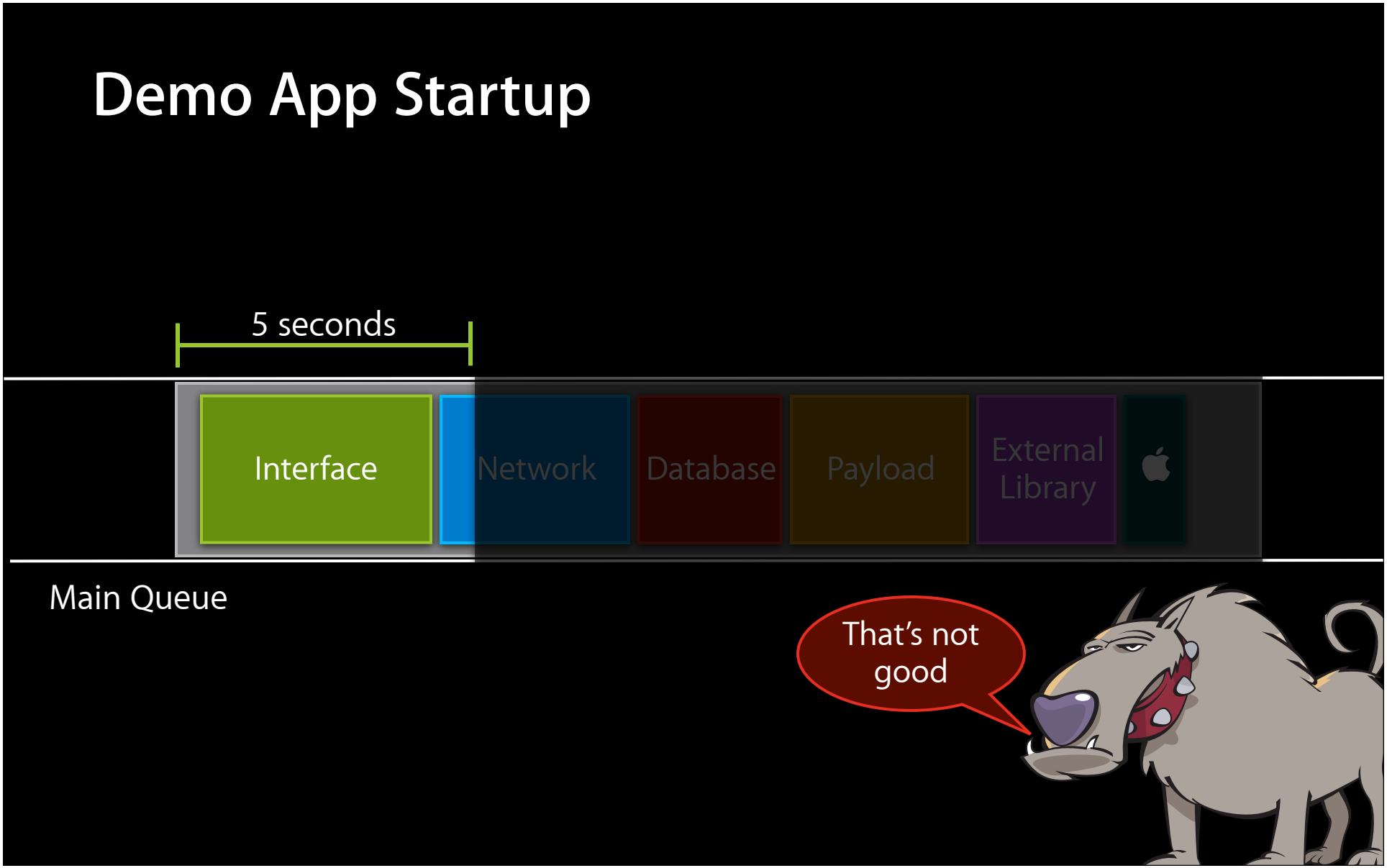
Demo App Startup

Main Queue

Demo App Startup

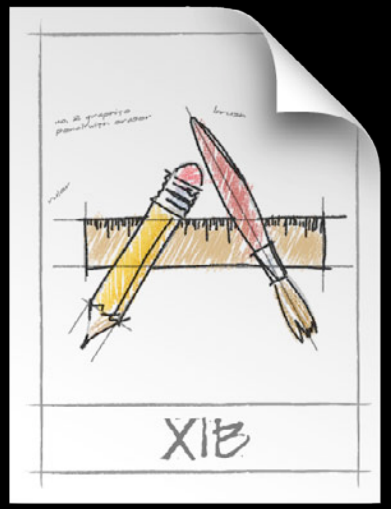


Demo App Startup



Interface Loading

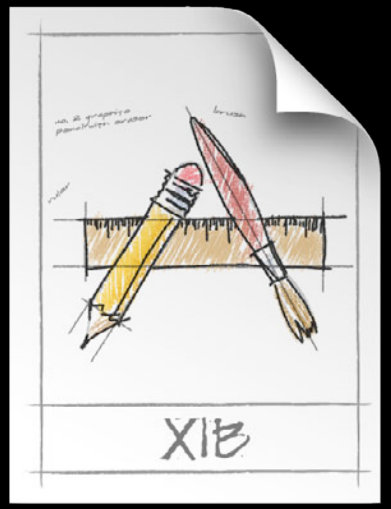
Put your UI on a diet



Interface Loading

Put your UI on a diet

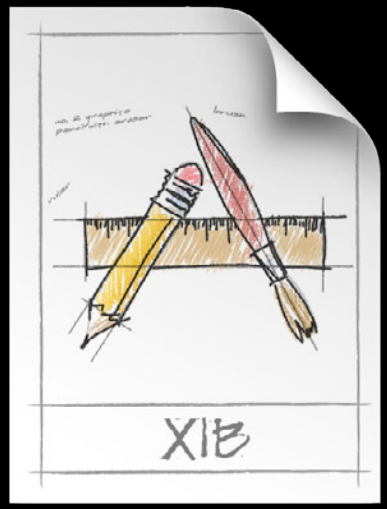
- Eases creation



Interface Loading

Put your UI on a diet

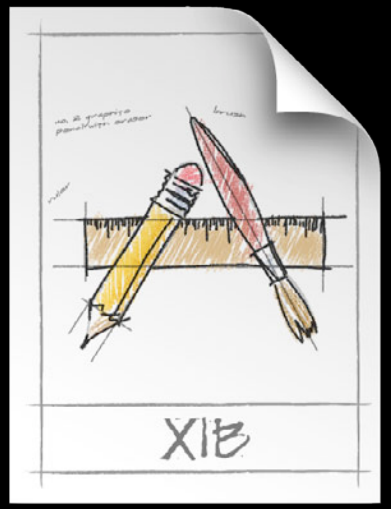
- Eases creation
- Allows experimentation



Interface Loading

Put your UI on a diet

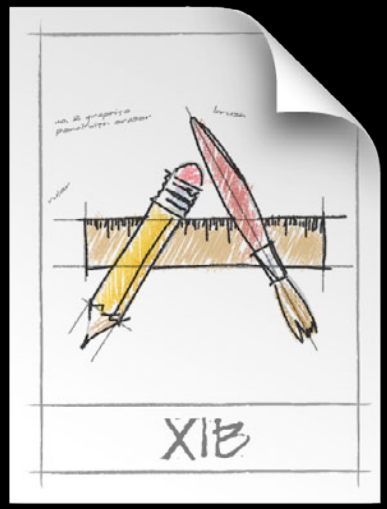
- Eases creation
- Allows experimentation
- Reduces code



Interface Loading

Put your UI on a diet

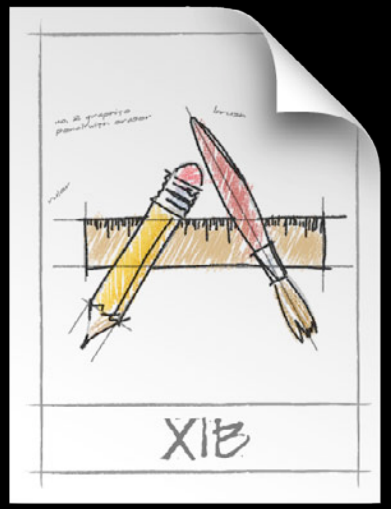
- Eases creation
- Allows experimentation
- Reduces code
- However…



Interface Loading

Put your UI on a diet

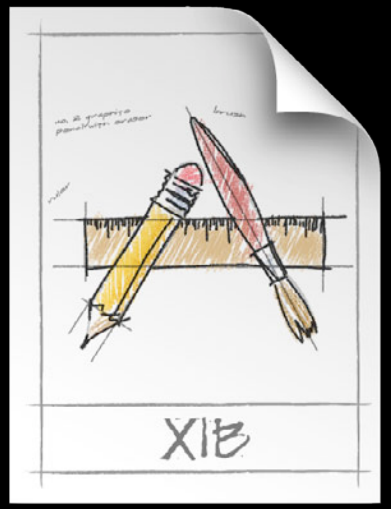
- Eases creation
- Allows experimentation
- Reduces code
- However…
  - Must instantiate entire object graph



Interface Loading

Put your UI on a diet

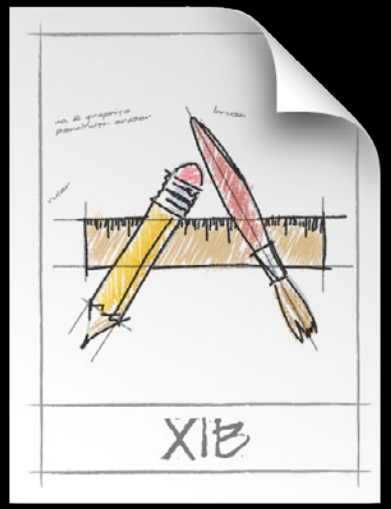
- Eases creation
- Allows experimentation
- Reduces code
- However…
  - Must instantiate entire object graph
  - Main queue

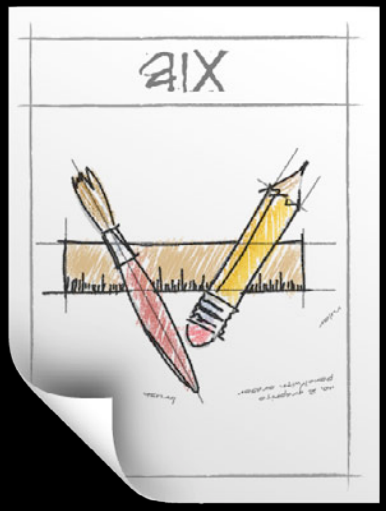


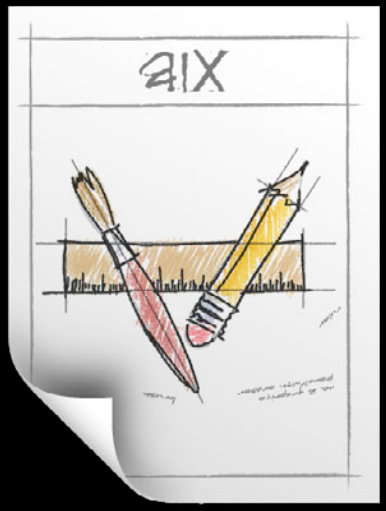
Interface Loading

Put your UI on a diet

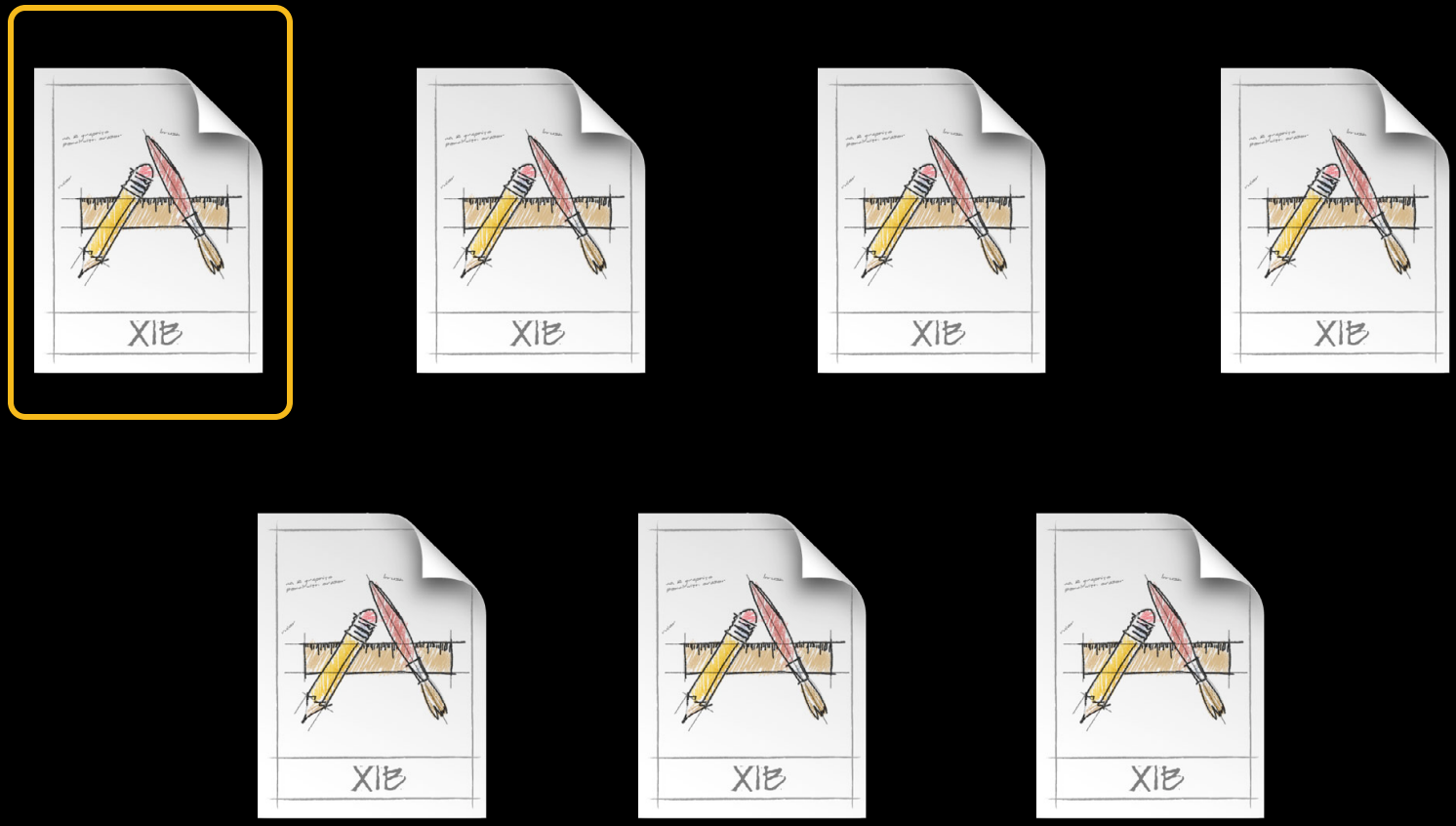
- Eases creation
- Allows experimentation
- Reduces code
- However…
  - Must instantiate entire object graph
  - Main queue
  - Side effects

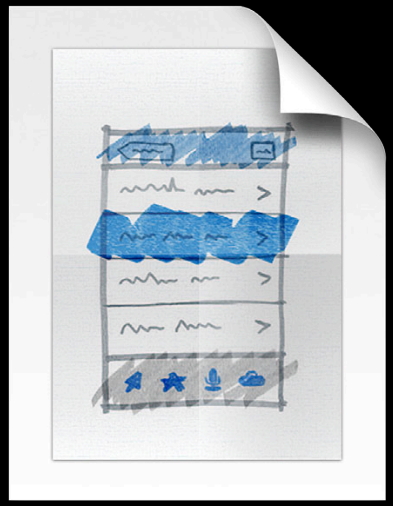


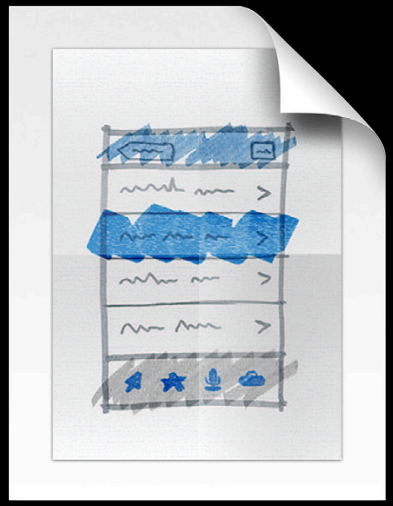

aIX


aIX

XIB
XIB
XIB
XIB
XIB
XIB
XIB

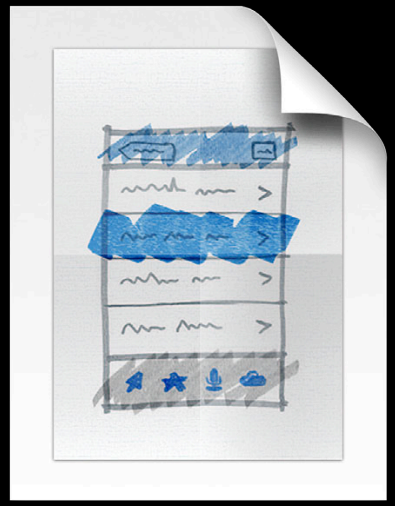

XIB
XIB
XIB
XIB
XIB
XIB
XIB





Interface Loading

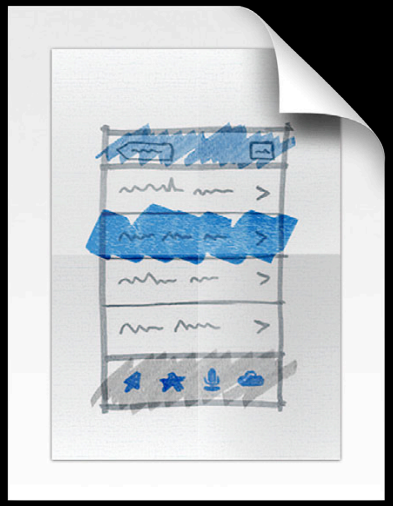
Storyboards



Interface Loading

Storyboards

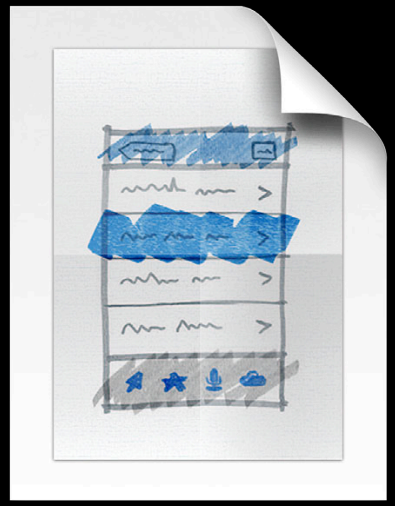
- Preferred to xib



Interface Loading

Storyboards

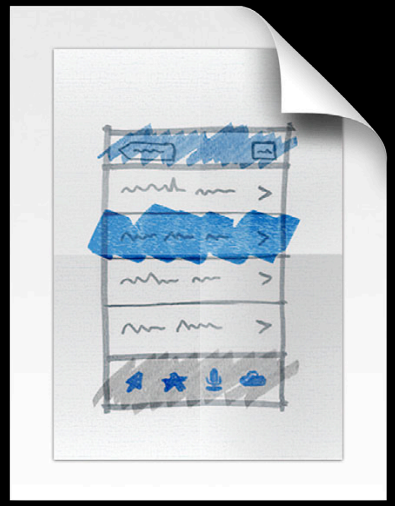
- Preferred to xib
- Single file



Interface Loading

Storyboards

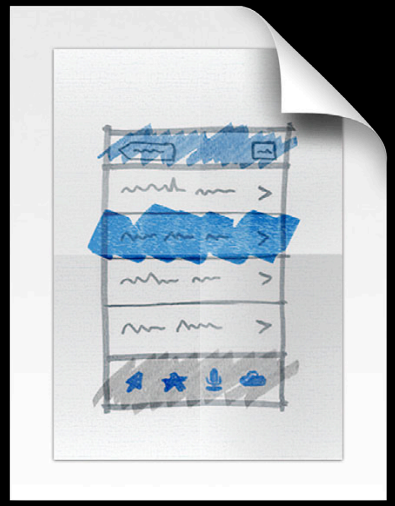
- Preferred to xib
- Single file
- Tool/Framework support



Interface Loading

Storyboards

- Preferred to xib
- Single file
- Tool/Framework support
- Simplify



Demo App Startup

Main Queue

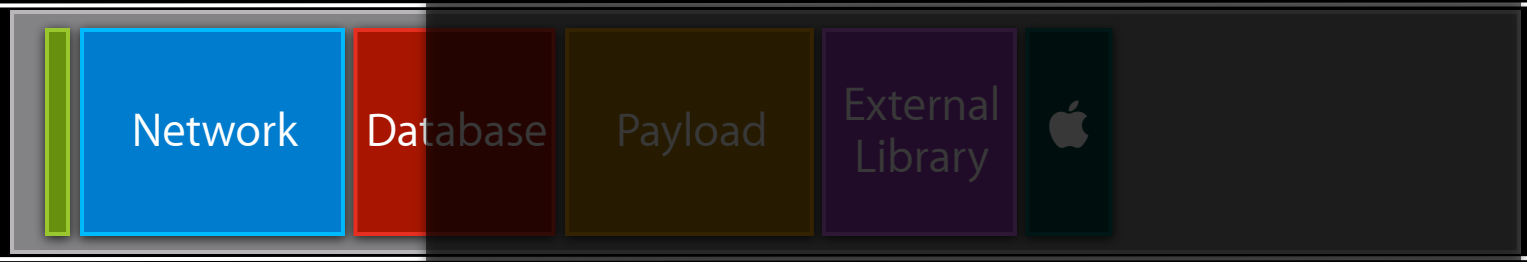
Demo App Startup

Main Queue

Demo App Startup

Main Queue

Demo App Startup



Main Queue

Network Communication

Time does not pass in The Waiting Place

Network Communication

Time does not pass in The Waiting Place

- Undefined behavior

Network Communication

Time does not pass in The Waiting Place

- Undefined behavior
- Blocking vs. non-blocking

Network Communication

Time does not pass in The Waiting Place

- Undefined behavior
- Blocking vs. non-blocking
- Applies to all synchronous methods/behaviors

Network Communication

```
_XMLparser = [[NSXMLParser alloc] initWithContentsOfURL:…];
NSData *imgData = [NSData dataWithContentsOfURL:…];
UIImage *img = [UIImage imageWithData:imgData];
NSData *formResults = [NSURLConnection sendSynchronousRequest:req
                          returningResponse:nil error:&error];
```

Network Communication

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_XMLparser = [[NSXMLParser alloc] initWithContentsOfURL:…];
NSData *imgData = [NSData dataWithContentsOfURL:…];
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Network Communication

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_XMLparser = [[NSXMLParser alloc] initWithContentsOfURL:…];
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UIImage *img = [UIImage imageWithData:imgData];
NSData *formResults = [NSURLConnection sendSynchronousRequest:req
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```

Network Communication

```
_XMLparser = [[NSXMLParser alloc] initWithContentsOfURL:…];
NSData *imgData = [NSData dataWithContentsOfURL:…];
UIImage *img = [UIImage imageWithData:imgData];
NSData *formResults = [NSURLConnection sendSynchronousRequest:req
                            returningResponse:nil error:&error];
```

Network Communication

Current Info [614 KB]

JSON [22 KB] waiting…

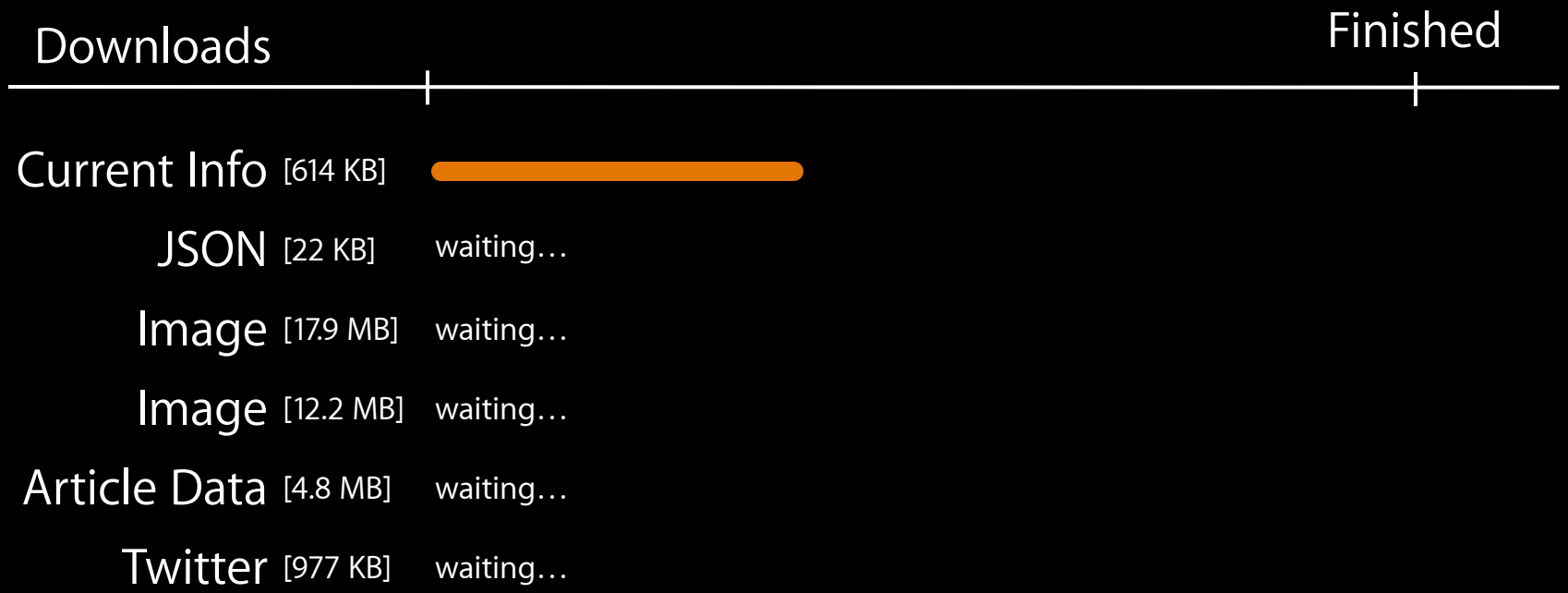
Image [17.9 MB] waiting…

Image [12.2 MB] waiting…

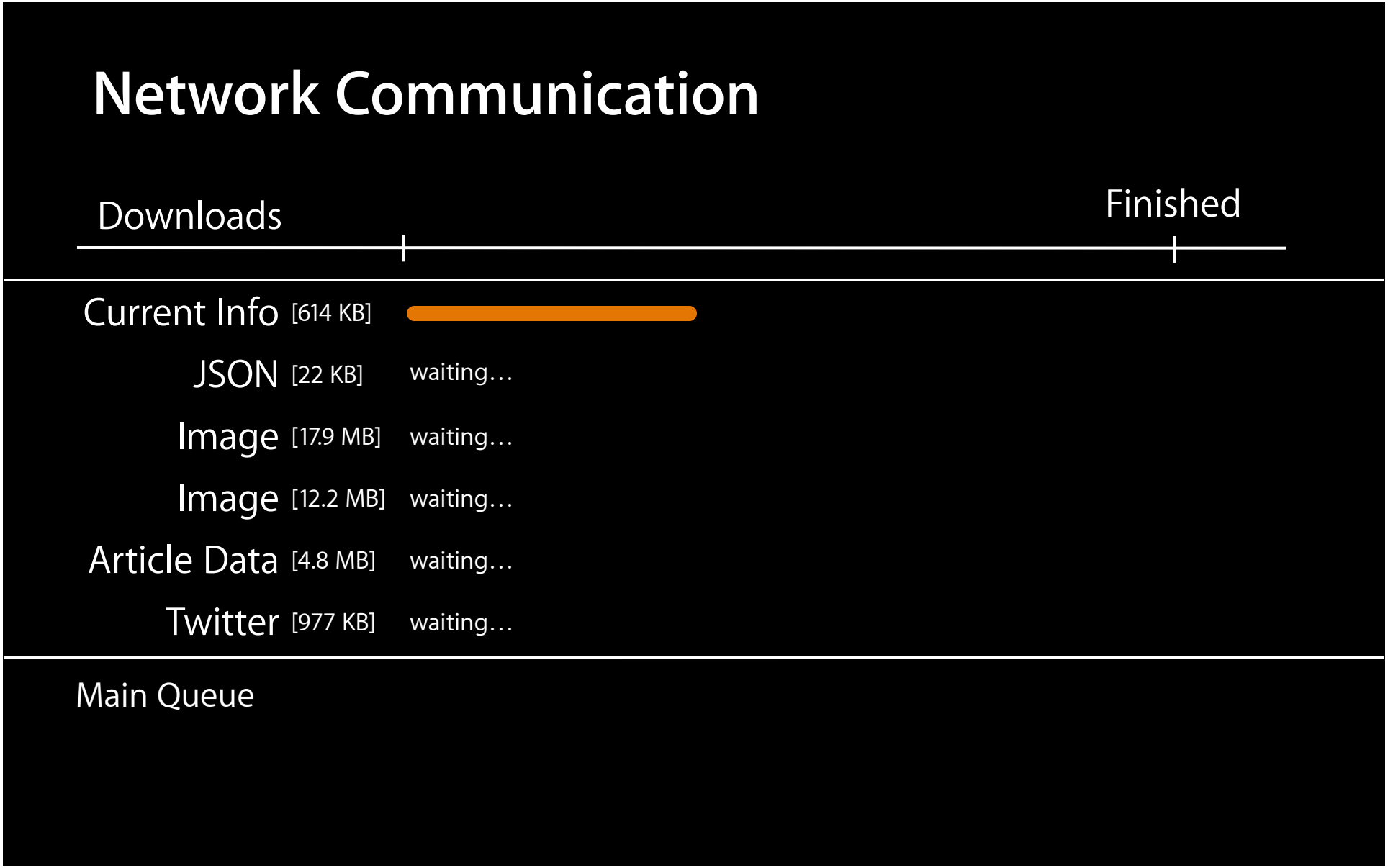
Article Data [4.8 MB] waiting…

Twitter [977 KB] waiting…

Network Communication



Network Communication



Network Communication

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_XMLparser = [[NSXMLParser alloc] initWithContentsOfURL:…];
NSData *imgData = [NSData dataWithContentsOfURL:…];
UIImage *img = [UIImage imageWithData:imgData];
NSData *formResults = [NSURLConnection sendSynchronousRequest:req
                          returningResponse:nil error:&error];
```

Network Communication

```
dispatch_async(serialQueue, ^{
     _XMLparser = [[NSXMLParser alloc] initWithContentsOfURL:…];
     NSData *imgData = [NSData dataWithContentsOfURL:…];
     UIImage *img = [UIImage imageWithData:imgData];
     NSData *formResults = [NSURLConnection sendSynchronousRequest:req
                                 returningResponse:nil error:&error];
});
```

Network Communication

```
dispatch_async(serialQueue,
     _XMLparser = [[NSXMLPars      oc] ini      ontentsOfURL:…];
     NSData *imgData = [NSData      ithCo      sOfURL:…];
     UIImage *img = [UIImage imag      D      gData];
     NSData *formResults = [NSURLC      sendSynchronousRequest:req
                                  return      ponse:nil error:&error];
});
```

Network Communication

Current Info [614 KB]

JSON [22 KB] waiting…

Image [17.9 MB] waiting…

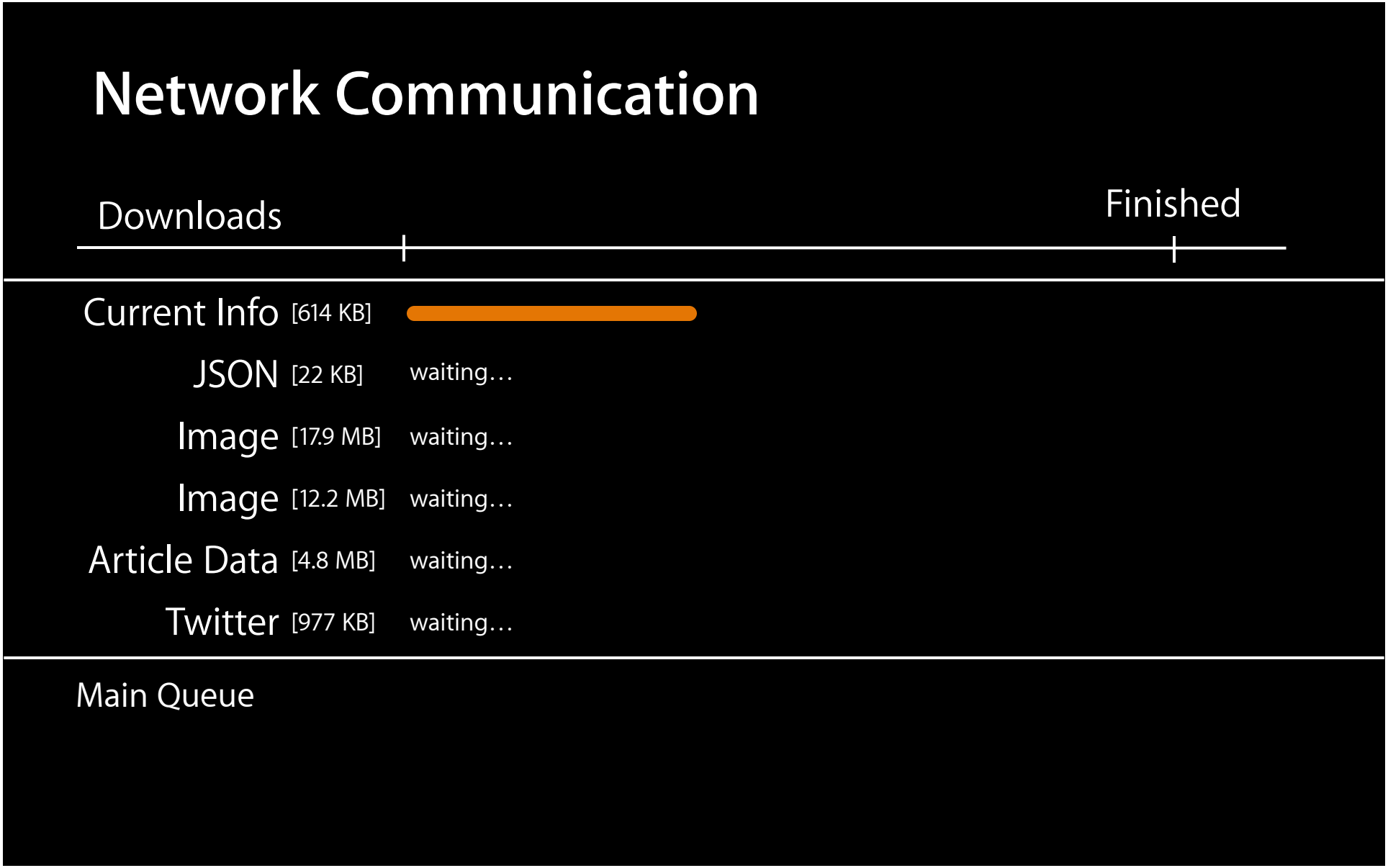
Image [12.2 MB] waiting…

Article Data [4.8 MB] waiting…

Twitter [977 KB] waiting…

Main Queue

Network Communication

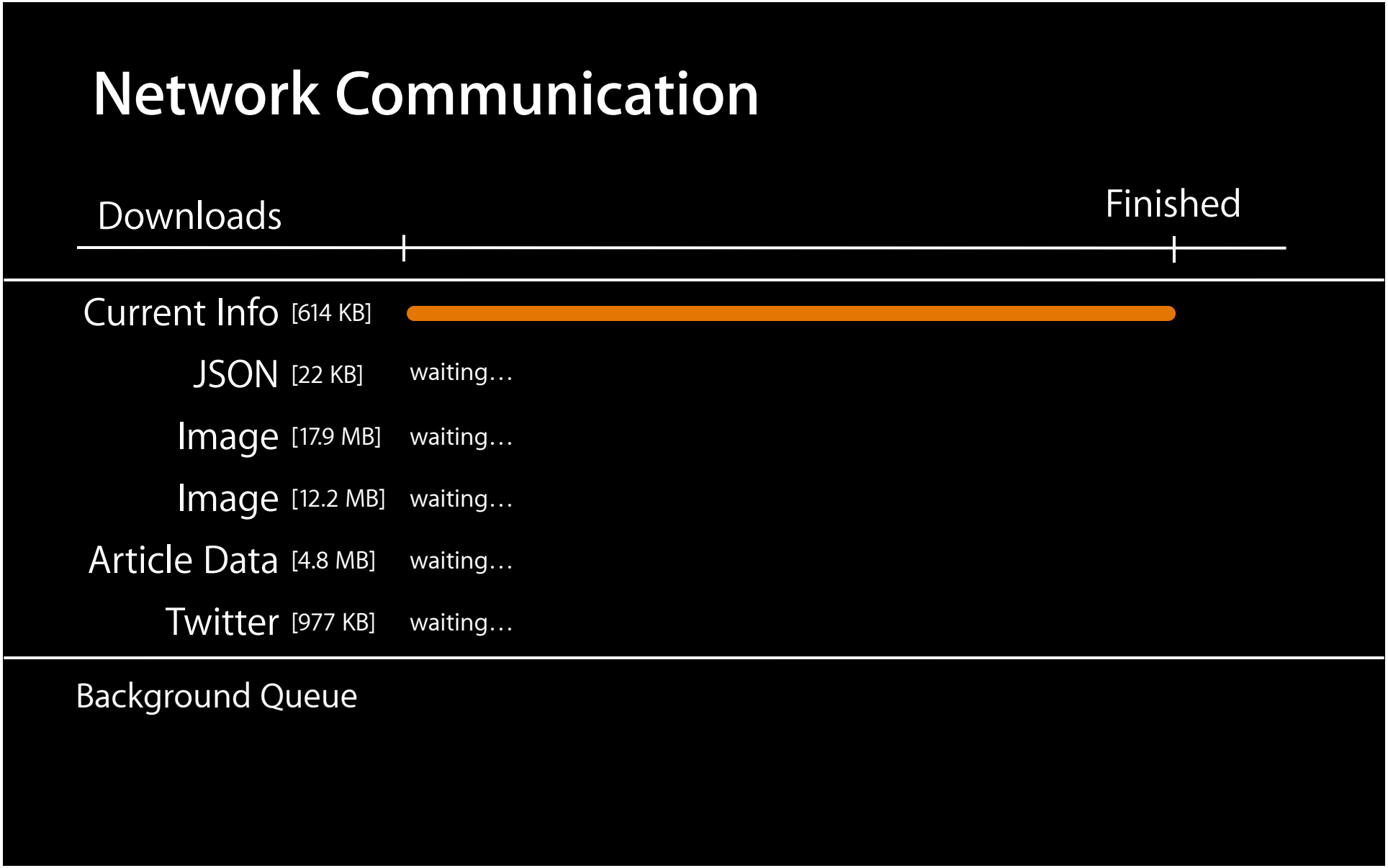


Network Communication

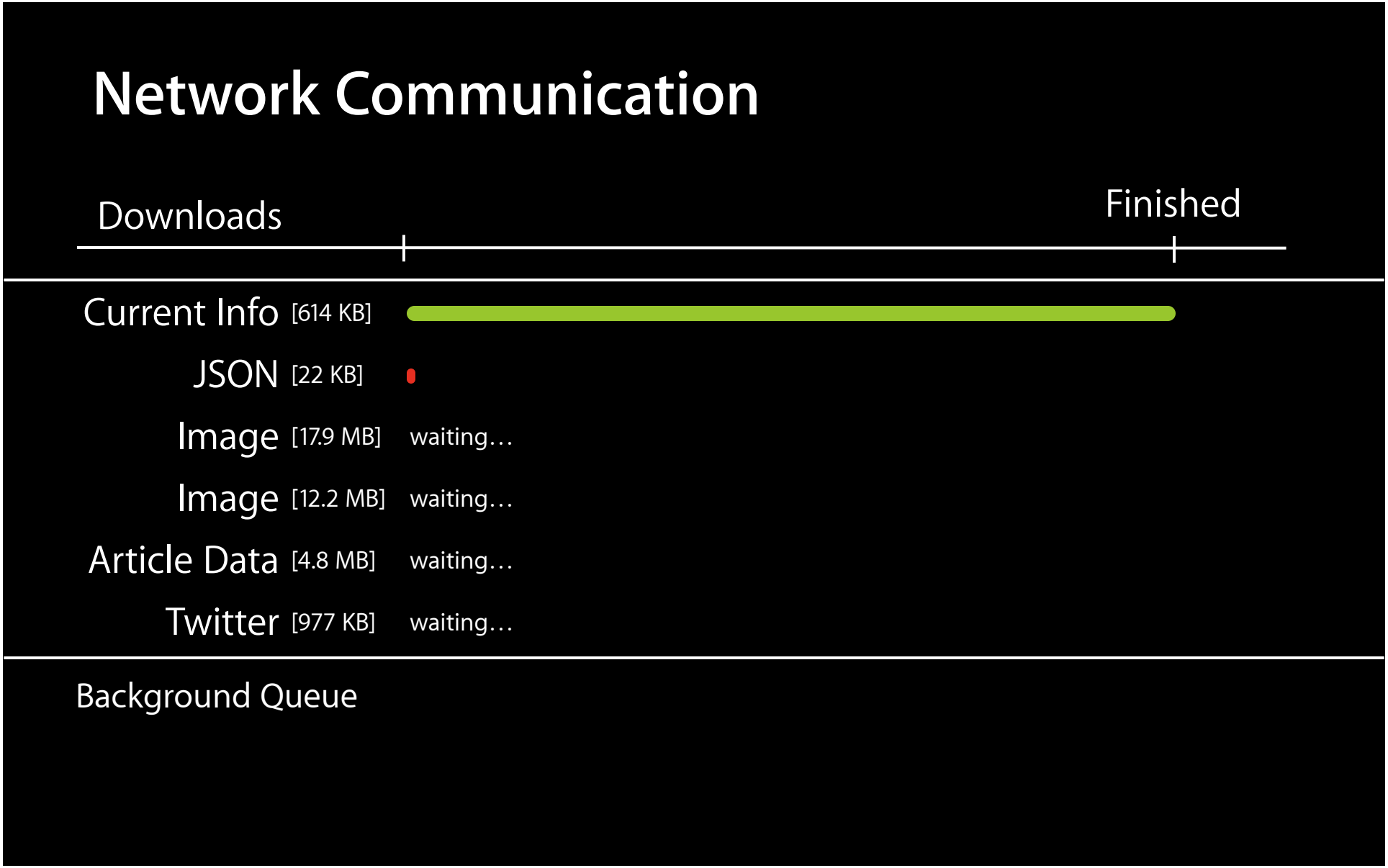
Current Info	[614 KB]	
JSON	[22 KB]	waiting…
Image	[17.9 MB]	waiting…
Image	[12.2 MB]	waiting…
Article Data	[4.8 MB]	waiting…
Twitter	[977 KB]	waiting…

Background Queue

Network Communication



Network Communication



Network Communication

```
_XMLparser = [[NSXMLParser alloc] initWithContentsOfURL:…];
NSData *imgData = [NSData dataWithContentsOfURL:…];
UIImage *img = [UIImage imageWithData:imgData];
NSData *formResults = [NSURLConnection sendSynchronousRequest:req
                          returningResponse:nil error:&error];
```

Network Communication

```
dispatch_async(concurrentQueue, ^{
    _XMLparser = [[NSXMLParser alloc] initWithContentsOfURL:…];
});
dispatch_async(concurrentQueue, ^{
    NSData *imgData = [NSData dataWithContentsOfURL:…];
    UIImage *img = [UIImage imageWithData:imgData];
});
dispatch_async(concurrentQueue, ^{
    NSData *formResults = [NSURLConnection sendSynchronousRequest:req
                                returningResponse:nil error:&error];
});
```

Network Communication

```
dispatch_async(concurrentQue
     _XMLparser = [[NSXMLPars      oc] ini      ontentsOfURL:…];
});
dispatch_async(concurrentQueue,
     NSData *imgData = [NSData dat          entsOfURL:…];
     UIImage *img = [UIImage imageW          :imgData];
});
dispatch_async(concurrentQueue, ^
     NSData *formResults = [NSU          ect          ndSynchronousRequest:req
                                          ningRes          nil error:&error];
});
```

Network Communication

NSOperation

Network Communication

NSOperation

- Asynchronous

Network Communication

NSOperation

- Asynchronous
- Concurrent

Network Communication

NSOperation

- Asynchronous
- Concurrent
- Tune resource usage

Network Communication

NSOperation

- Asynchronous
- Concurrent
- Tune resource usage
- Dependencies

Network Communication

NSOperation

- Asynchronous
- Concurrent
- Tune resource usage
- Dependencies
- Cancellation

Network Communication

Current Info [614 KB]

JSON [22 KB] waiting…

Image [17.9 MB] waiting…

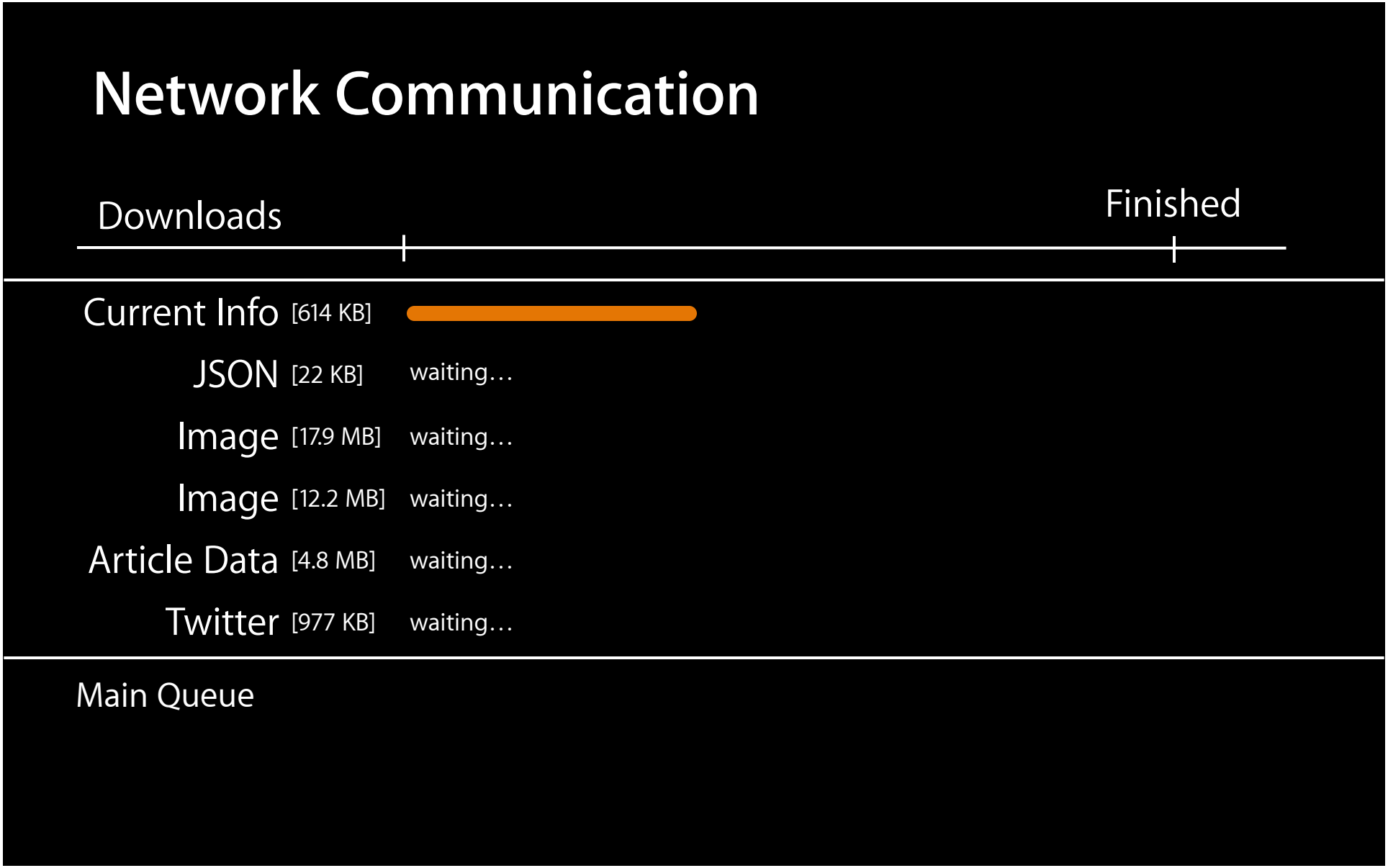
Image [12.2 MB] waiting…

Article Data [4.8 MB] waiting…

Twitter [977 KB] waiting…

Main Queue

Network Communication



Network Communication

Downloads — Finished

Current Info [614 KB]

JSON [22 KB]

Image [17.9 MB]

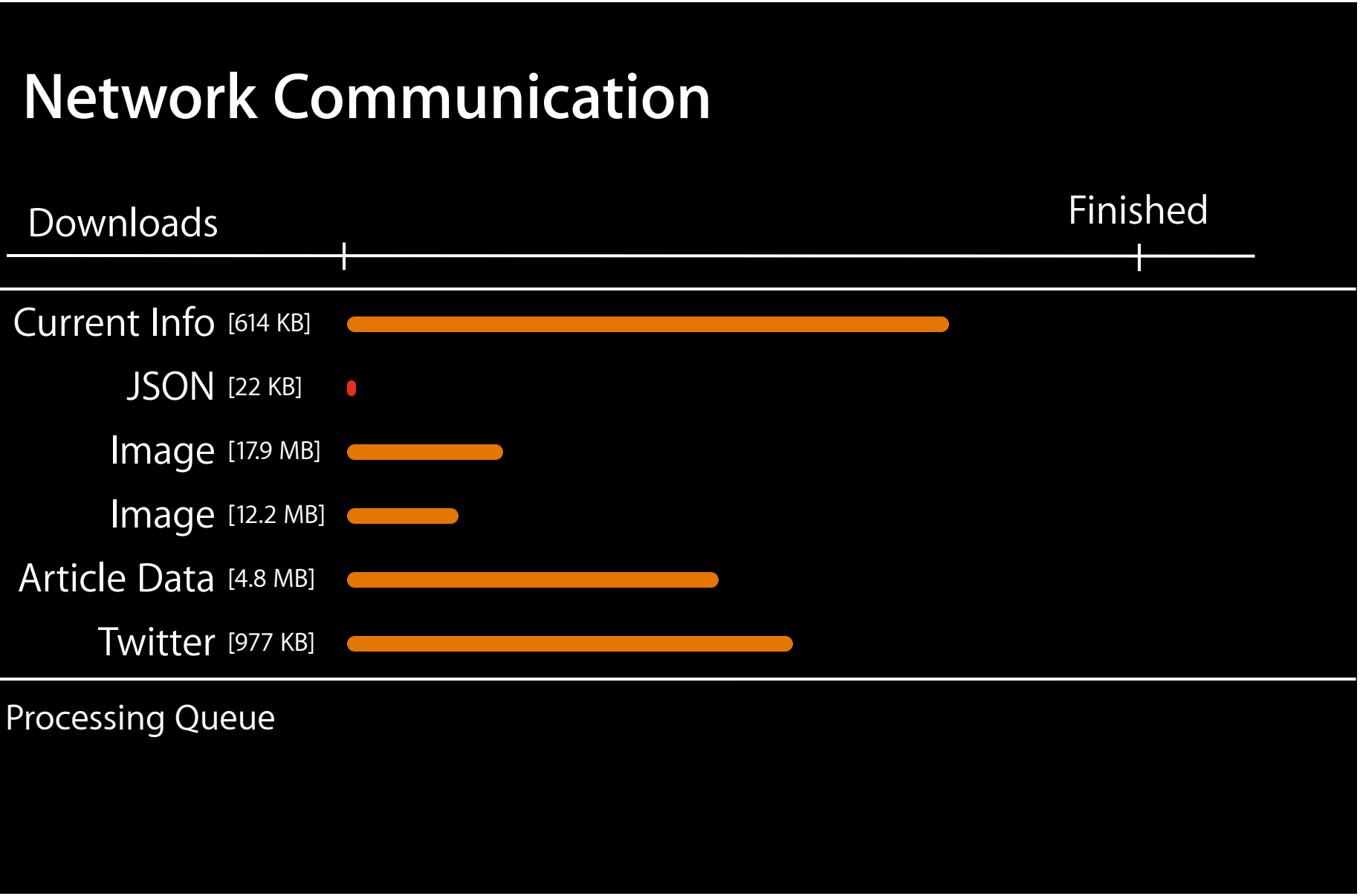
Image [12.2 MB]

Article Data [4.8 MB]

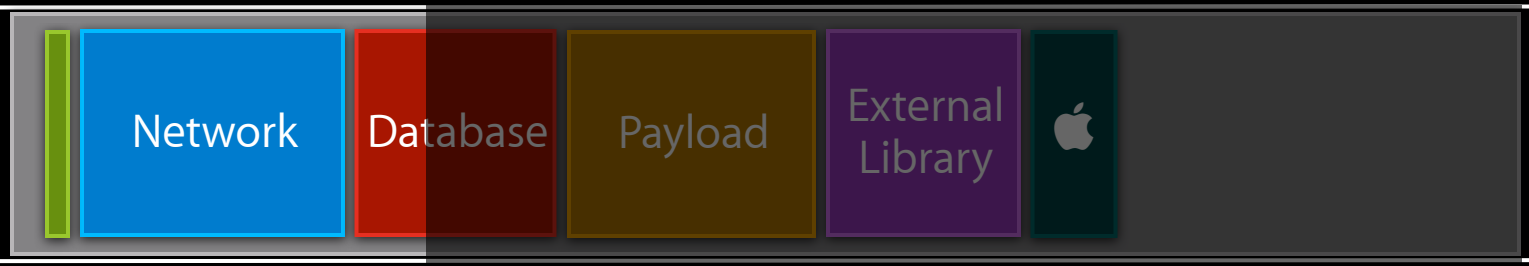
Twitter [977 KB]

Processing Queue

Network Communication

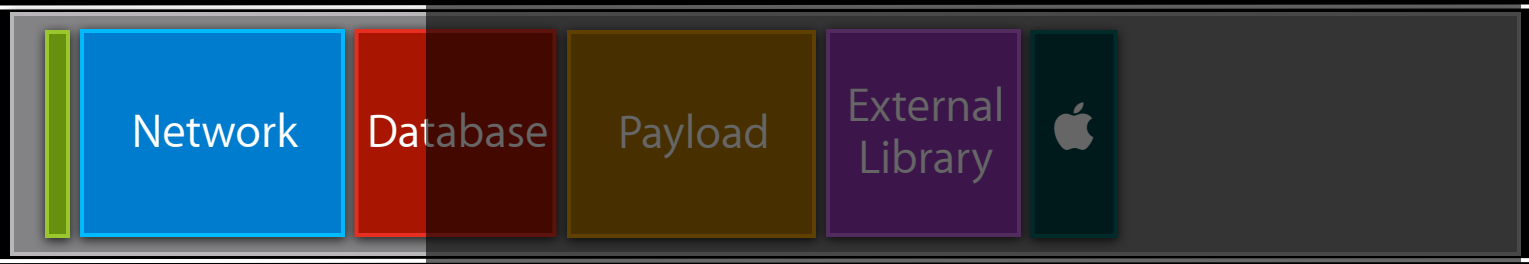


Demo App Startup



Main Queue

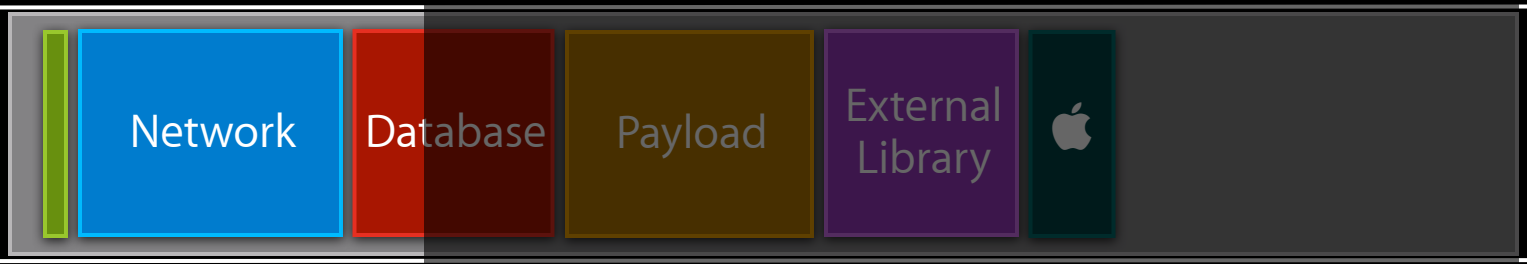
Demo App Startup



Main Queue

Processing Queue

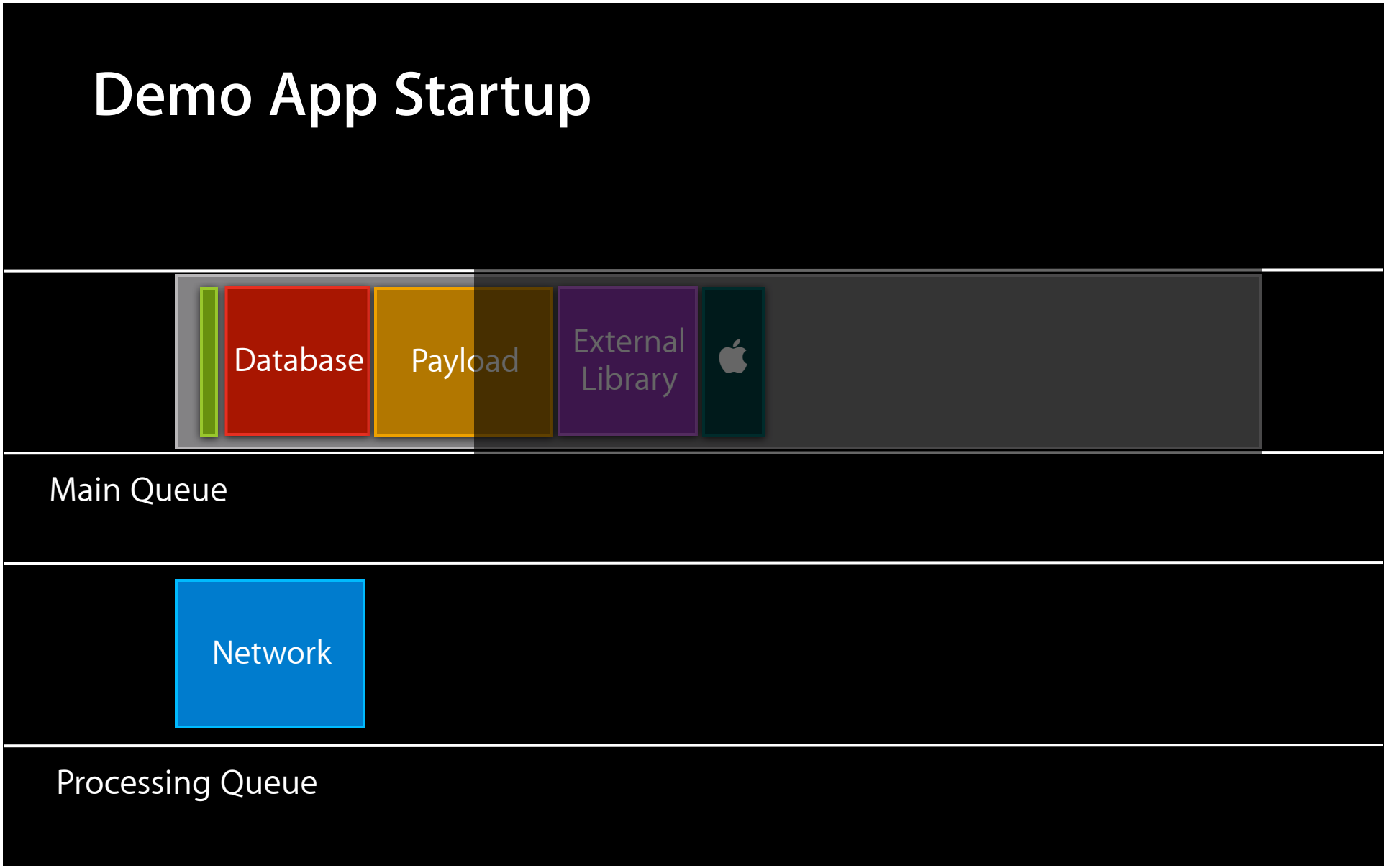
Demo App Startup

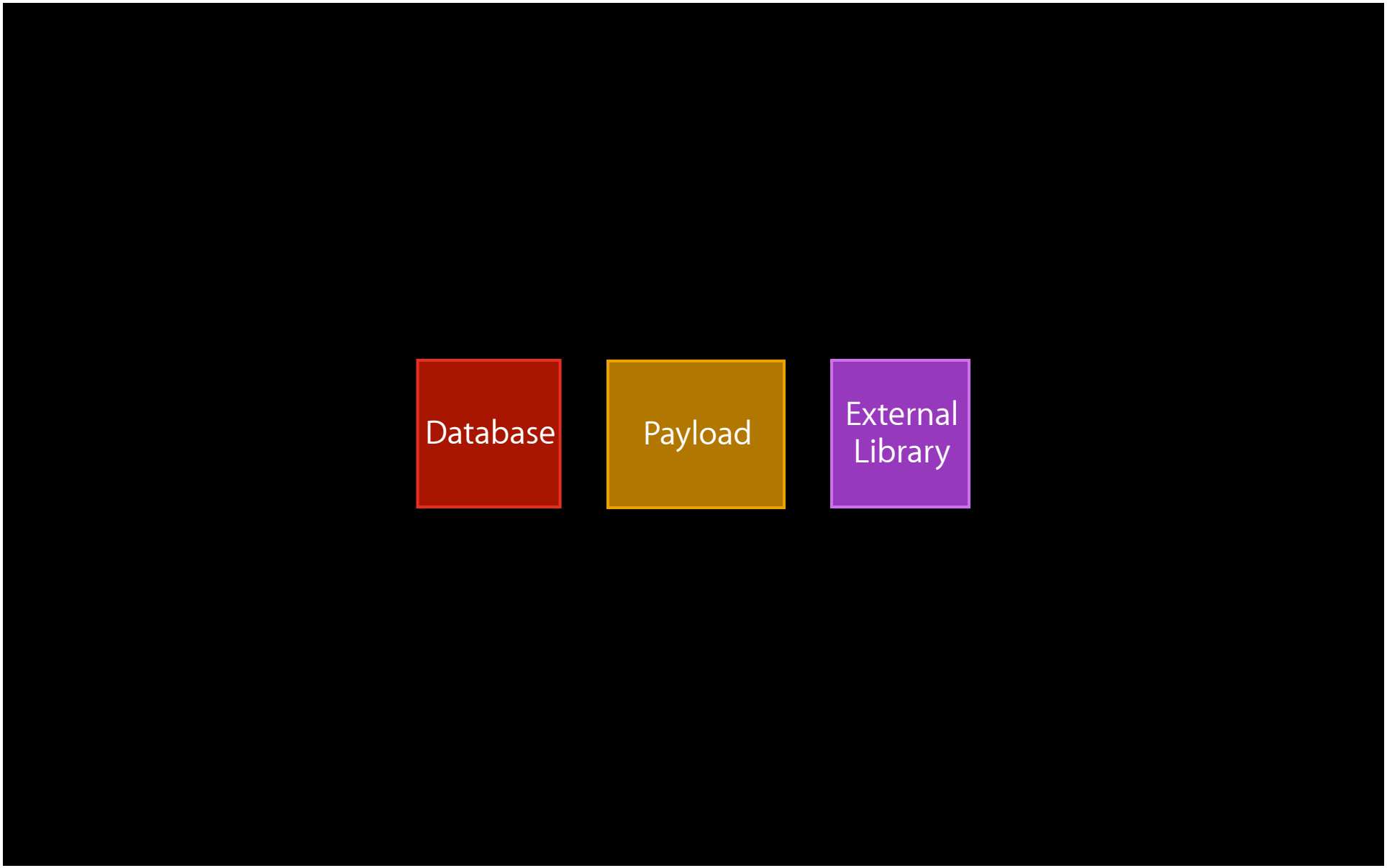


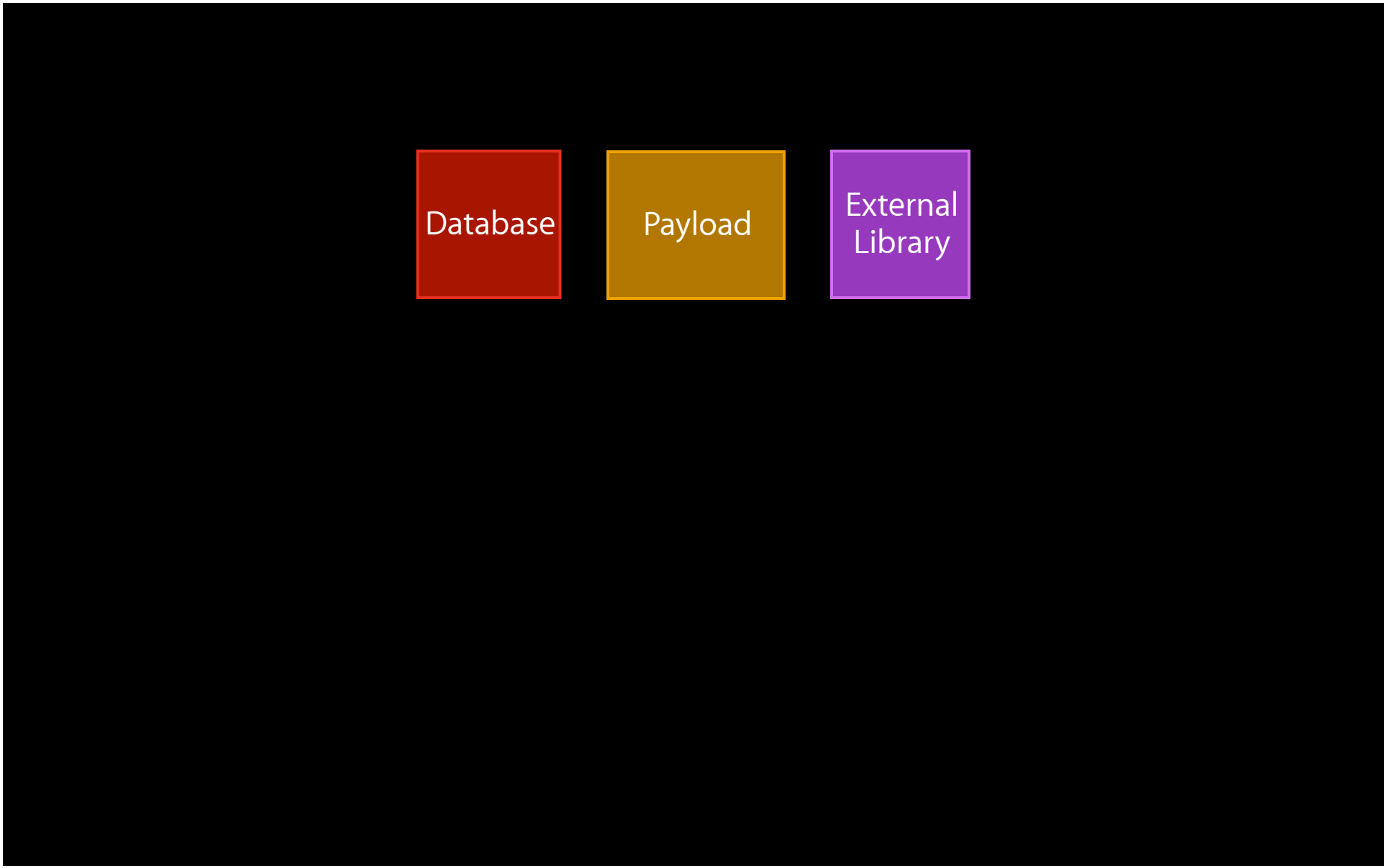
Main Queue

Processing Queue

Demo App Startup




Database
Payload
External Library


Database
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External Library

- General processing

- General processing
- Need not block the app from launching

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- Parallelizable

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- Need not block the app from launching
- Parallelizable
- Dependent on the network

General Processing

```
stockDatabase = [[DBManager alloc] initWithDatabaseName:@"Stocks"];
[stockDatabase updateTickerData];
[stockDatabase updateSymbols];


xmlParser = [[NSXMLParser alloc] initWithData:dataFromServer];
[xmlParser parse];
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Parse XML

Network Operation

Network Operation

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Processing Queue

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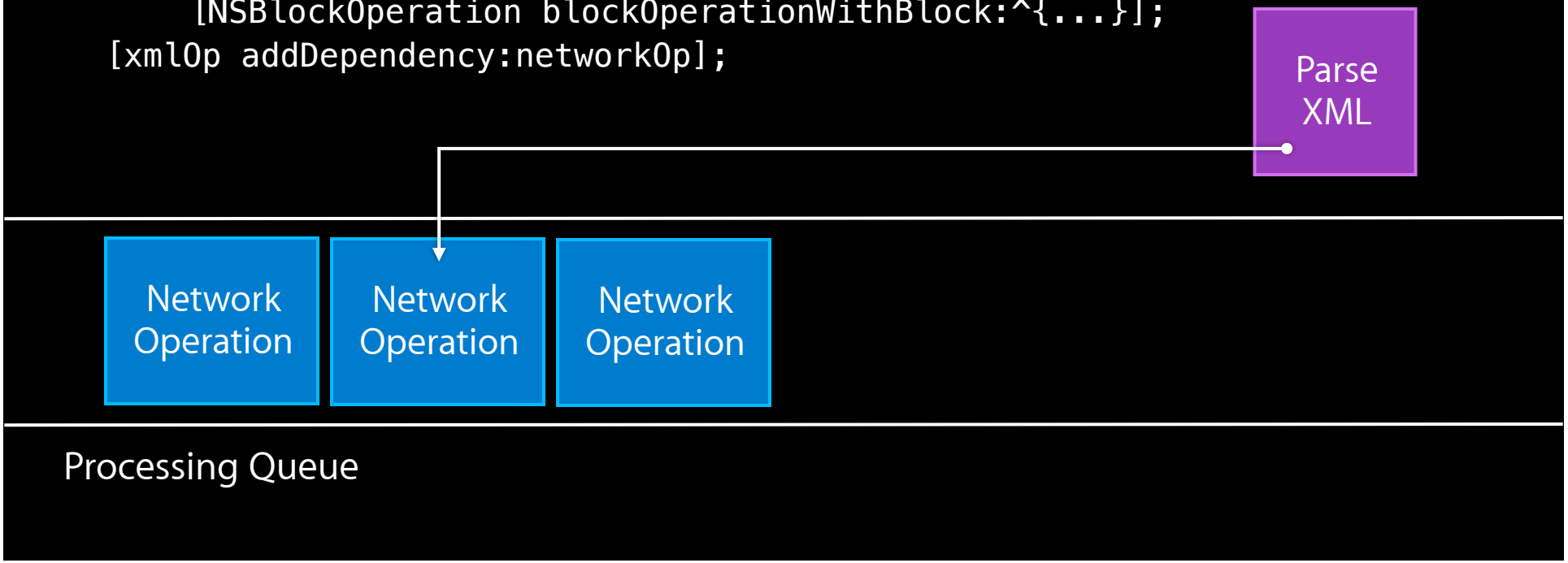

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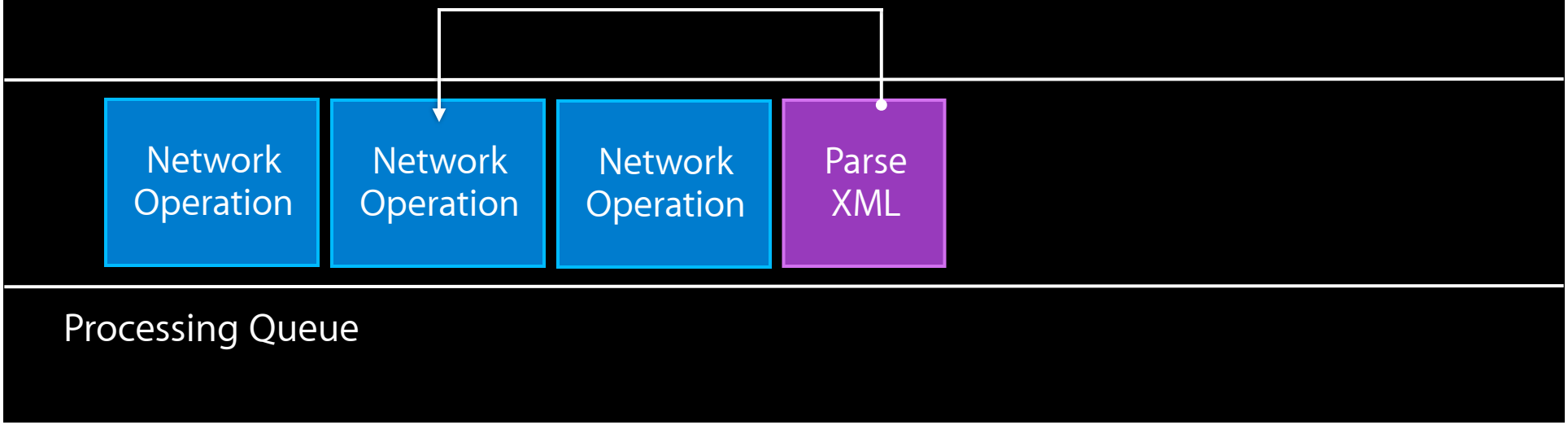

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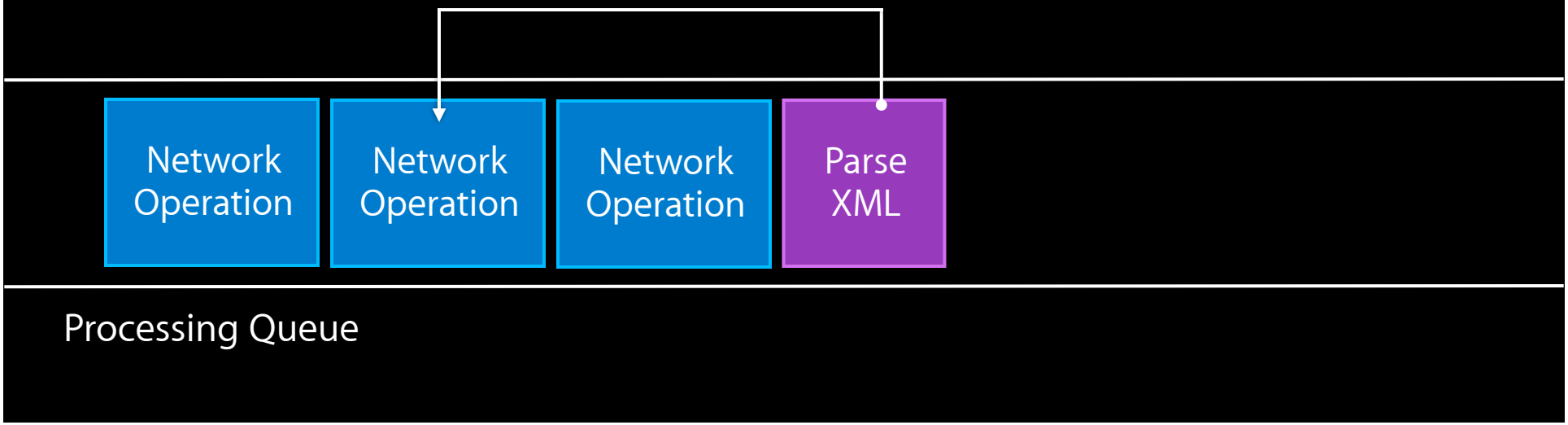

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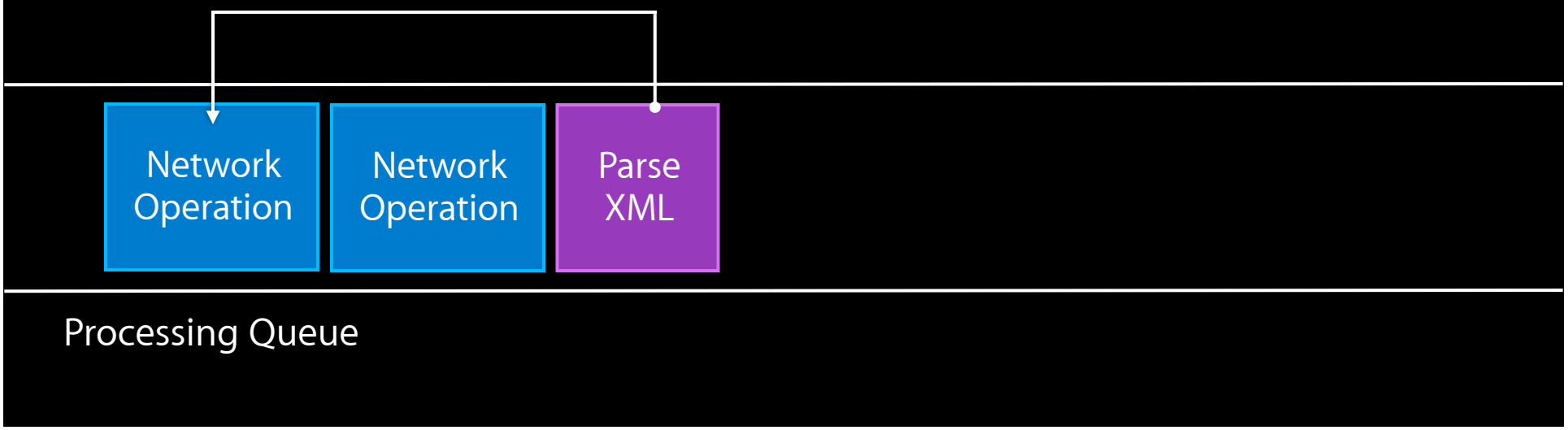

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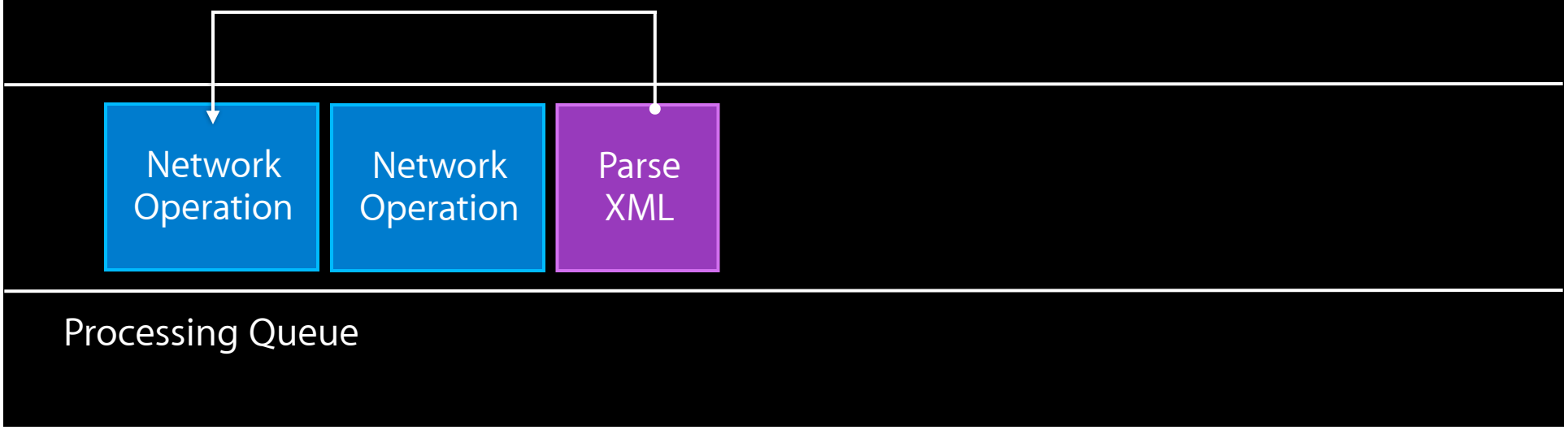

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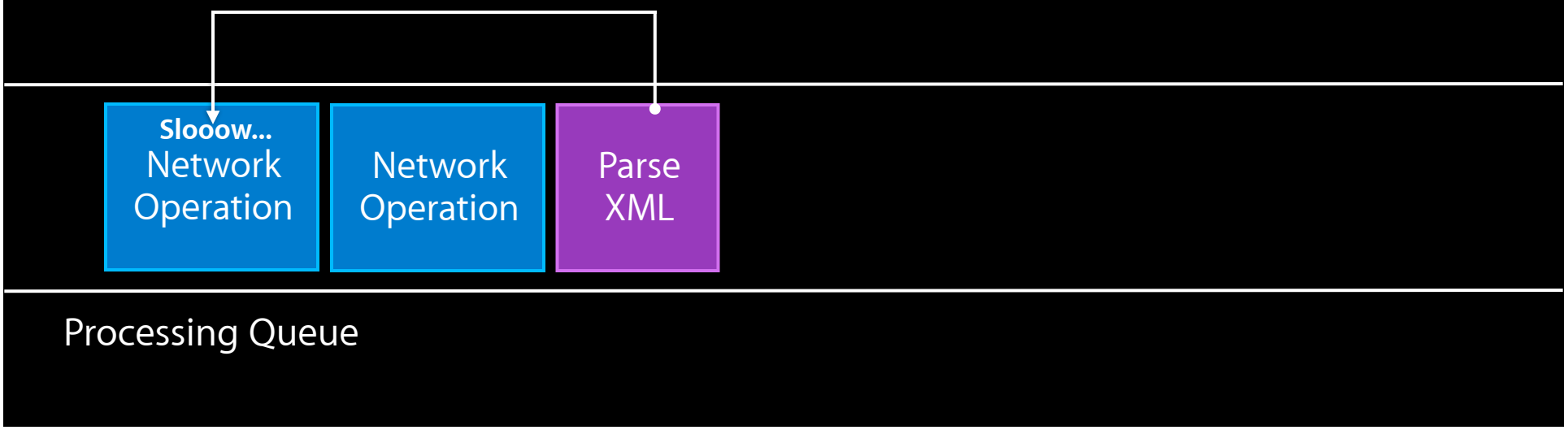

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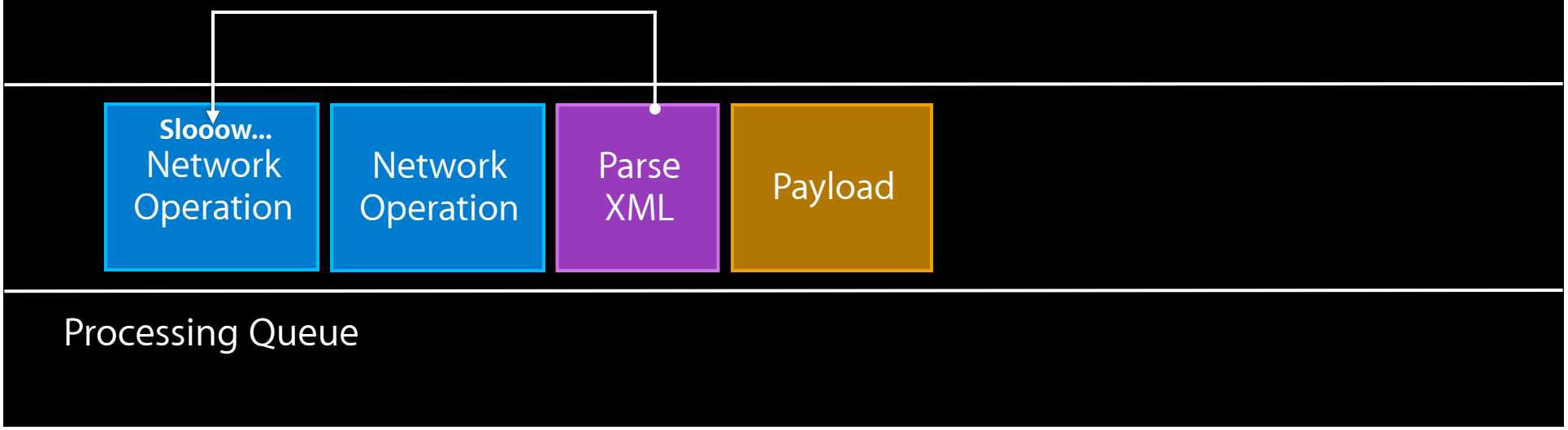

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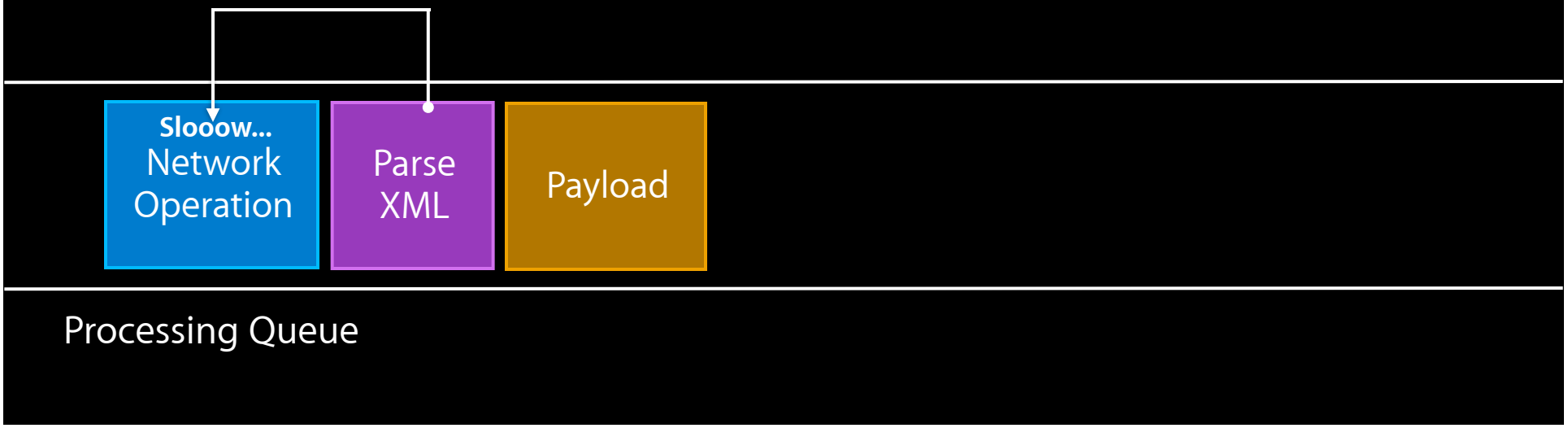

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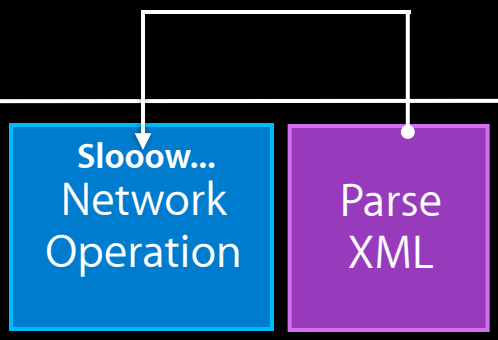

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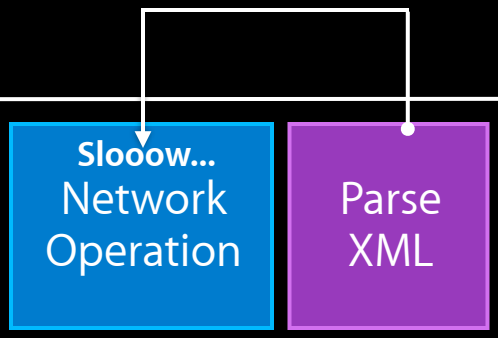

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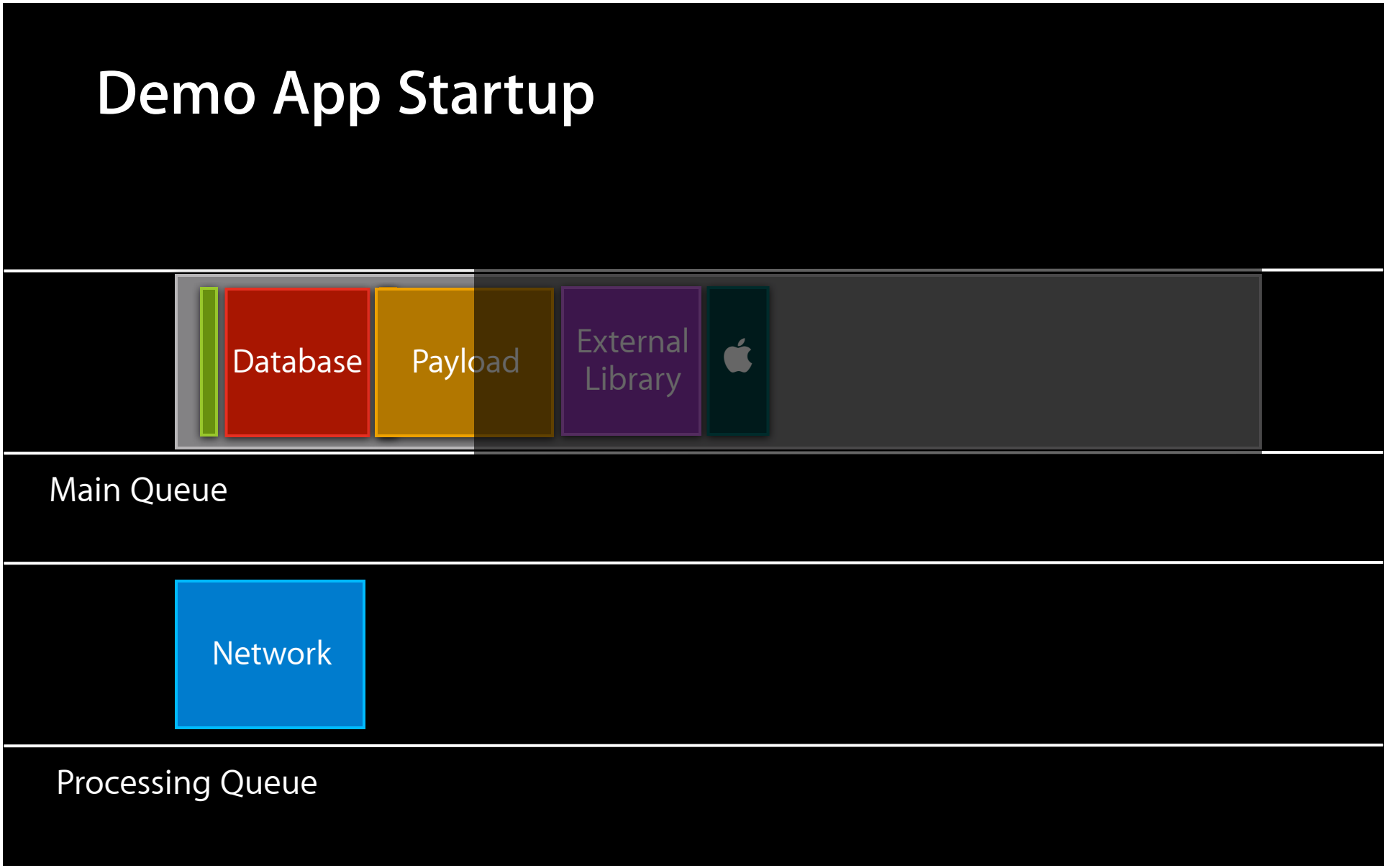
Processing Queue

Demo App Startup



Demo App Startup

Main Queue

Network

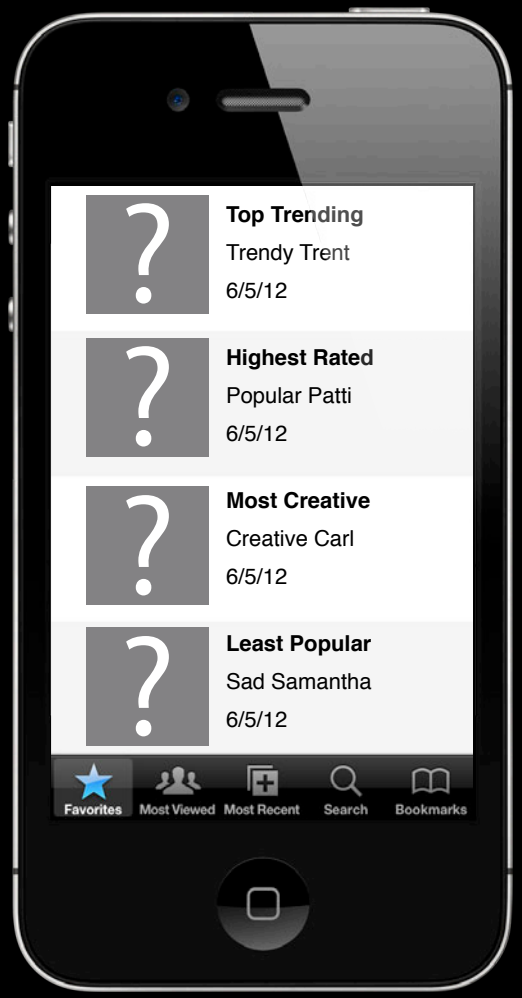
Database

Payload

External Library

Processing Queue

?
Favorites
Most Viewed
Most Recent
Search
Bookmarks


Top Trending
Trendy Trent
6/5/12
Highest Rated
Popular Patti
6/5/12
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What Remains

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State Restoration

What Remains

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- Save and restore application state

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- New delegate method

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application:didFinishLaunchingWithOptions:
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Saving and Restoring Application State on iOS

Russian Hill
Thursday 3:15PM

Demo

Brandon Newendorp
iOS Software Engineer

Preventing Regressions

Hint: He's going to test

Preventing Regressions

Hint: He's going to test

- Be vigilant

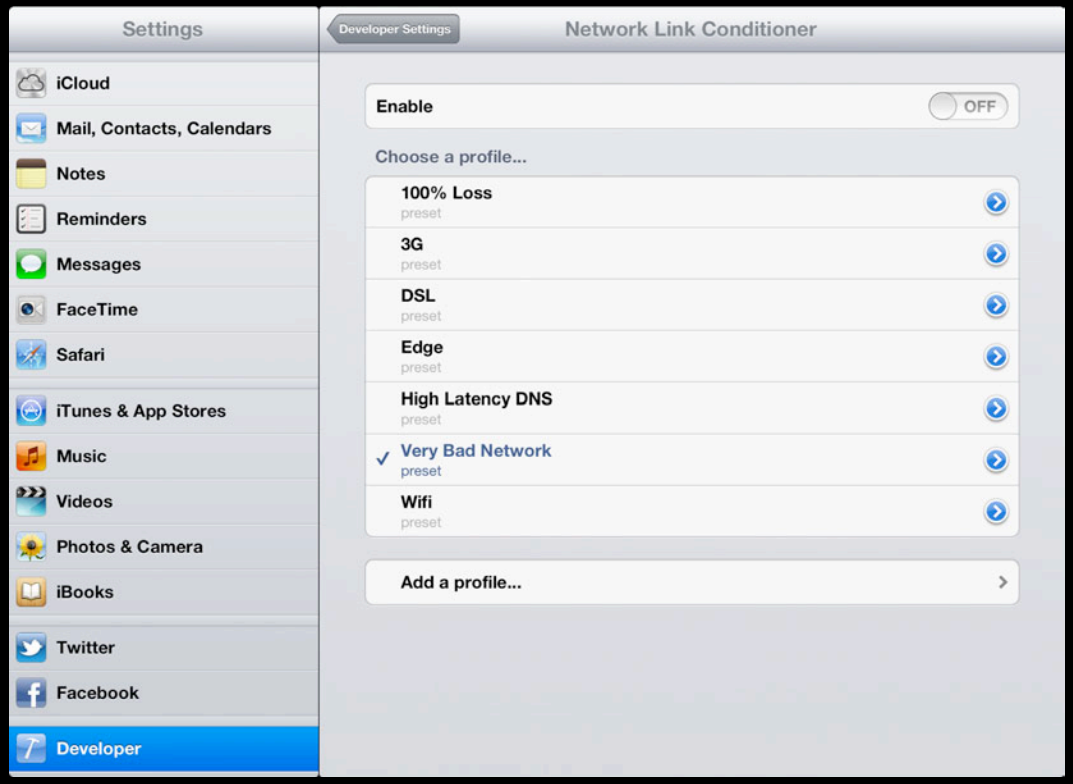
Preventing Regressions

Hint: He's going to test

- Be vigilant
- Automate performance testing

Preventing Regressions

Network Link Conditioner



Wrap Up

Wrap Up

- “Do I need this here?”

Wrap Up

- “Do I need this here?”
- Unneighborly network

Wrap Up

- “Do I need this here?”
- Unneighborly network
- Don’t abuse dispatch_async

Wrap Up

- “Do I need this here?”
- Unneighborly network
- Don’t abuse dispatch_async
- What can you provide immediately?

Related Session

Saving and Restoring Application State on iOS	Russian Hill Thursday 3:15PM

More Information

Jake Behrens
UI Frameworks Evangelist
behrens@apple.com

Documentation
UIApplicationDelegate protocol
Storyboards
NSOperation and NSOperationQueue
State Restoration
http://developer.apple.com/

Apple Developer Forums
http://devforums.apple.com

WWDC2012

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