

# Alfresco CMIS

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# Alfresco CMIS

I'm a Software Engineer, I would like to know...

Is Alfresco CMIS Ready for Use?

How Is The CMIS Domain Model Mapped?

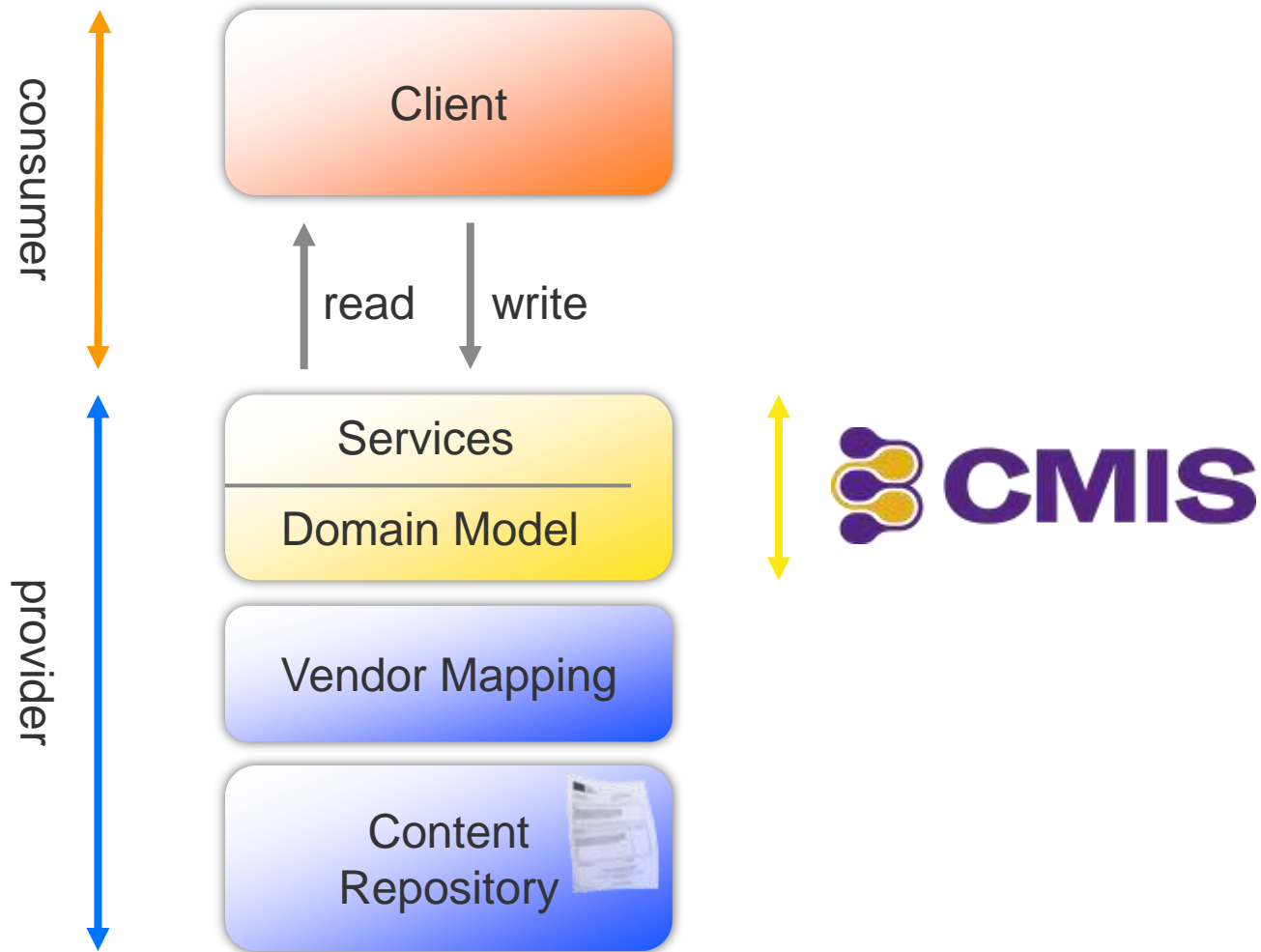
What Can I Query With CMIS QL?

How Can I Use Alfresco CMIS?

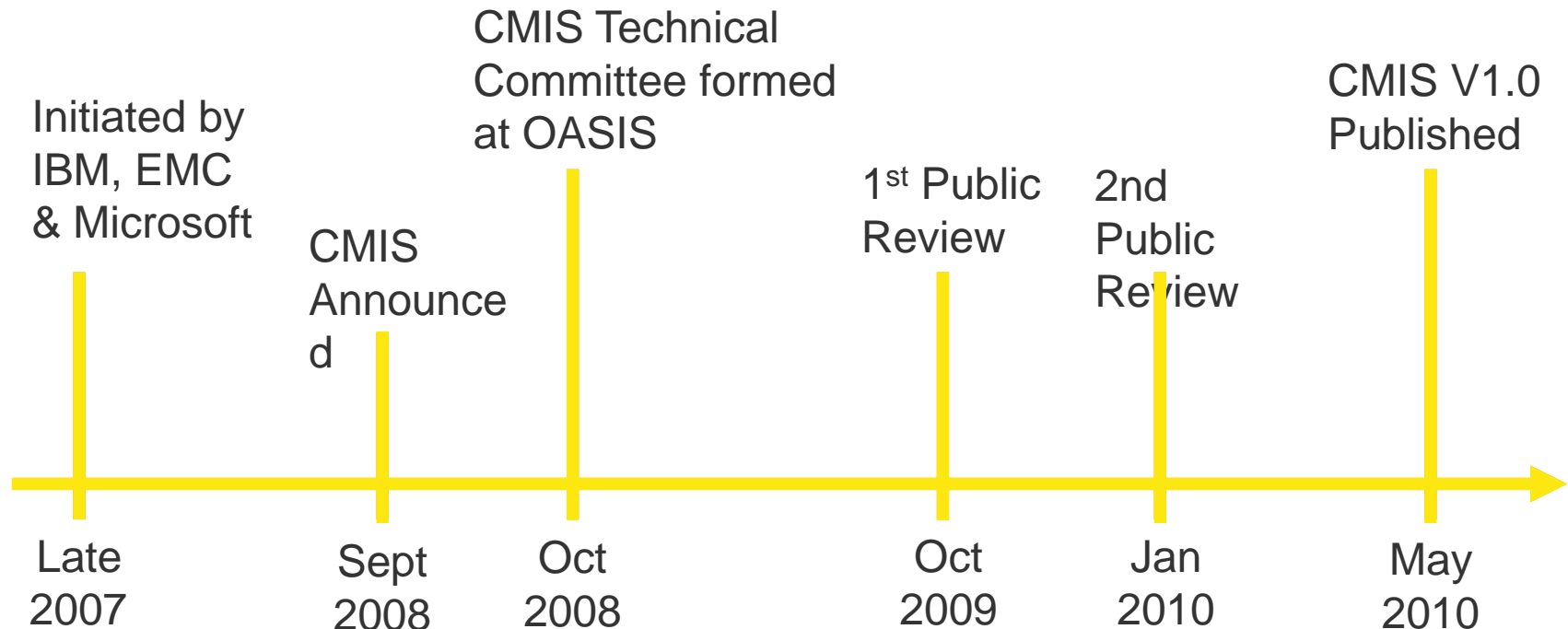
What Extensions Are Supported?

What's Coming Next?

# Recap – Meet CMIS

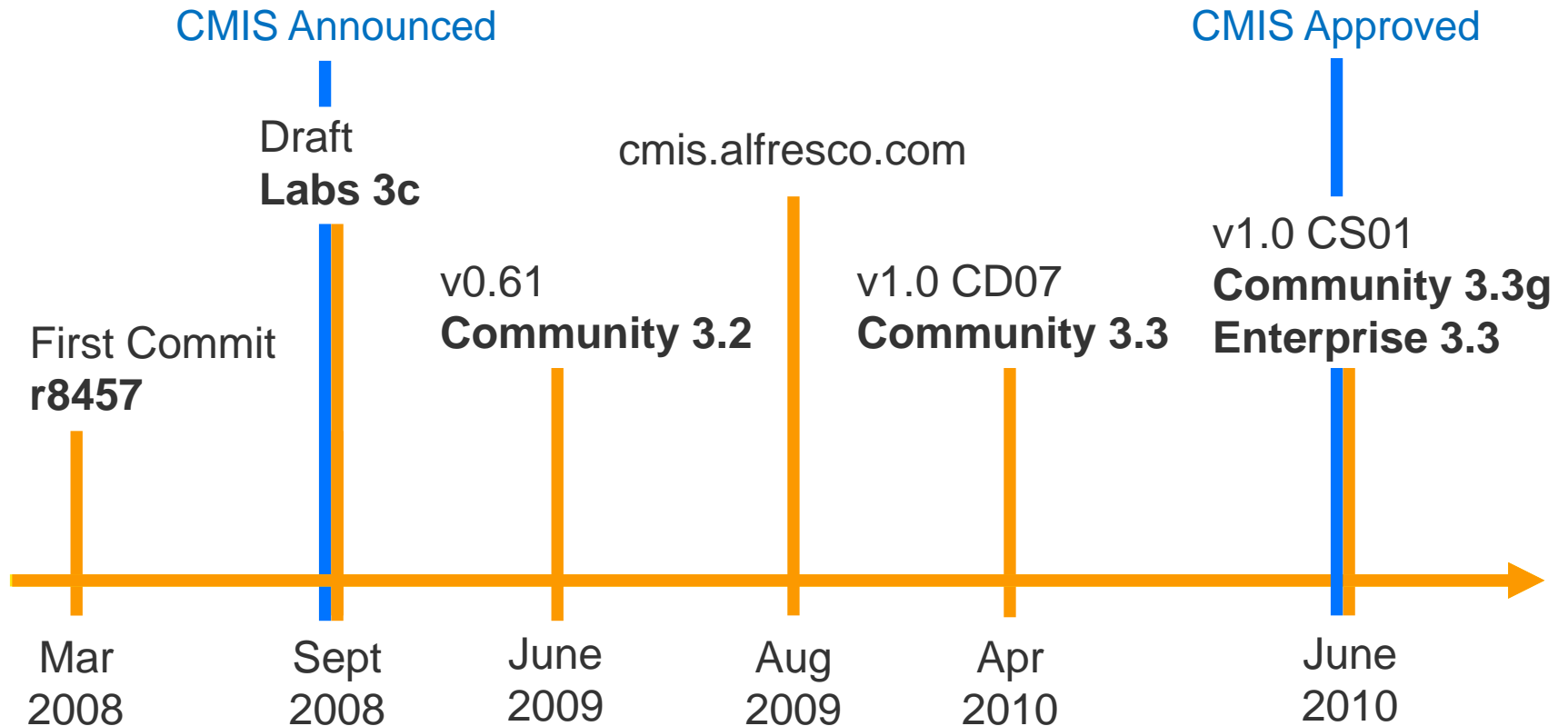


# Recap – CMIS is an OASIS Standard

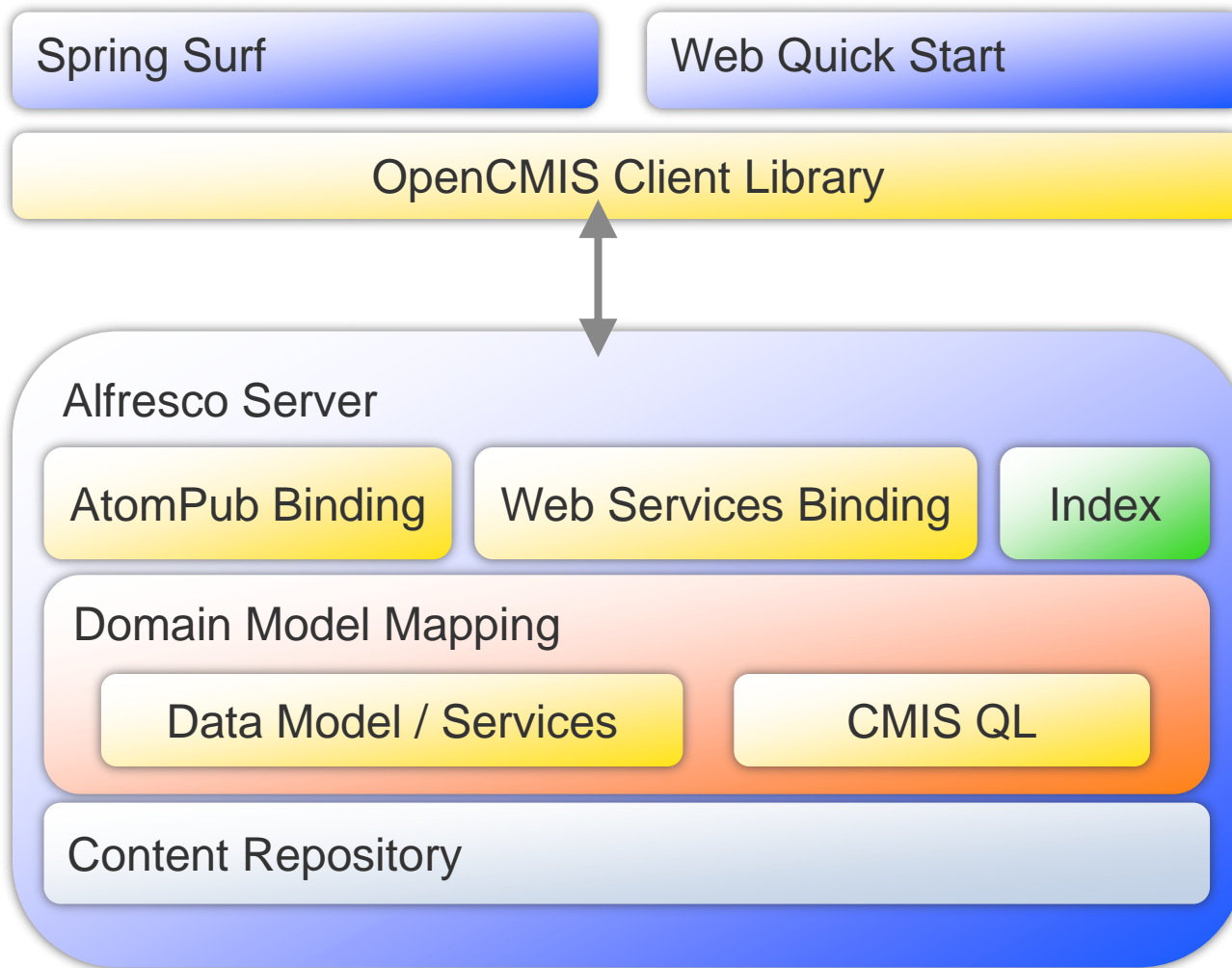


# Alfresco CMIS Timeline

## The 'Unofficial' Reference Implementation



# Alfresco CMIS Stack

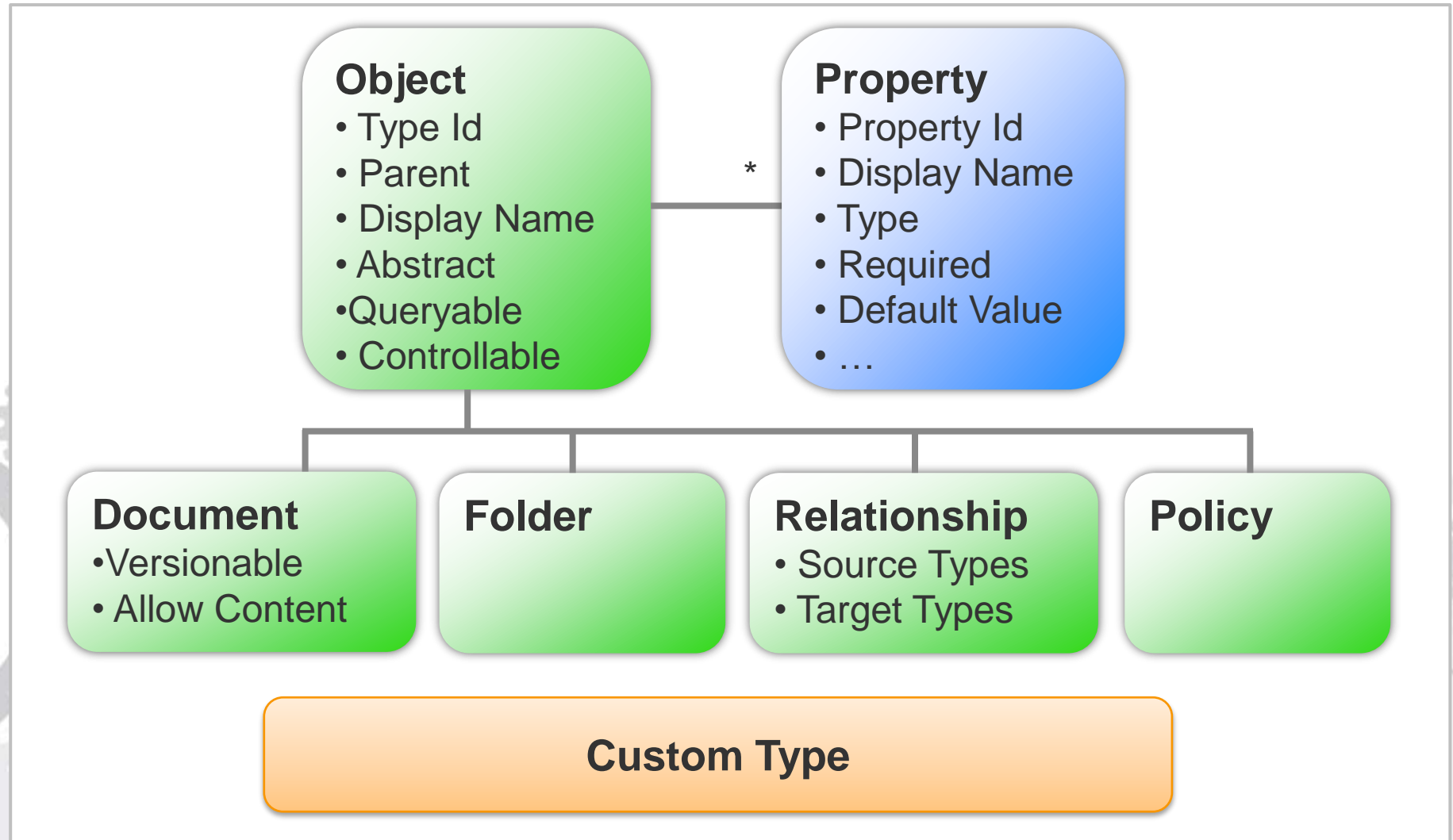


# DEMO

## Explore The Alfresco CMIS Index Page



# CMIS Type Definitions





# Domain Model Mapping

## Type Definitions

- CMIS Document  $\leftarrow$  cm:content
- CMIS Folder  $\leftarrow$  cm:folder
- CMIS Relationship  $\leftarrow$  peer association
  - only if source and target map to CMIS Document / Folder
- CMIS Policy  $\leftarrow$  <nothing>
  - almost, we'll come back to this!
- Sub type of CMIS Document  $\leftarrow$  sub type of cm:content
- Sub type of CMIS Folder  $\leftarrow$  sub type of cm:folder
- Otherwise it is not mapped

# Domain Model Mapping

## Type IDs

- Base Types
  - cmis:document, cmis:folder, cmis:relationship, cmis:policy
- Sub Types
  - D|F|R|P:<namespace\_prefix>:<type\_name>
  - D:cm:savedquery
  - F:st:site
  - R:ia:subscribedCalendarList

# Domain Model Mapping

## Base Type Properties Mapped to Alfresco Equivalents

- cmis:name ← cm:name
- cmis:objectId ← node ref
- cmis:path ← display path of node ref
- cmis:objectTypeId ← id of mapped type definition
- cmis:creationDate, cmis:lastModificationDate ← auditable
- cmis:createdBy, cmis:lastModifiedBy ← auditable
- cmis:contentStream\* ← cm:content
- cmis:\*version\* ← version store history

# Domain Model Mapping

## Custom Properties On Alfresco Sub Types

- Projected on sub type of CMIS Doc / Folder
- Property Id = <namespace\_prefix>:<property\_name>
  - st:siteVisibility
  - st:sitePreset
- Some Alfresco Property Types are not supported
  - d:any, d:qname, d:category
  - property is not mapped

# Domain Model Mapping

## Folders And Documents

- CMIS Folder hierarchy is rooted at /Company Home
  - / = /Company Home
  - /Data Dictionary = /Company Home/Data Dictionary
- CMIS Parent / Child mapped to cm:contains
  - Other child associations are not mapped
  - Peer associations are mapped
- Exclude objects whose type is not mapped to CMIS
  - children and associations (target)
- Read permissions are observed
- AVM nodes are not projected through CMIS

# Domain Model Mapping

## Versions

- Models are very similar, but different enough
  - CMIS Single Version Series vs Alfresco Live/Versioned Stores
- CMIS Version Series
  - CMIS Version → Alfresco version node
    - Alfresco live Node projects itself as latest CMIS Version
  - CMIS Checkout / Cancel / Checkin → Alfresco equivalent
    - CMIS PWC → Alfresco Working Copy
  - CMIS create document auto creates first version
- Non-versionable documents → mock single version
  - version label: 0.0, major: false

# Domain Model Mapping

## Access Control

- Identical Constructs
  - CMIS Direct → Alfresco Inherited
- Basic Permissions
  - cmis:read → Alfresco “Read”
  - cmis:write → Alfresco “Write”
  - cmis:all → Alfresco “All”
- Repository Permissions
  - projected as is

### ACL

#### ACE

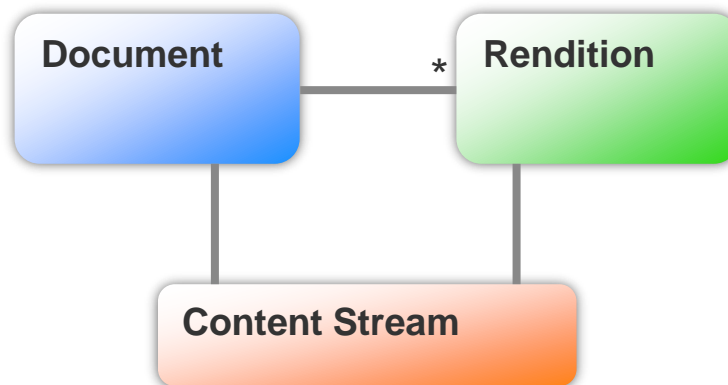
- Principal
- Permissions
- Direct



# Domain Model Mapping

## Renditions

- CMIS Rendition Kind → Alfresco Rendition Definition
  - kind = definition name
- cmis:thumbnail kind → Share Doc Lib Thumbnail



# DEMO

## Explore The Alfresco CMIS Domain Model

# Query

## CMIS QL

- Query Engine built on Alfresco Lucene Index
  - Can also access via Java SearchService
- Relational Model
  - Types mapped to Tables
  - Properties mapped to Columns
- Query names
  - Type name: ns\_prefix:name
  - Property name: ns\_prefix:name
- Two language variants
  - Strict & Alfresco
- No Join (well, more on this later)

# Query

## Language Features

- **SELECT and FROM clauses**
  - Identify which properties from which types to return
- **WHERE clause**
  - Restrict returned rows to those that meet all constraints
  - Predicates: comparison, in, like, null, any, is null
  - Function Predicates: contains(), in\_folder(), in\_tree()
  - Operators: and, or, not
- **ORDER BY clause**
  - Order results by one or more columns

# Query

## Alfresco Language Variant

- Full Alfresco FTS language in CONTAINS()
  - [http://wiki.alfresco.com/wiki/Full\\_Text\\_Search\\_Query\\_Syntax](http://wiki.alfresco.com/wiki/Full_Text_Search_Query_Syntax)
- SCORE() used without CONTAINS()
- Multiple CONTAINS()
- Order by unselected columns
- Restrictions for IN, comparisons and LIKE are dropped
  - Multi-value properties can use single-value syntax
  - Implicit ANY

# Query

## Lucene Indexing Considerations

- All properties may be selected
- A property is **queryable** if indexed
- A property is **orderable** if
  - Untokenized
  - Both Untokenized and Tokenized
  - Or one of the following types: d:boolean, d:datetime, d:double, d:float, d:integer, d:long, d:path
- NOTE: 3.2 → 3.3 upgrade requires re-index to support CMIS exact matching and ordering for cmis:name

# DEMO

## Example Queries





Bad News

CMIS v1.0 does not include Aspect support

# Alfresco Wouldn't Be Alfresco Without Aspects



Good News

We Added Them Anyway

# Domain Model Mapping

## Aspects

- Aspect Definition → CMIS Policy Sub Type
  - P:cm:titled
  - P:cm:ownable
- Query via Join onto Aspect Policy Sub Type
- Aspect Properties → CMIS Extension
  - Apply / Remove Aspect
  - Get / Set Aspect Properties
- OpenCMIS support

# DEMO

Aspects Do Exist...





# Apache Chemistry

## Open Source CMIS Client Libraries

- **Hide complexity** of on-the-wire protocol
- Provides **concise Object-Oriented API**
- Use with any CMIS Content Repository
  - Tested with **all major players**
- Think of as **JDBC of CMIS**
  
- Varieties
  - Java – **OpenCMIS**
  - PHP
  - Python

# What's Next?

<http://cmis.alfresco.com/preview>

- OpenCMIS Server refactoring
- Browser Binding (JSON)
- plus lots more...

# Alfresco CMIS Take Away

## Remember This

- Alfresco CMIS first **released over 2 years ago**
- Full support for **CMIS v1.0**
- AtomPub and Web Service Bindings
- **CMIS QL**
- **Aspects** Extension
- OpenCMIS **Client API**
- Community 3.3, Enterprise 3.3, [cmis.alfresco.com](http://cmis.alfresco.com)



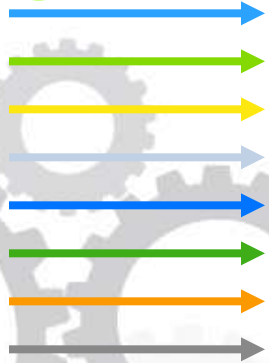
# Learn More

[docs.oasis-open.org/cmisis/CMIS/v1.0/cs01/](http://docs.oasis-open.org/cmisis/CMIS/v1.0/cs01/)

[cmis.alfresco.com](http://cmis.alfresco.com)

[incubator.apache.org/chemistry/](http://incubator.apache.org/chemistry/)

# Shape& Color Palette



Normal Text  
Normal Text  
Normal Text





Alfresco<sup>TM</sup> 2010  
Developer Conference

