



An Introduction to Alfresco

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What is Alfresco?

DM-WCM OSS Platform

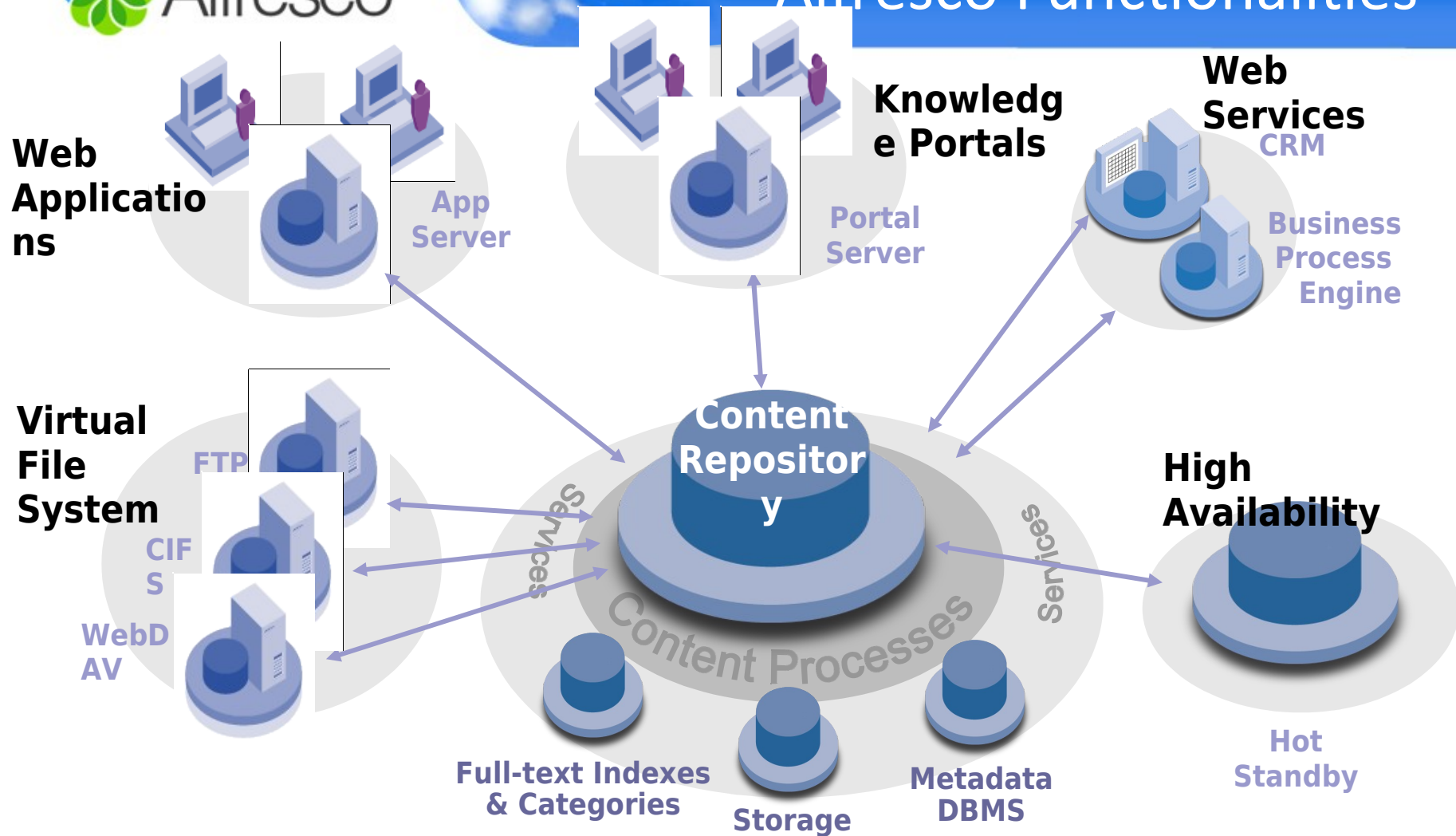
- Multiple uses
 - Document Management platform
 - Web content management platform
- Where does it comes from?
 - Co-founded by John Newton – Co-Founder of Documentum &
 - John Powell – Former COO, Business Objects
 - Started in January 2005
- Where is Alfresco located?
 - Head office and engineering located in Maidenhead UK.
 - Employees are located in Europe(France, Luxembourg, Germany, UK, Spain) and US in multiple locations

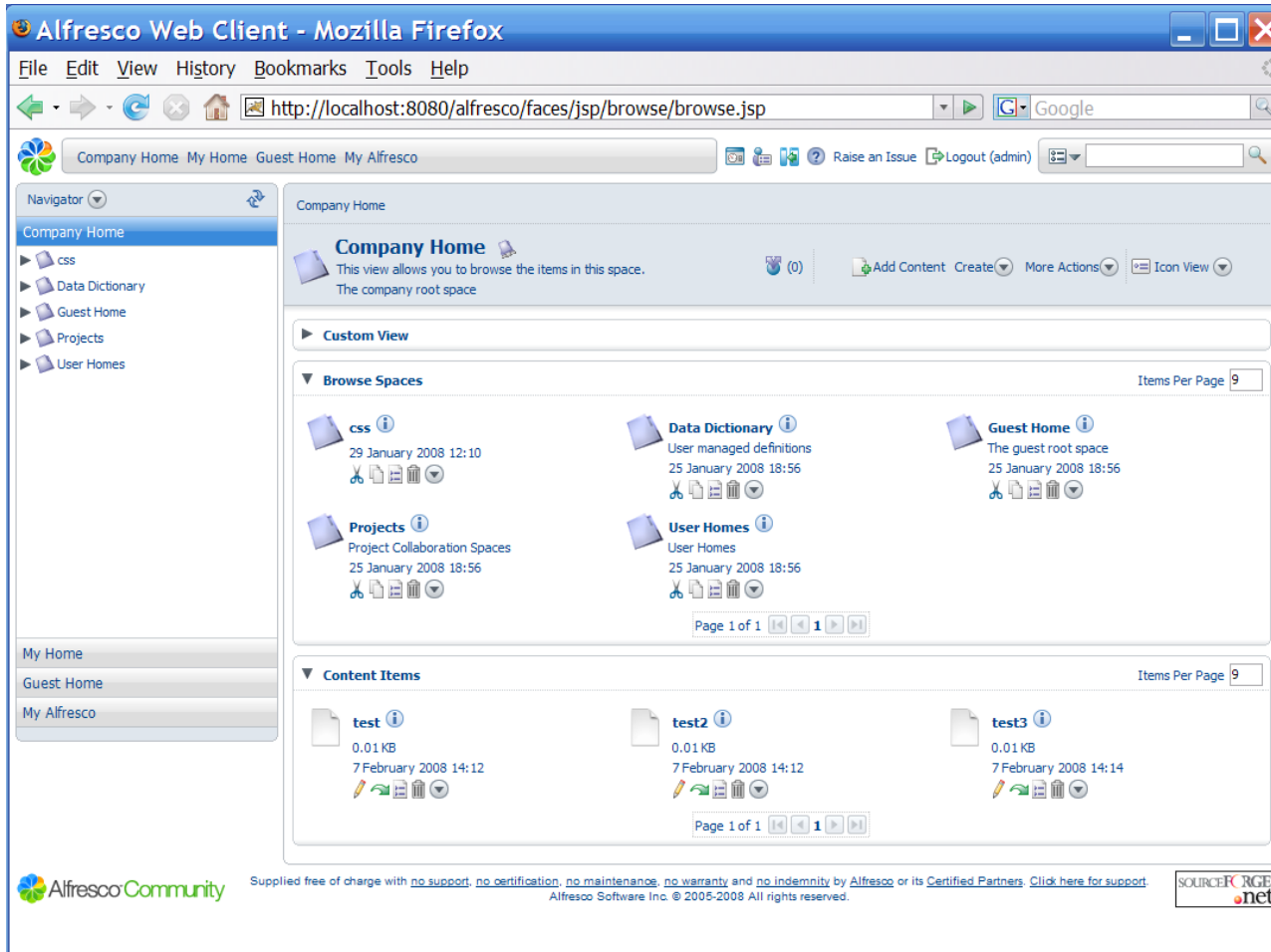
DM functionalities

- Smart spaces, ACLs/Security, SSO, user groups & roles
- Rules, actions and aspects
- Intelligent Virtual File System
 - Easy to use as a shared drive
- Office integration
- Advanced workflow
- My Alfresco dashboard and WebScripts
- Multiple access protocols available: cifs, ftp, webdav, http,...
- Scalability achieved with Clustering



Alfresco Functionalities





Alfresco Web Client - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:8080/alfresco/faces/jsp/browse/browse.jsp

Company Home My Home Guest Home My Alfresco

Company Home

This view allows you to browse the items in this space.
The company root space

Custom View

Browse Spaces

Items Per Page 9

- css**
29 January 2008 12:10
- Data Dictionary**
User managed definitions
25 January 2008 18:56
- Guest Home**
The guest root space
25 January 2008 18:56
- Projects**
Project Collaboration Spaces
25 January 2008 18:56
- User Homes**
User Homes
25 January 2008 18:56

Page 1 of 1

Content Items

Items Per Page 9

- test**
0.01 KB
7 February 2008 14:12
- test2**
0.01 KB
7 February 2008 14:12
- test3**
0.01 KB
7 February 2008 14:14

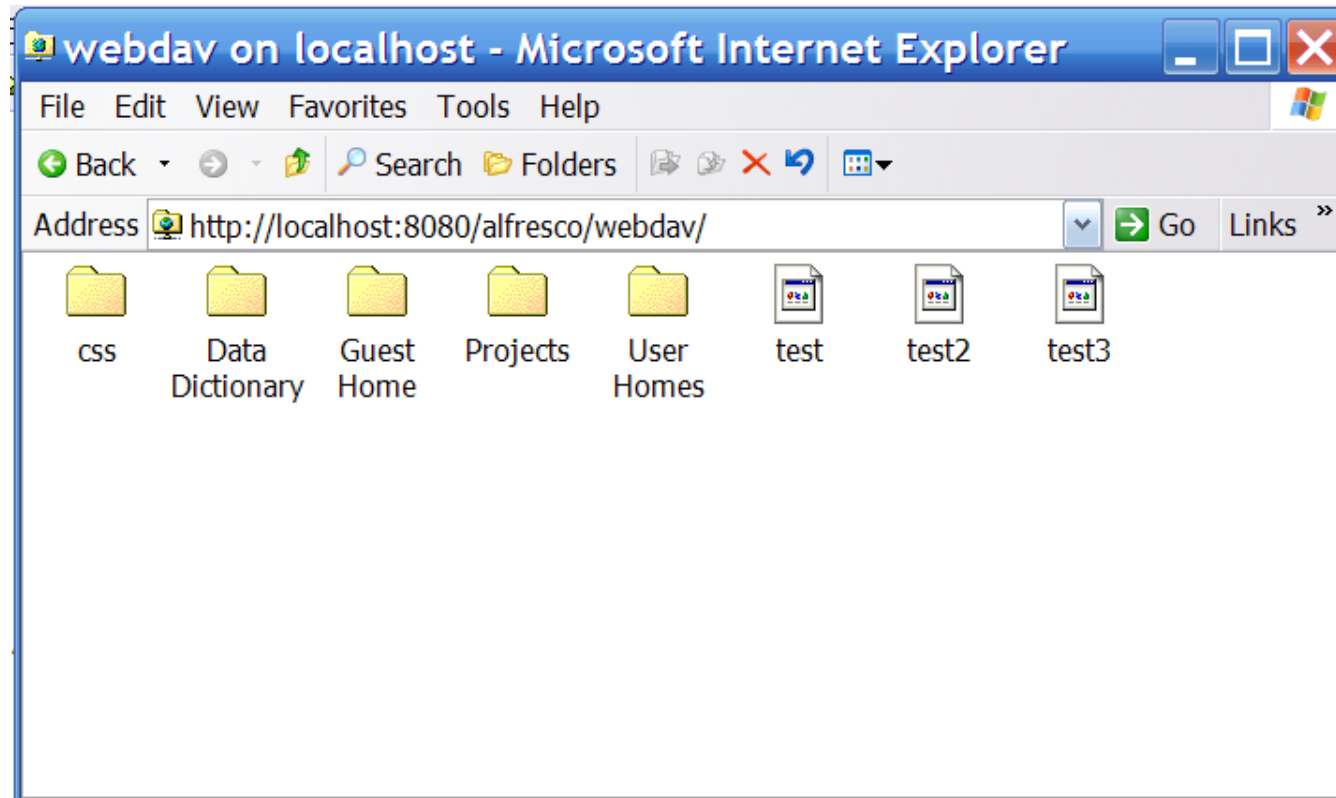
Page 1 of 1

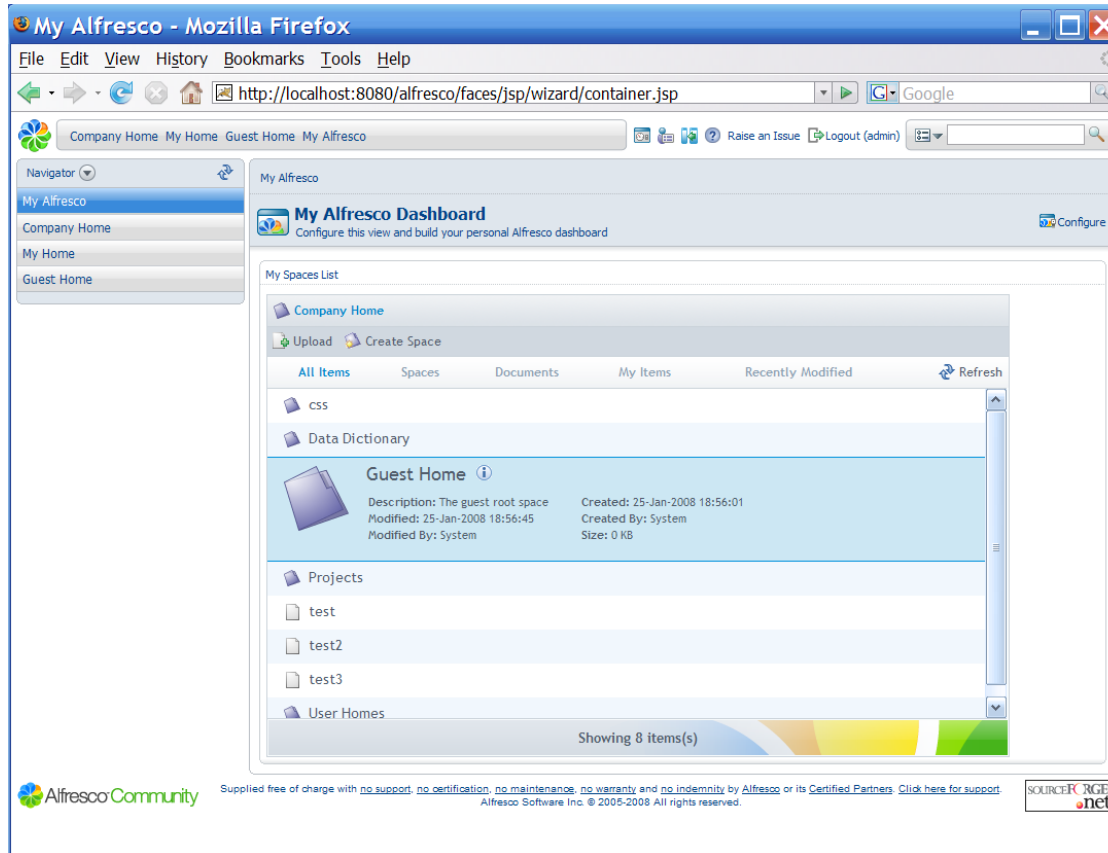
Alfresco Community

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My Alfresco - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:8080/alfresco/faces/jsp/wizard/container.jsp

Company Home My Home Guest Home My Alfresco

Navigator

- My Alfresco
- Company Home
- My Home
- Guest Home

My Alfresco Dashboard

Configure this view and build your personal Alfresco dashboard

My Spaces List

- Company Home
 - Upload Create Space
 - All Items Spaces Documents My Items Recently Modified Refresh
 - css
 - Data Dictionary
- Guest Home
 - Description: The guest root space
 - Created: 25-Jan-2008 18:56:01
 - Modified: 25-Jan-2008 18:56:45
 - Created By: System
 - Modified By: System
 - Size: 0 KB
- Projects
 - test
 - test2
 - test3
- User Homes

Showing 8 item(s)

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- What is WCM

- Publication engine
 - Massively XML + BPM
- Validating engine
- Agnostic
 - Final language (ASP, JSP, ...)
 - All application server or WS
 - Every data source (XML, SGBD, ...)
 - Multiple design tools (Photoshop, Dreamweaver, Flash, ...)
- Rendering
 - All types : HTML, PDF, PDA, text, ...
 - Do not impose a “standard” presentation. Drawback is that you have to do it yourself.

- What is not WCM

- A portal
- A tool for small sites (few modifications / contributors)
- A CMS with some addons
 - Rendition models
 - Additional modules (Forum, ...)

WCM functionalities

- XML Content Authoring
- Multi-channel Content Publishing
- Sandboxed Content Development
- Virtualization and In-context Preview
- Content Staging, Promotion, Workflow, and Snapshots
- Content Deployment
- Link Validation
- Content Launch and Expiration
- Web Publishing Dashlets
- Web Content Management Scenario Overview
- Creating New Users
- Creating New Web Forms



WCM Functionalities

- Creating New Web Projects
- Importing the Sample Dynamic Website
- Creating New Web Content: Company Profiles
- Creating New Web Content: Press Releases
- Content Launch and Expiration
- Site Deployment
- Snapshots and Rollback
- Links Management: User Sandboxes
- Links Management: Workflow
- Content Contribution: Alfresco Dashlets
- Site Regeneration: Updating Templates
- Virtual File System Interface

- Based on Java platform (Version 1.5 onwards)
 - Alfresco code uses Java 1.5 language features
 - Generics (No ClassCastException, No cast, Compile time check):Used
 - Enhanced for Loop: Used
 - Auto-boxing:Used
 - Type safe Enumerations:Used
 - Varargs: Not Used
 - Static imports:
 - Metadata:Used

- Alfresco compilation and customization
 - Source or the HEAD version can be downloaded at(
http://wiki.alfresco.com/wiki/Alfresco_SVN_Development_Environment).
 - Nightly build <http://dev.alfresco.com/downloads/nightly/dist/>
 - Use SDK and modules for customization/extensions (Sdk:
http://wiki.alfresco.com/wiki/Alfresco_SDK, Modules:
http://wiki.alfresco.com/wiki/Developer_Guide#Alfresco_Module_Packages
)
 - Do not develop your customizations against the sources pooled out the SVN. Instead, use SDK.

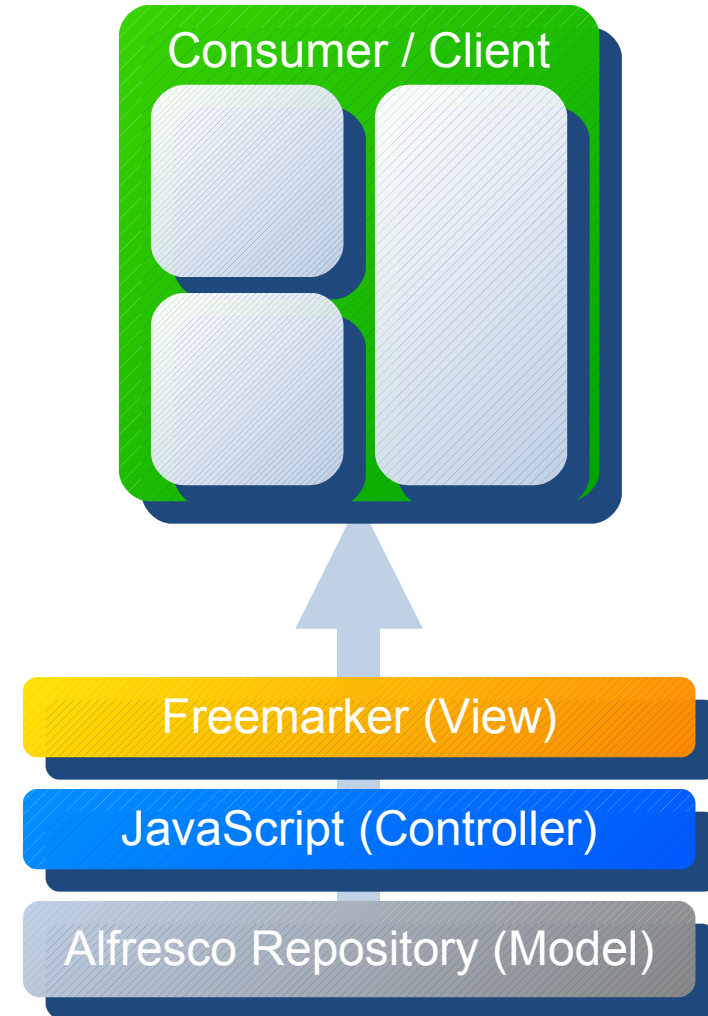


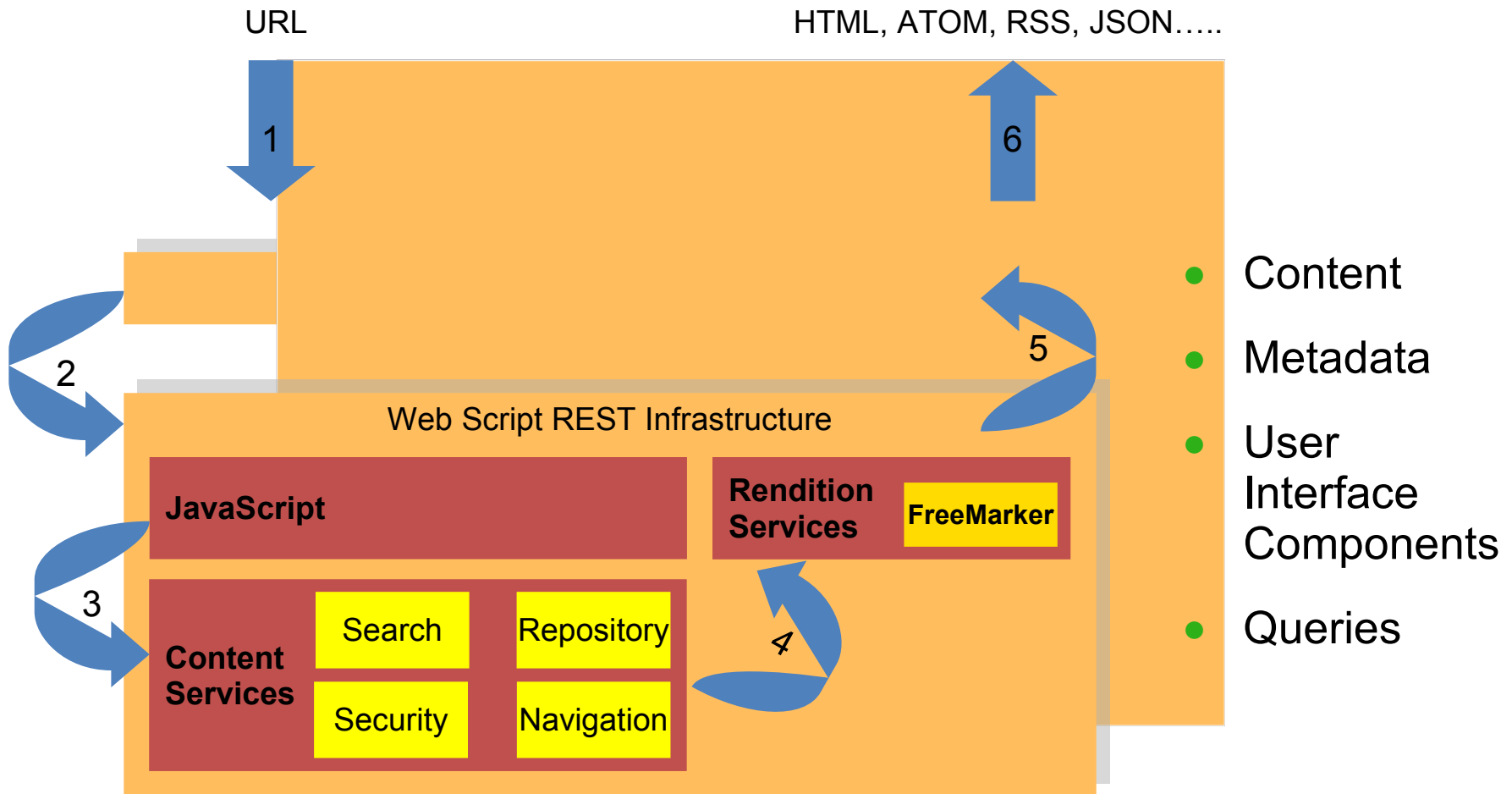
- Alfresco is using OSS components and integrated them with Spring
 - Full text indexing → Lucene
 - database independence/persistence layer → Hibernate
 - Web pages generation and navigation → JSF
 - Document transformation, Meta data extraction → Imagic, Openoffice,...
Templating → FreeMarker, XSLT
 - Workflow → JBPM
 - Scripting → Rhino Server Side JavaScript, PHP integration on Server side
and client side (Integrated with Media Wiki see
http://wiki.alfresco.com/wiki/Alfresco_PHP_Library)
 - Spring framework

- Internal API structure
 - The API is structured around services
 - Service = lowest API level you should interact with
 - NodeService, FileFolderService, AuthenticationService, ...
- Spring framework used for dependency injection & cross cutting aspects
 - Cross-cutting aspects
 - Security enforcement
 - Transaction support
 - Audit trail
 - Multilingual functionalities on content and metadata

Web Scripts

- Lightweight scriptable REST framework
- Multiple uses
 - Roll your own API
 - Create new UI components
 - Create portlets/widgets
 - Expose WCM/AVM features
- Script-based implementation
 - Server-side JavaScript
 - Freemarker
- Limited only by your imagination
 - Integration: Create a mashup
 - Search: Exposed to other systems.
 - Rich Internet Applications
 - Cross-language
 - Cross-platform







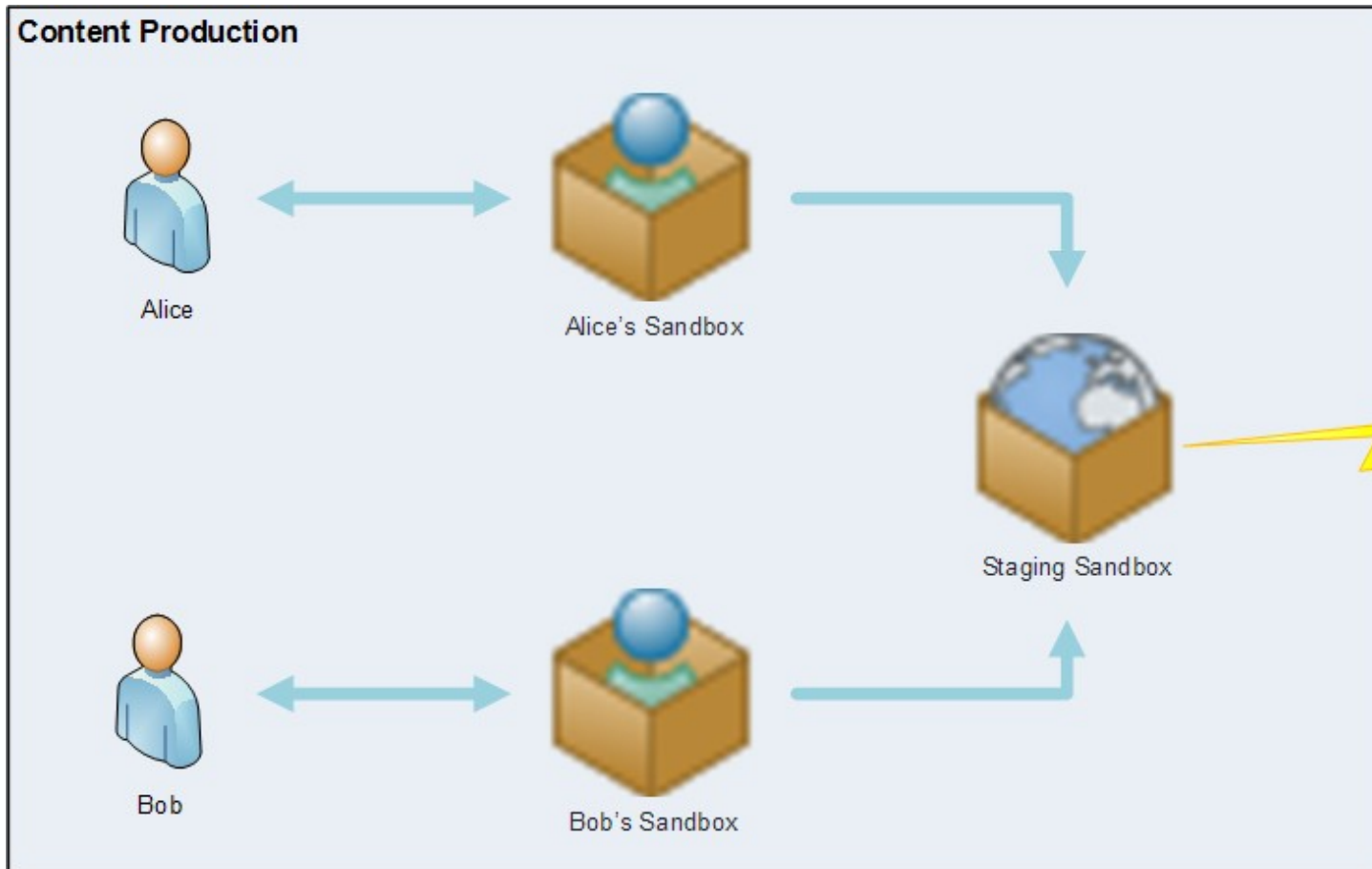
Alfresco Web Content Management(WCM)

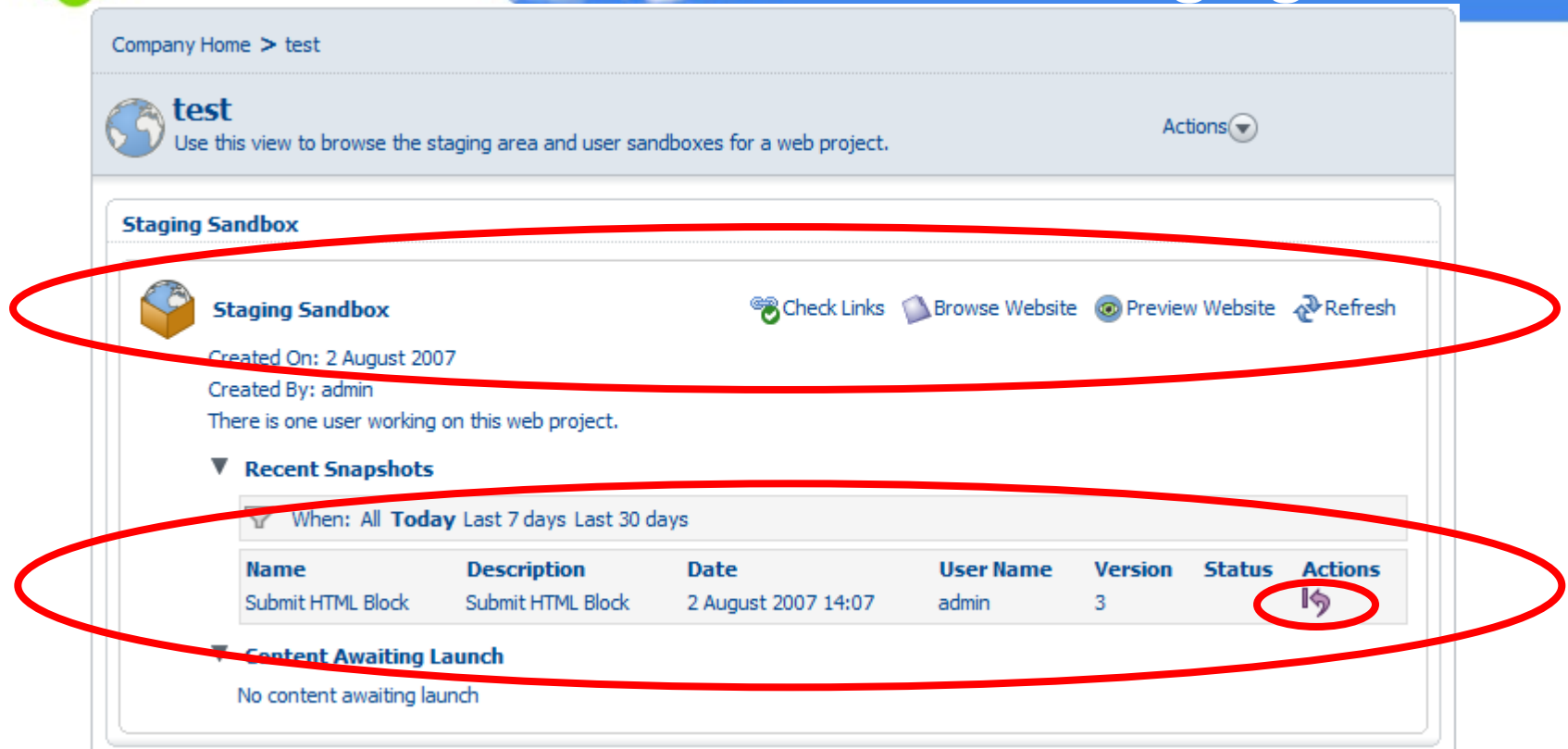
- Web Projects

- The production side representation of a “site”
- Manages the content consumed by the site
- Defines access rules and roles for content producers
- Can be many web projects per Alfresco server

- Sandboxes

- Allow content producers to make changes to a site in isolation from one another
- Default configuration is:
 - 1 staging sandbox per web project
 - 1 user sandbox per user per web project
 - 1 temporary workflow sandbox per active workflow instance per web project










Company Home > test

test
Use this view to browse the staging area and user sandboxes for a web project. Actions ▾


Staging Sandbox

 **Staging Sandbox**  Check Links  Browse Website  Preview Website  Refresh

Created On: 2 August 2007
Created By: admin
There is one user working on this web project.

▼ **Recent Snapshots**

When: All **Today** Last 7 days Last 30 days

Name	Description	Date	User Name	Version	Status	Actions
Submit HTML Block	Submit HTML Block	2 August 2007 14:07	admin	3		

▼ **Content Awaiting Launch**
No content awaiting launch

From the staging sandbox, a content manager can:

- Preview the “blessed” version of the website and check for broken links
- Review snapshots of the staging sandbox
- Revert staging to a previous version (rollback)



Production Model – User Sandboxes

The screenshot shows the 'My Sandbox (Content Manager)' interface. A red circle highlights the top toolbar containing: Check Links, Browse Website, Preview Website, Refresh, Undo All, and Delete Sandbox. Another red circle highlights the 'Modified Items' table, which has columns for Name, Created Date, Modified Date, Size, and Actions. The table lists two items: 'Test HTML Block.html' and 'Test HTML Block.xml'. A third red circle highlights the 'Web Forms' section, specifically the 'Create Content' button in the 'Actions' column.

Name	Created Date	Modified Date	Size	Actions
Test HTML Block.html	2 August 2007 23:15	2 August 2007 23:15	0.64 KB	[Edit] [Up] [Down] [Undo] [Preview] [Copy] [Paste] [Delete]
Test HTML Block.xml	2 August 2007 23:15	2 August 2007 23:15	0.9 KB	[Edit] [Up] [Down] [Undo] [Preview] [Copy] [Paste] [Delete]

Name	Description	Actions
HTML Block		[Create Content]

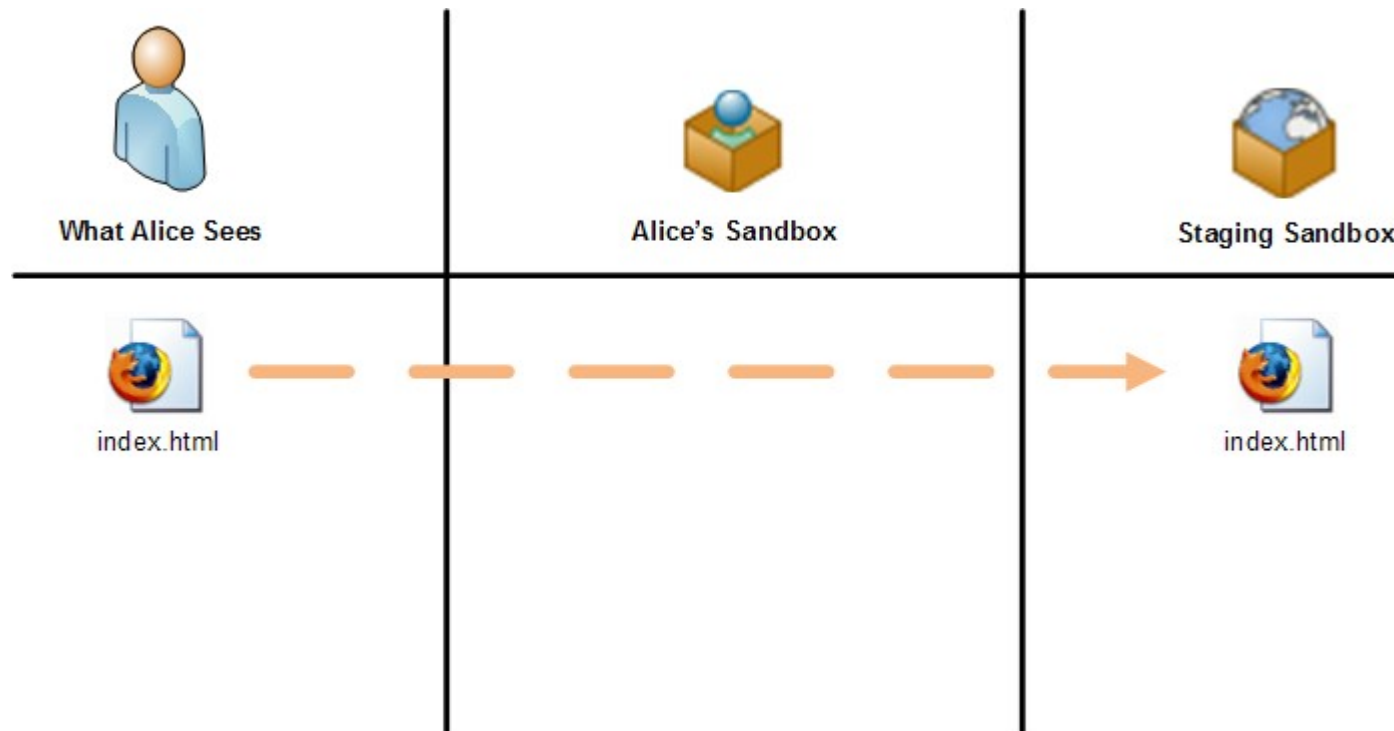
From a user sandbox, a content contributor can:

- Perform global operations on their sandbox, including:
 - Preview, undo and check for broken links
- Perform operations on one or more assets that have been modified in their sandbox, including:
 - Edit, submit, undo, preview, copy and delete
- Use a web form to author new content, and (in 2.2) browse content created via that form

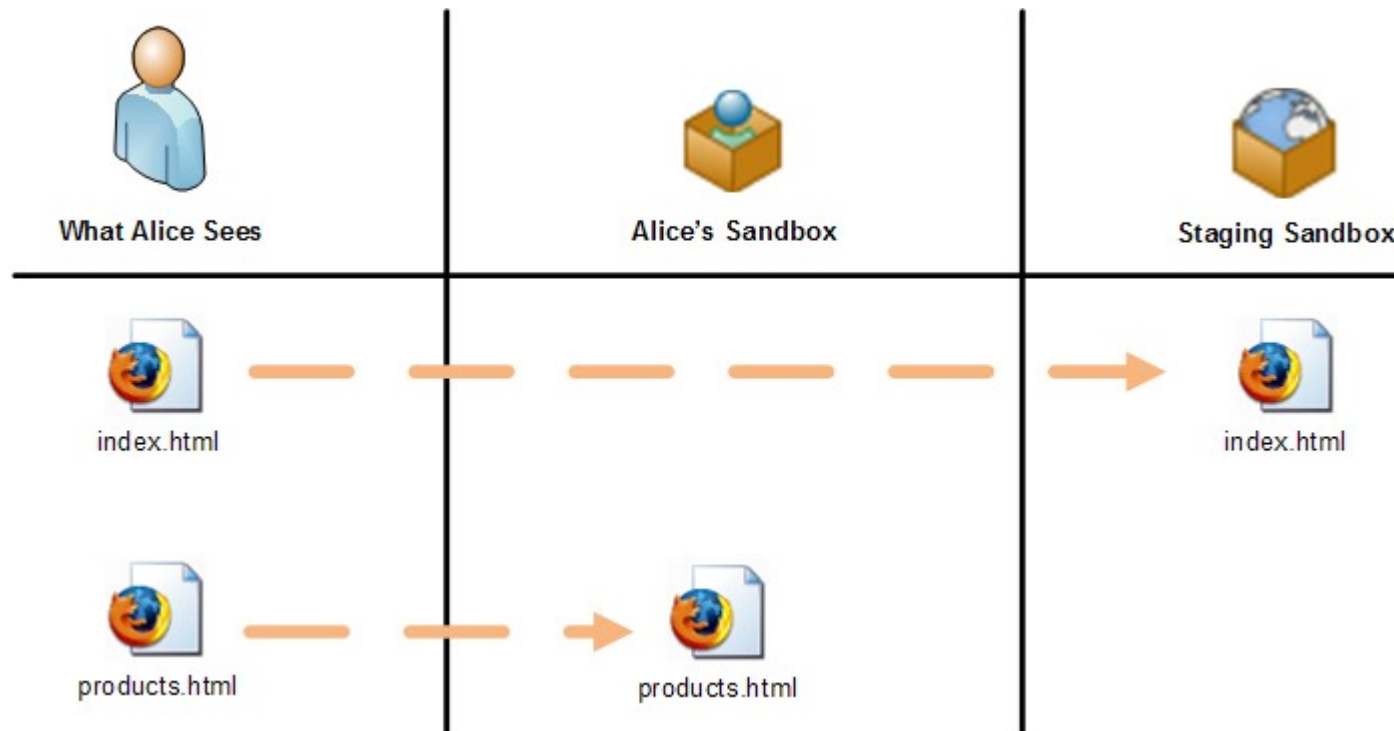


Production Model – Sandboxes

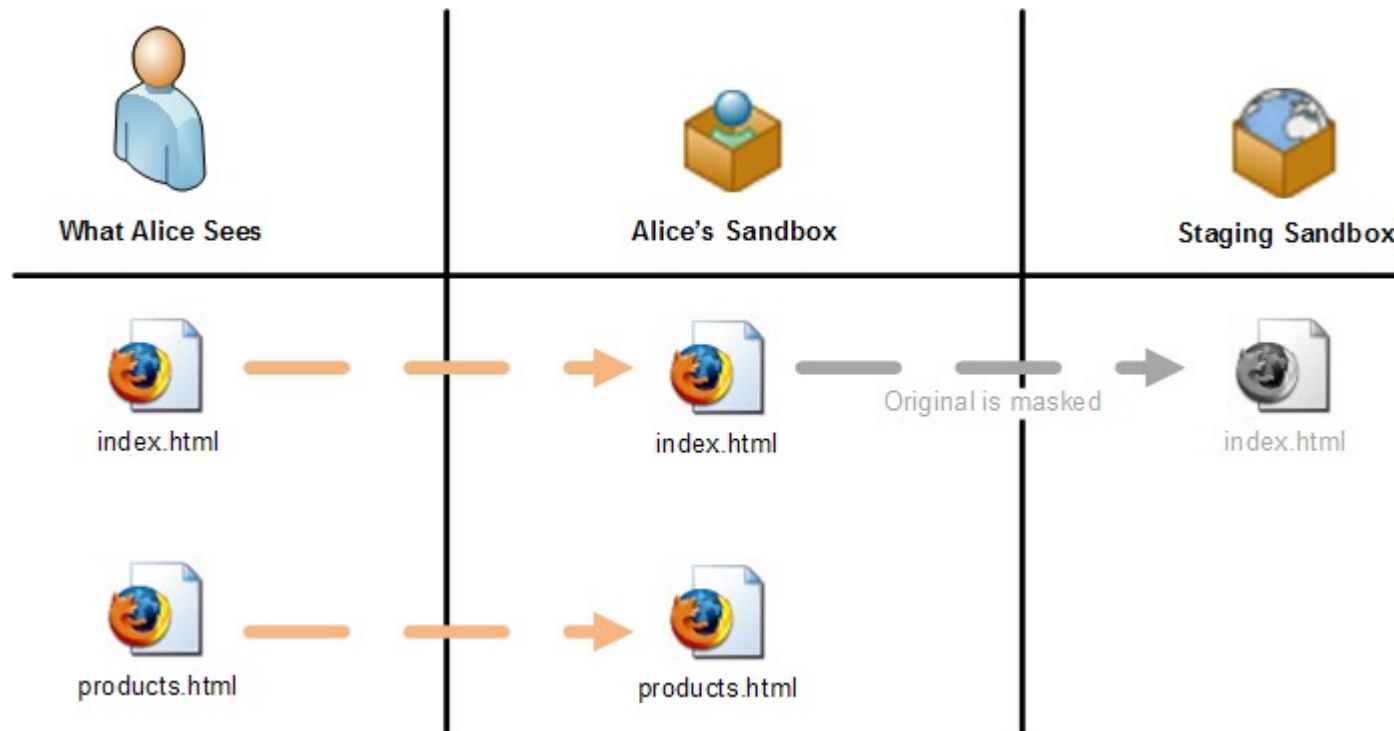
- User sandboxes act like a “sheet of glass” sitting on top of the staging sandbox.
- Until modified, any object (file or folder) viewed in a user sandbox is seen directly in the staging sandbox, as if through glass.
- When modified, the object is copied into the user sandbox and the modifications are saved there. The original version remains unchanged in the staging sandbox.
- Upon successful completion of workflow, the modified version of the object is promoted into the staging sandbox, replacing the original version.
- Unlike most web CMSeS, this applies to all classes of operation (create, update and delete) for both files and folders.



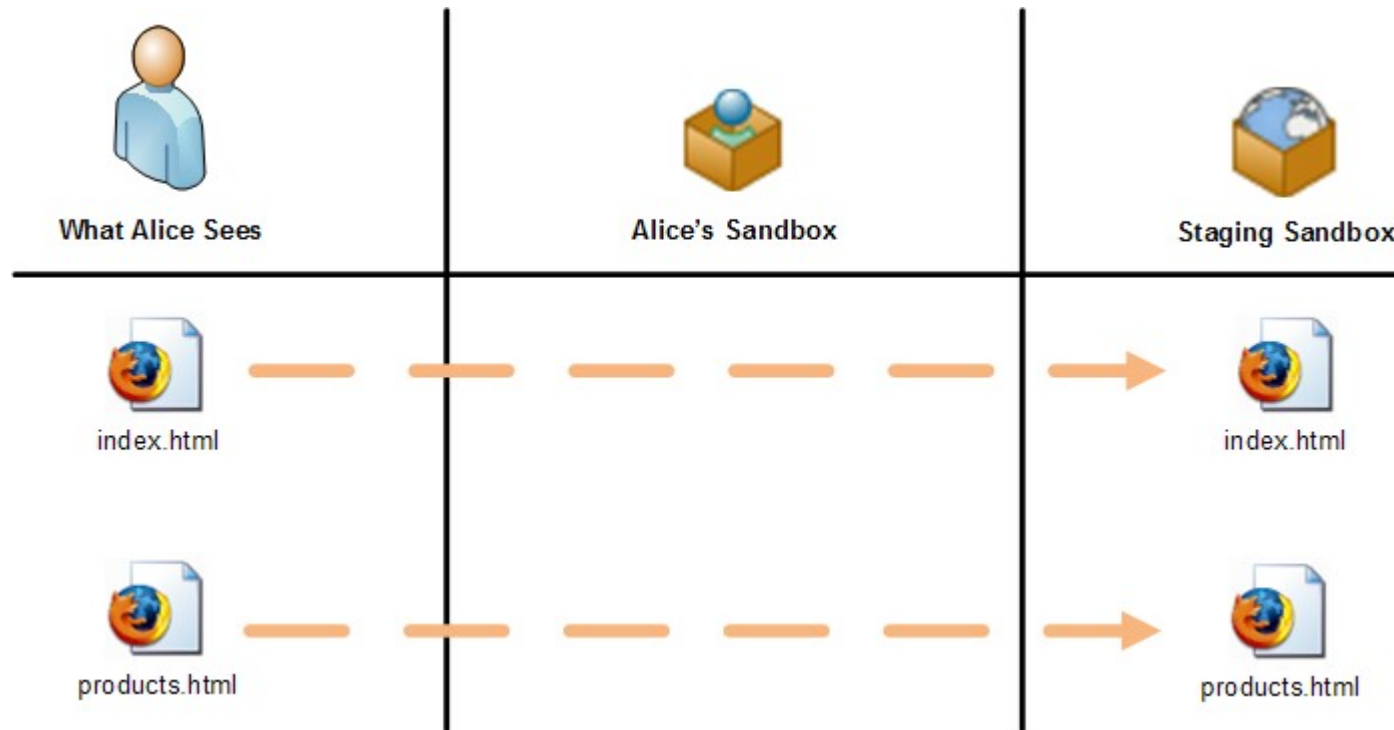
- No changes yet made



- Alice creates a new page called "products.html"



- Alice edits "index.html" to add a link to her new page



- Alice submits her changes to workflow, they are approved and promoted to staging



Production Model – Transparent Layers

- User sandboxes are implemented in Alfresco via "Transparent Layers"
- What is a "transparent layer"?
 - A central construct in the AVM repository
 - Similar to the UnionFS Linux filesystem
 - Used to define "composite" stores that can "read-through" content from other stores
 - Can be defined at the store, directory or file level (user sandboxes use store-level transparent layers, for example)
- As of Alfresco v2.2, can be configured by a Content Manager in the staging sandbox of a web project. This is useful for:
 - Defining web project templates
 - Reusing content across multiple web projects

The Virtualization Server provides:

- An isolated preview environment for each sandbox
- Preview of both static content (HTML, images, etc.) and J2EE web applications (JSPs, struts, etc.)

It is implemented as a customised version of Tomcat that:

- Treats each sandbox as a separate Tomcat web application (done dynamically to minimise memory footprint)
- Understands an "overloaded" hostname format that allows it to map requests to specific sandboxes. This requires either:
 - Internet access to Alfresco's "Echo DNS" service (recommended)
 - Wildcard DNS

- Content Manager
- Content Publisher
- Content Contributor
- Content Reviewer

Editorial Power



Role	Relative User Population
Content Manager	Few
Content Publisher	Some
Content Contributor	Many
Content Reviewer	Implementation Dependent

Content Manager

- Most powerful role a user can have within the context of a Web Project.

Content Publishers

- “Power users” of the content authoring tool
- Typically subject matter experts (SMEs) for authored content
- Can Submit to Staging

Content Contributors

- “Workforce” of the content authoring team
- Bulk of the day-to-day activity within the content authoring tool

The Content Reviewer

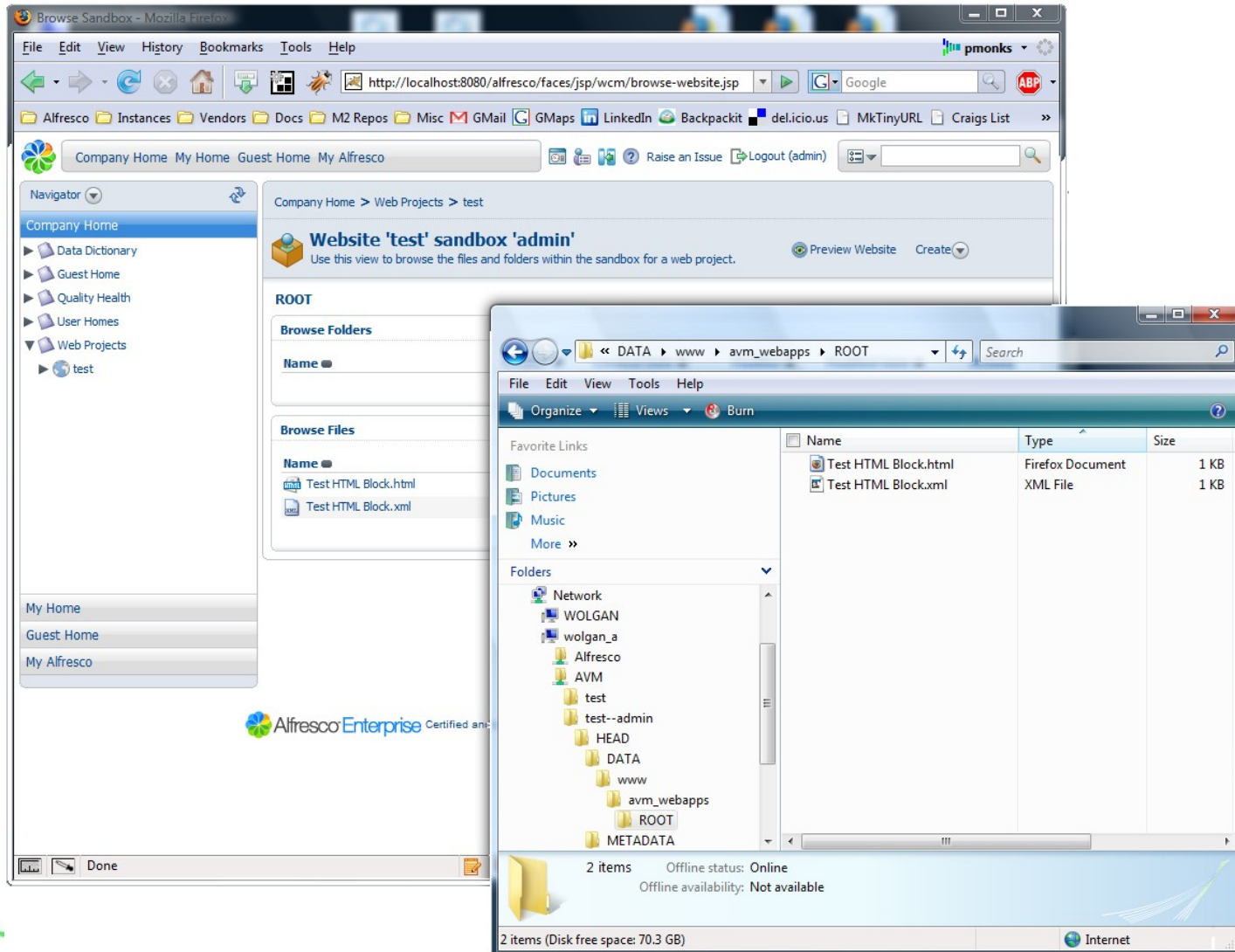
- Specifically designed for workflow review and approval processes.
- Has some stake in or ownership of the content
- Not typically part of the content authoring team



Roles – Putting it all together

	Content Reviewer	Content Contributor	Content Publisher	Content Manager
Review Content	X	X	X	X
Edit Content	X	X	X	X
Submit Content	X	X	X	X
Create content		X	X	X
Delete Content			X	X
Import Bulk Content into Staging Sandbox				X
Invite Project Users				X
Modify Staging Content				X
Perform Any Action in Any User Sandbox				X

- Filesystem projection (CIFS) provides:
 - Access to all available sandboxes (HEAD)
 - Access to all available layers (preview, review)
 - Access to all available snapshots
 - Contained in special top-level VERSIONS directory
 - Available as read-only views
 - Access to all available file metadata
 - Contained in special top-level METADATA directory
 - Accessed as normal files
 - Metadata file names, dir structure mimic regular site
- Does not provide:
 - Access to metadata (not supported by CIFS protocol)

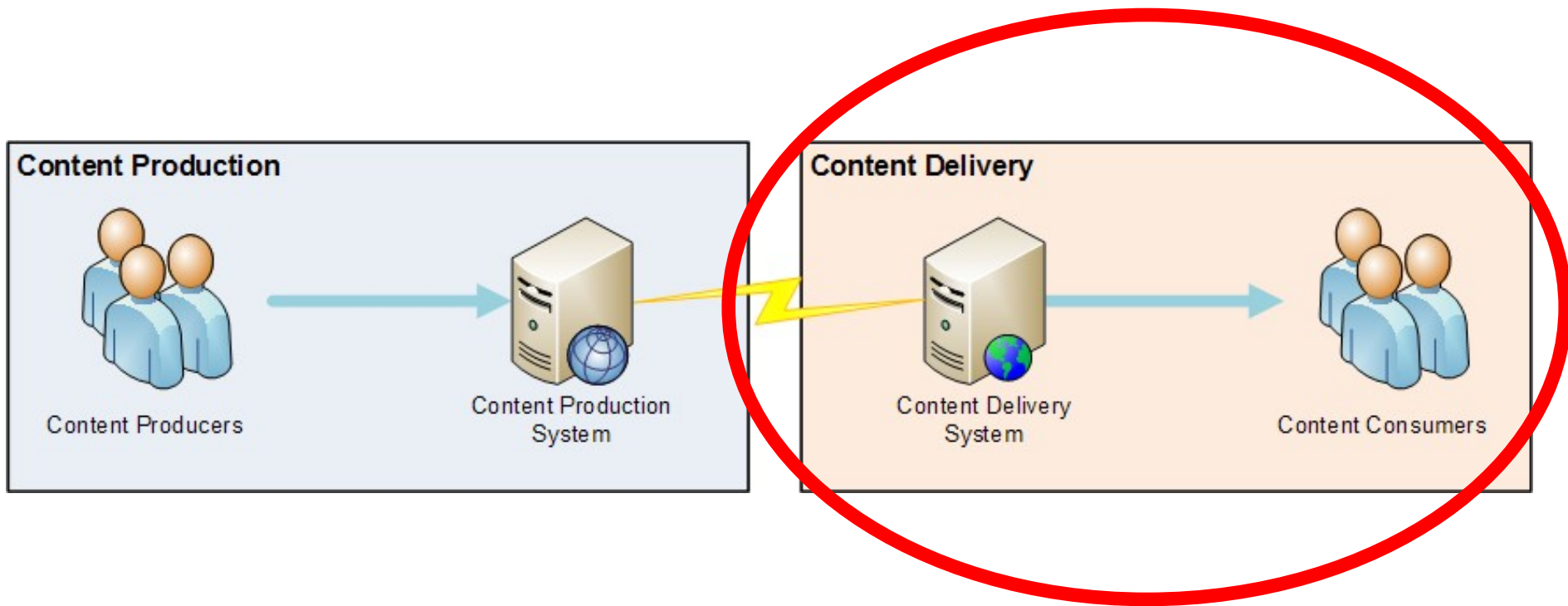


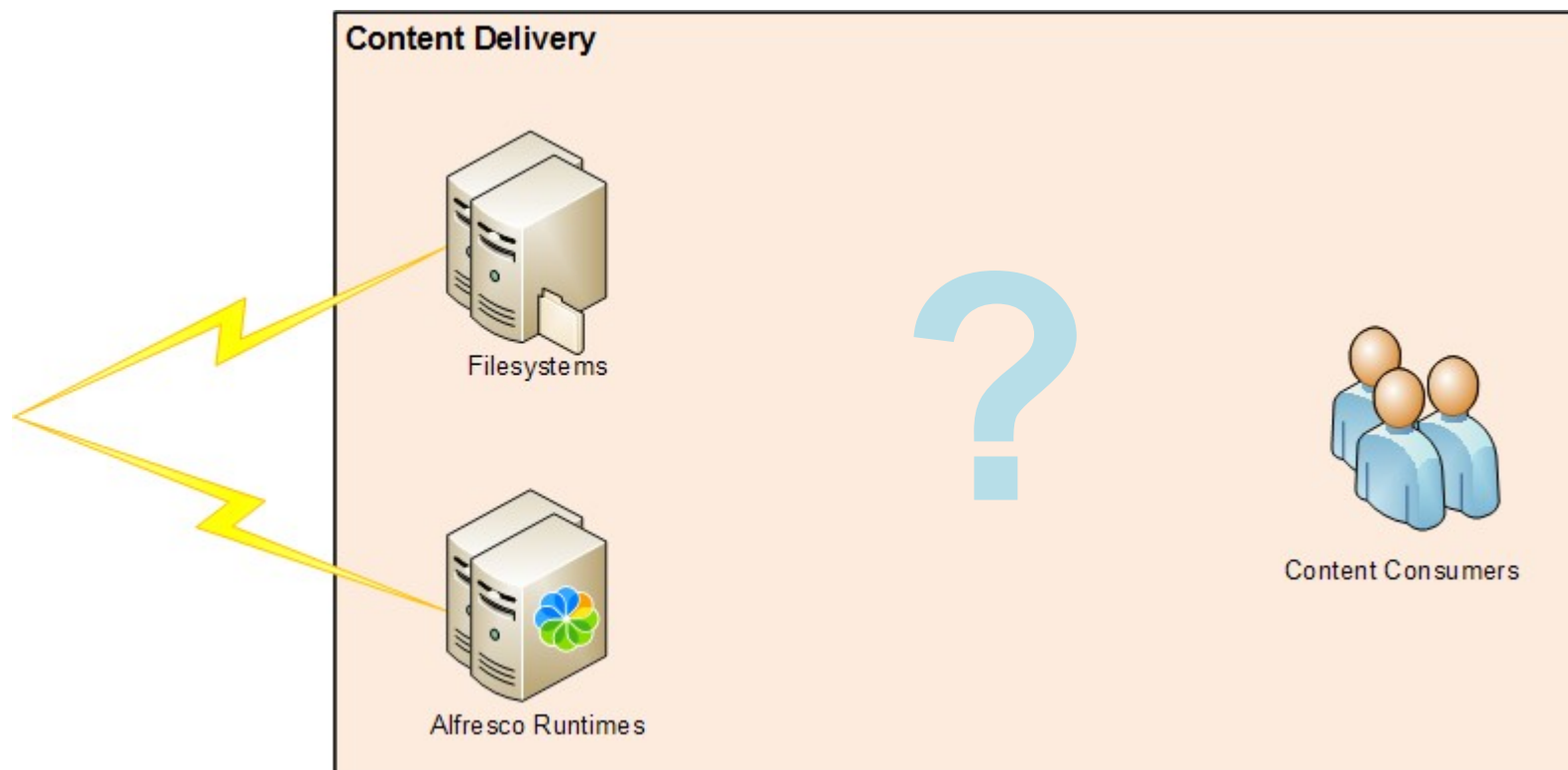
The image shows the Alfresco Enterprise web interface in a Mozilla Firefox browser window, with the URL `http://localhost:8080/alfresco/faces/jsp/wcm/browse-website.jsp`. The interface includes a left-hand navigation pane with a tree view showing the hierarchy: Company Home > Web Projects > test. The main content area displays the 'Website 'test' sandbox 'admin'' view, showing a 'ROOT' folder and a list of files: 'Test HTML Block.html' and 'Test HTML Block.xml'.

Overlaid on the bottom right is a Windows Explorer window showing the filesystem projection of the same content. The address bar shows the path: `DATA > www > avm_webapps > ROOT`. The file list shows:

Name	Type	Size
Test HTML Block.html	Firefox Document	1 KB
Test HTML Block.xml	XML File	1 KB

The Windows Explorer window also shows a 'Folders' pane on the left with a tree view of the filesystem structure, including 'Network', 'WOLGAN', 'wolgan_a', 'Alfresco', 'AVM', 'test', 'test--admin', 'HEAD', 'DATA', 'www', 'avm_webapps', 'ROOT', and 'METADATA'. The status bar at the bottom indicates '2 items', 'Offline status: Online', and 'Offline availability: Not available'.







2 Options - Static and Dynamic

The single most significant design decision.

This decision impacts virtually everything else in the implementation:

	Static – the “Bake” model	Dynamic – the “Fry” model
Delivery technology	Web servers	Application servers
Page compositing	Submission time	Request time
Content deployed to	Filesystem	Alfresco Runtime
Personalization	Limited	Unlimited
Performance	Ultimate	Less than the “bake” model
Application developer skill-sets	Freemarker, XSLT, XSLT-FO	Any web technology



Alfresco Runtimes Explained

Runtime – Alfresco repository installed in the production web environment.

Two primary usages:

3. Search engine

- Applicable for both static and dynamic models

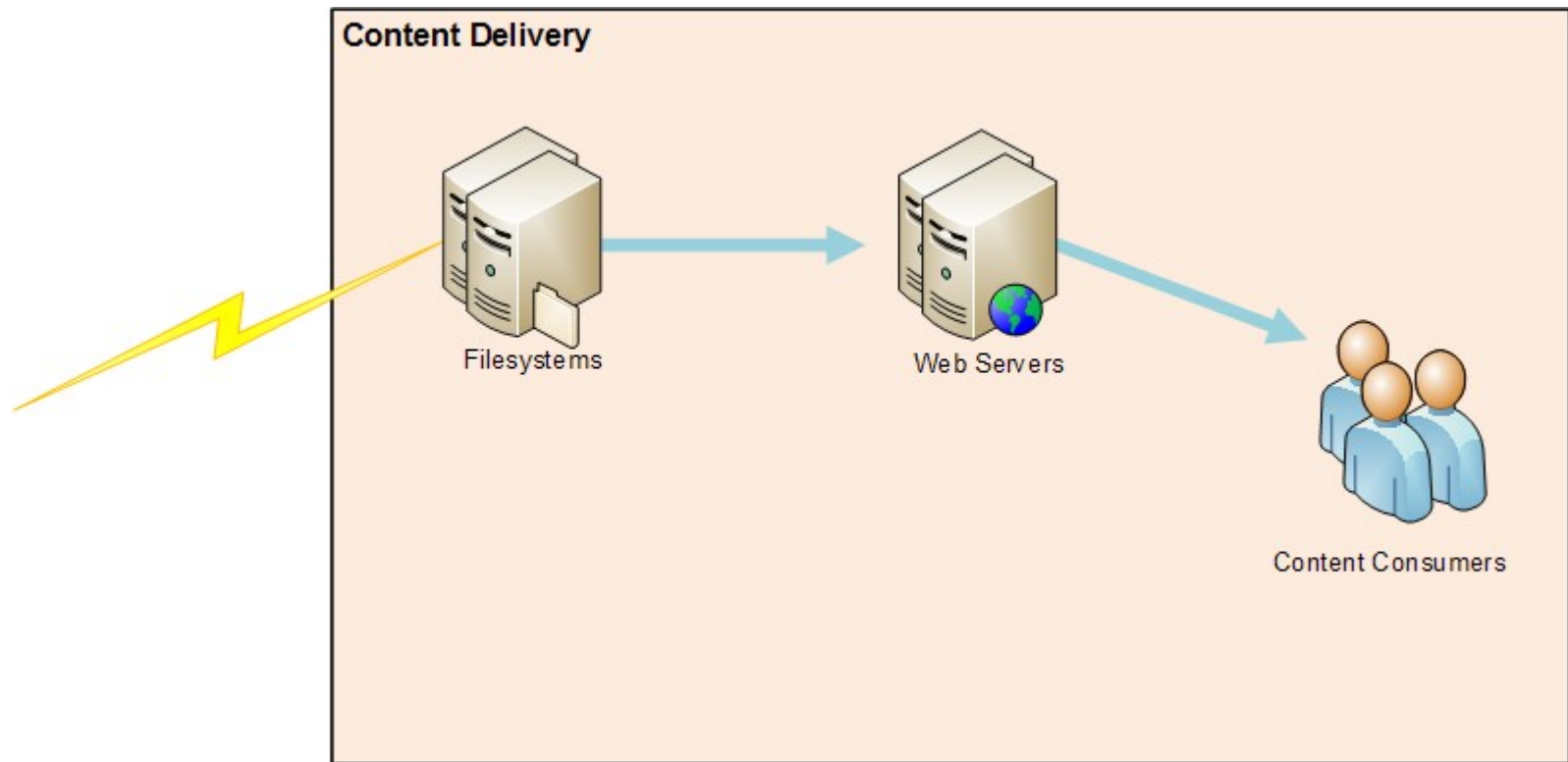
4. Runtime content repository

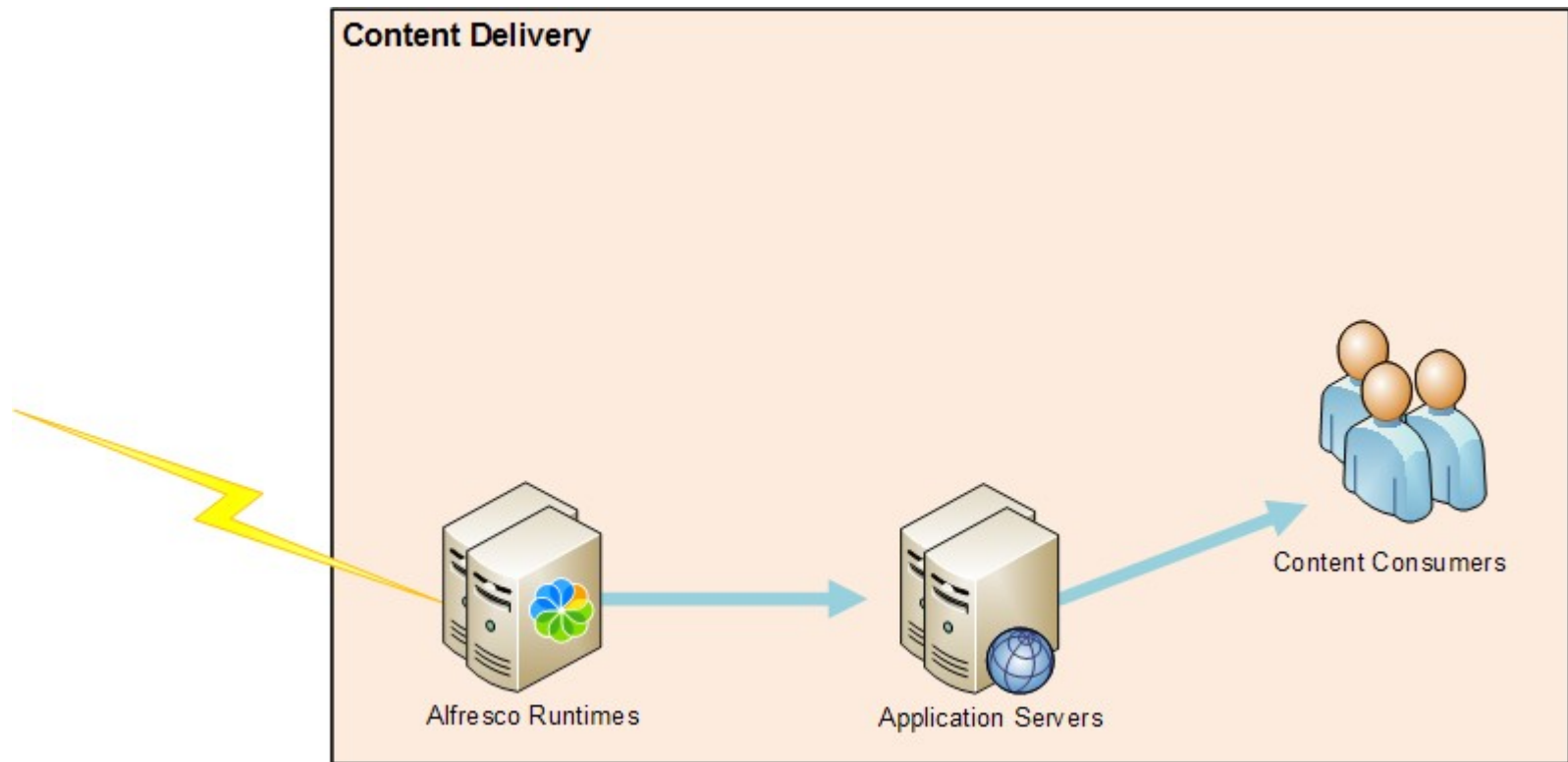
- Queried by the web application
- Content exposed through REST APIs (Web Scripts)
- Web Scripts can be invoked from any dynamic web application, regardless of the technology - .NET, Ruby on Rails, PHP, Python, etc.

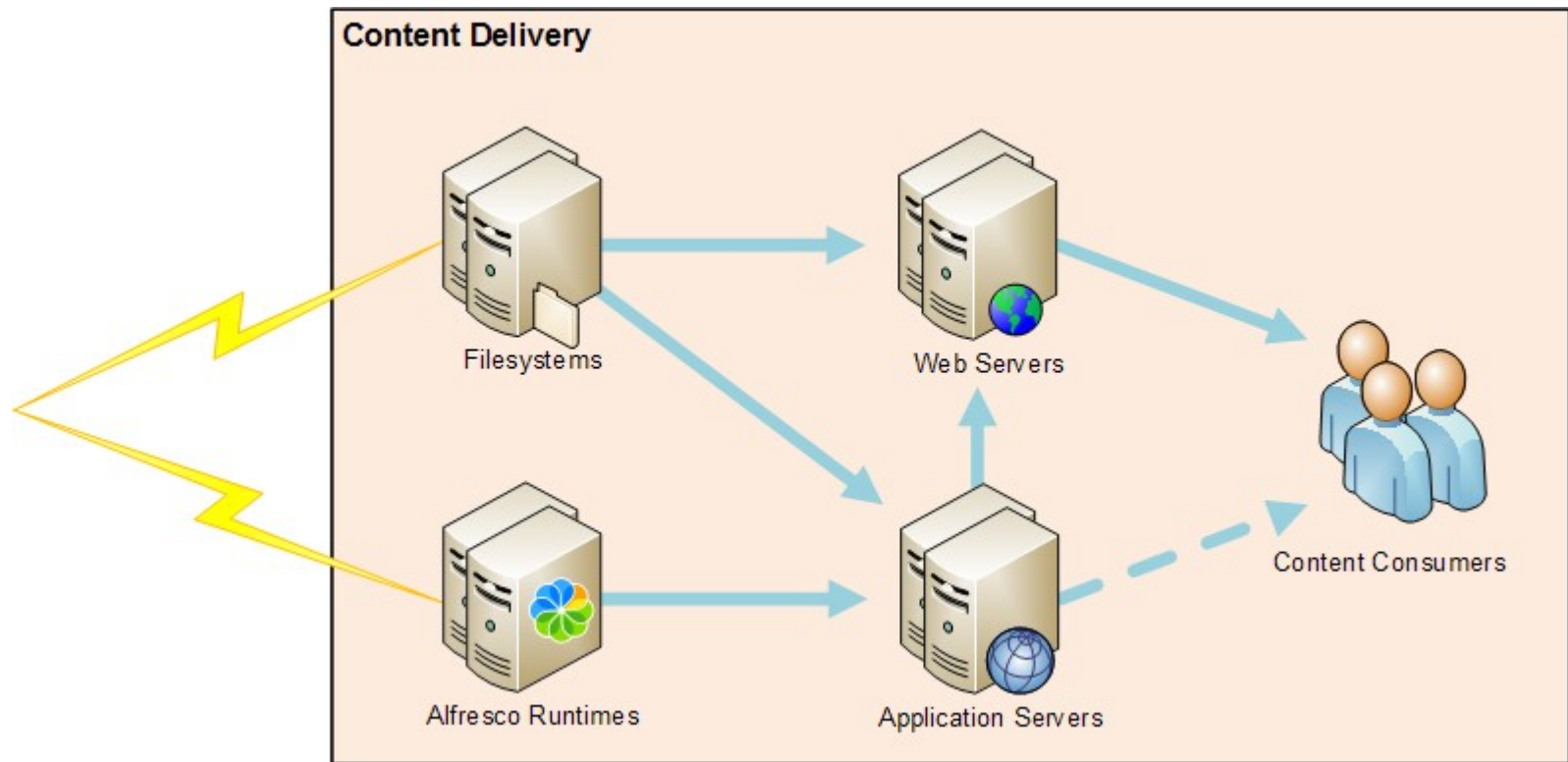


3rd Option – A Hybrid Model

- Design the web architecture to support the dynamic model.
- Leverage the static model wherever possible (eg. pre-generate the HTML for components that rarely vary between pages).
- Deploy content to both filesystems and Alfresco runtimes
- Choose a page composition model:
 - "inside out" – each page is dynamic and includes all page components dynamically (regardless of whether those components are static or dynamic)
 - "outside in" – each page is static HTML with static components already embedded, but dynamic components are included (eg. via server side includes)
 - The tradeoff between these two models is management complexity vs runtime performance.







	"Bake" Model	"Fry" Model
Alfresco WCM	✓	✓
Interwoven TeamSite	✓	✗
Vignette VCM	✗	✓



Further information?

- For more technical information, visit:
 - http://wiki.alfresco.com/wiki/Main_Page
- For general information see:
 - <http://www.alfresco.com>
 - Content Community

The screenshot shows the Alfresco website homepage. At the top, there is a navigation bar with links to 'Alfresco.com', 'Developers', 'Forums', 'Forge', 'Blogs', and 'Podcasts'. Below this is a search bar and a language selector. The main banner features the text 'Alfresco Enterprise Release 2.1 Now Available' with buttons for 'Download', 'Demonstrations', and 'More Details'. To the right of the banner is a sidebar with links to 'Online Trial', 'Screenshots', 'Download', and 'More Quick Links'. The 'More Quick Links' section is highlighted with a red box and contains links to 'Content Community', 'Developers', 'Documentation', 'Blogs', 'White Papers', 'Newsletters', 'Press Releases', 'We're Hiring!', and 'Open Source Barometer Survey'. Below the banner, there are three main sections: '1 Discover' with links to 'Screenshots', 'Presentations', and 'Webinars'; '2 Try' with links to 'Hosted Trials', 'Enterprise Trials', and 'Community Downloads'; and '3 Buy' with links to 'Training', 'Consulting', and 'Subscriptions'. At the bottom, there are three promotional boxes: 'Webinar' for 'Alfresco 2.1 WebScripts', 'Small Business? Want Alfresco?' with a 'RED HAT EXCHANGE' logo and 'NOW OPEN' text, and 'Alfresco Community Conferences' for 'New York and Paris November 2007' with a 'Register' button. The footer includes social media links for 'del.icio.us' and 'Diigo'.