Technology Whitepaper

Version 1.0

Overview

Nabu is a scalable enterprise level Digital Asset Management (DAM) framework. Built using JEE 5/JSF/AJAX, Nabu provides an extensible event based repository and out of the box features such as:

- Secured storage of assets with variable meta data. Securable at the asset level down to individual Active Directory Groups/Users.
- Full text indexing of meta data and assets.
- Complete asset lifecycle auditing.
- Event notifications and subscriptions.
- Versioning and file checkout.
- Automated ingestion and deployment.
- Execution of custom event and validation modules.

What is Nabu?

Digital Asset Management consists of tasks and decisions surrounding ingesting, annotating, cataloguing, securing, versioning, storage and retrieval of digital assets, such as documents, video, audio and images.

Nabu provides a clean flexible core system that out of the box addresses many of the day to day requirements of a DAM system. Nabu also provides seven points of customisation providing developers with a solid foundation on which to effectively adapt Nabu to an organisation's business requirements.

Why Nabu?

Many businesses and organisations are adopting DAM as a business strategy because managing digital assets presents unique challenges and requires solutions designed specifically to streamline the acquisition, storage and retrieval of the digital assets.

Nabu reduces the time and cost of content production, maximising the return on investment (ROI) from assets, allowing organisations to bring new products and services to market faster. Nabu's core design goal is to facilitate cost-effective, optimised management of assets across an organisation.

Core Functionality

Out of the box, Nabu provides a range of features common to all digital asset management requirements.

Security
Nabu currently supports two forms of authentication, Active Directory NTLM single sign on and database realm. Custom authentication can be plugged in as required.

All assets are securable down to individual groups and/or users. By default, asset types have default roles associated with them. These can optionally be configured for each asset by the asset's author.

Version Control
Each asset type can optionally have version control enabled. When modified, the asset's document and or meta data will be versioned as applicable.

Auditing
Full audit trails can be enabled for each asset type. Auditing includes created, updated (document and meta data), soft deleted and aggregated viewed and downloaded counts per user.

Full Text Indexing and Search
All asset meta data is automatically indexed for full text search. This works similarly to modern web search engines. Optionally, the content of the assets can also be full text indexed to increase searchability. The Nabu Indexer currently supports a range of document formats including MS Word, MS Excel, MS Powerpoint and PDF.

Nabu provides a simple search interface across all assets or filtered to asset type. Nabu also provides an advanced search feature allowing the user to search specific meta fields based on the selected asset type.

Meta Data
All assets have meta data associated to them. When setting up an asset type, the administrator specifies the meta data to be associated to the asset and the optional validation rules to be applied.

Spaces
Spaces are a means of hierarchically grouping and organising assets. Spaces can be secured to groups and individual users. Users can optionally share their spaces with other users.

Spaces and the space/asset relationships can store a customisable amount meta data. This provides a means of logically grouping assets with meta data specific to the instance of the space.

Notifications
Notifications allow users to subscribe to be notified when a specific event occurrence. For example, a user may subscribe to be notified when a new asset is added or updated within a particular asset type.

Developer API

In addition to the core functionality, Nabu provides an extensive developer API allowing Nabu to be tailored to an organisations requirement.

Loaders
The loader modules provide the core functionality to ingest digital assets. The basic digital asset ingestion has been taken care of whilst providing developers with the ability to execute custom code.

An example use of this would be to read meta data from XML or the asset files and store the additional meta data with the asset.

Targets
The target modules provide the core functionality to deploy assets to external systems. Again, the basic deployment requirements are already implemented for the developer and the developer is provided with a mechanism to execute custom code whilst the deployment occurs.

An example use of this would be to create/update data in an external database where the asset is being repurposed.

Events Actions
Events occur at various stages of an asset's lifecycle. Event Actions provides a flexible approach to managing assets by providing synchronous and asynchronous execution of custom Event Action classes.

Workflows
Workflows provide the developer with a means to configure and execute custom code throughout the life cycle of an asset.

An example use of this would be to implement a multi level document collaboration and approval workflow.

Action Views
Action Views allow the developer to configure and execute custom Action View classes for Space and Asset Detail screens. This allows the developer to fully configure the content, look and feel of these screens.

Validators
Validators provide a means to implement custom validation against inputted meta data.

An example use of this would be to implement a Validator to talk to an external database to validate input for a specific field.

Custom UI Controls
Developers can create their own custom JSF components and associate them to be used for meta input.

Custom UI Workflows
Developers can also implement their own custom screens and associate them with specific asset types to be presented to the user at any step in the asset creation and modification process.

For example, this could be used to collect further information for use in an external system.

Remote Content Serving API
The Remote Content Serving API provides a means to serve assets from a remote server. This can be used to securely provide asset downloads from another internal system or even from an authorized 3rd party.

Developers are provided with hooks to implement application specific code for content authorisation and successful download.

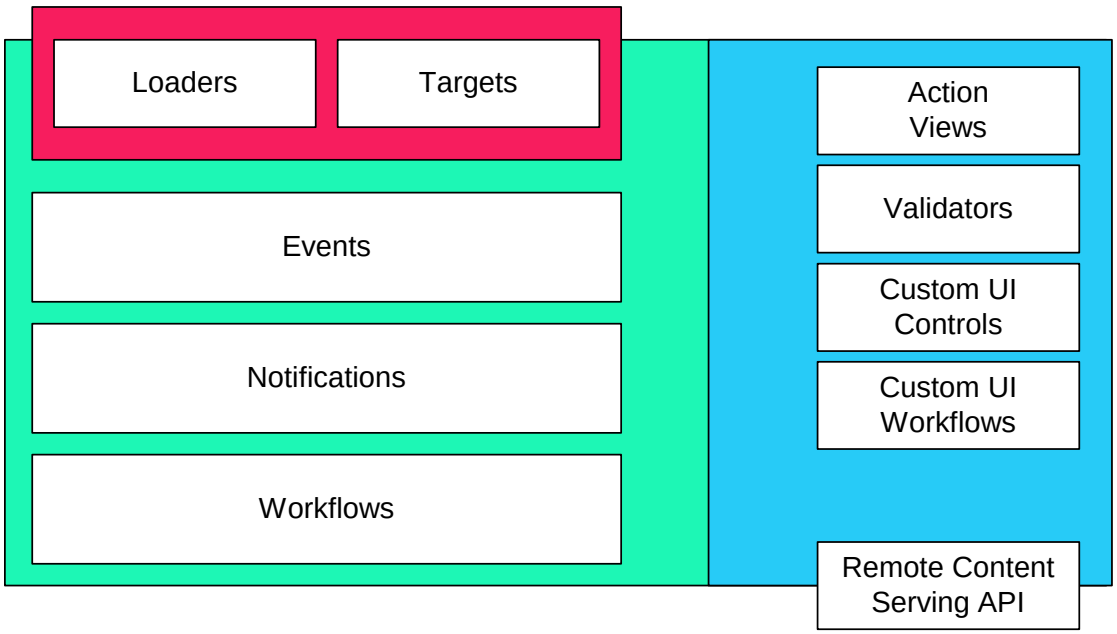

Figure 1.0 – Nabu Developer API Stack

Underlying Technologies

Nabu is built using Java Enterprise Edition 5, Java Server Faces and AJAX. Nabu utilizes the following open source technologies:

- Hibernate
- Richfaces
- Lucene
- Apache POI
- PDFBox
- ImageMagick

Vision

Nabu is an ongoing development effort by Bizresolve. By strategically aligning ourselves with our clients and partners, we aim to solidify Nabu's core architecture whilst building out a suite of custom modules to make available to our clients.

Nabu has been successfully implemented on the bandit.fm project in the capacity of a digital aggregation and delivery platform. The solution involves ingesting terabytes of media and meta data consisting of asset information, video, audio and images. Nabu securely houses the content and automatically deploys web formatted content to the main application's media cache.

About Bizresolve

Bizresolve is an Australian Software Development and Managed Services company that provides innovative and scalable technical solutions. Using industry best practices, Bizresolve deliver business value to our clients, on-time and on-budget, increasing the return of their IT investments.

Bizresolve engages its clients on a long term basis looking to build solid and lasting relationships centred on shared understanding of business requirements and the provisioning of strategic and informed technical advice and tactical support.

Bizresolve developed and maintain an award winning Australian based mobile infrastructure consisting of Mobile Messaging, White Label Websites and Content Management. Bizresolve have also developed and maintain Nabu, a flexible Digital Asset Management Framework.

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