Kevin Bates

Software Engineer

March 4, 2013

Product Implementation Training (PIT)

IBM FileNet Content Manager 5.2.0
Thumbnails

IBM®

Introduction

- Course Overview
  - Components of Thumbnail generation, what's involved and how to best leverage the functionality

- Target Audience:
  - P8 Administrators, Application Developers, Support Personnel

- Prerequisites:
  - P8 Administration

- Version Release Date March 15, 2013

Course Objectives

After this course you will be able to:

- Describe what functionality for thumbnail support is provided and how to leverage that functionality

- Perform the operations necessary to create thumbnails

- Explain the various aspects involved in automatic and manual thumbnail generation

IBM®

Course Roadmap

➔ **Thumbnail Fundamentals**

- • General Overview

- • Object Model

- • Installation and Configuration

– Demonstration

– Course Summary

IBM

Thumbnail Fundamentals: General Overview

- **Use Case**
  - *I as a user, need to be able to examine a document thumbnail before performing an action on it to understand if it is the right document. This may be on an individual document or a list of documents*

- **Design:**
  - Thumbnails are persisted in a new table in the ObjectStore. They can be easily retrieved in a query or folder browse operation, or navigated to through a Document property
  - ThumbnailSubscription can be used to automatically generate a new thumbnail on check-in
  - ThumbnailRequests are written to a table – monitored by the queue sweep framework – enabling the sweep handler to create a thumbnail asynchronously
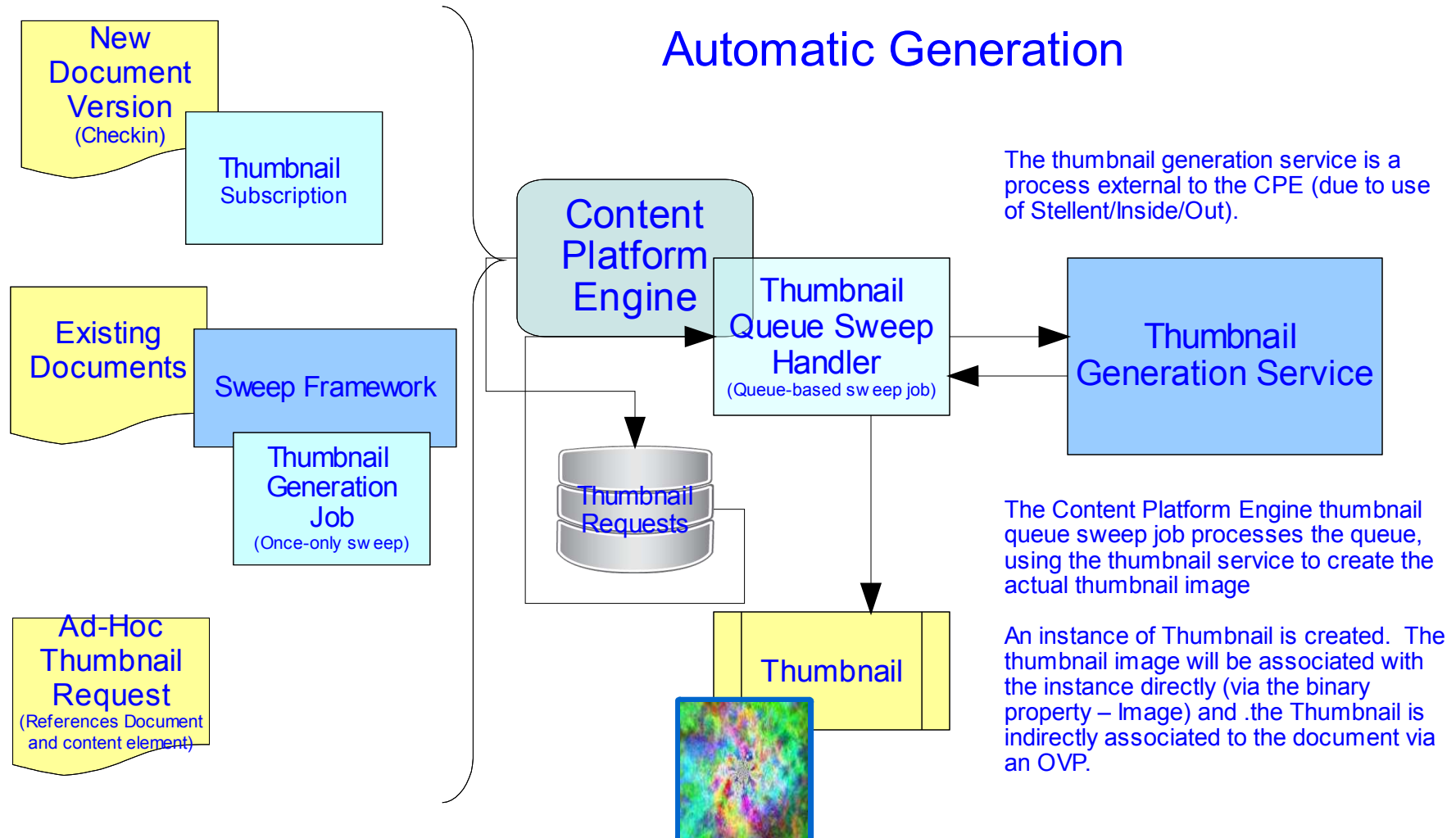
Thumbnail Fundamentals: General Overview

Design (continued):

- Four ways to create thumbnails

    1) Create your own thumbnail and associate to document (Bring Your Own Thumbnail)

    2) User may create specific thumbnail generation request (useful when creating thumbnails for other content elements)

    3) Document check-in subscription – automatically queues up thumbnail request (fires on released versions only by default)

    4) Sweep job can be created to associate thumbnails to existing documents based on sweep criteria

Thumbnail Fundamentals: General Overview

Automatic Generation

New Document Version (Checkin)

Thumbnail Subscription

Existing Documents

Sweep Framework

Thumbnail Generation Job (Once-only sweep)

Ad-Hoc Thumbnail Request (References Document and content element)

Content Platform Engine

Thumbnail Queue Sweep Handler (Queue-based sweep job)

Thumbnail Requests

Thumbnail Generation Service

Thumbnail

The thumbnail generation service is a process external to the CPE (due to use of Stellent/Inside/Out).

The Content Platform Engine thumbnail queue sweep job processes the queue, using the thumbnail service to create the actual thumbnail image

An instance of Thumbnail is created. The thumbnail image will be associated with the instance directly (via the binary property – Image) and .the Thumbnail is indirectly associated to the document via an OVP.

Thumbnail Fundamentals: Object Model

- **CmThumbnail**
    - Represents the thumbnail object instance
        - Document OVP property points to corresponding Document
        - ElementSequenceNumber (loosely) references which content element
    - IsSystemGenerated boolean indicates whether the thumbnail was generated by system (true) or user provided it (false).
        - **Any user-provided thumbnails will not be overwritten by system!**
    - Bring Your Own Thumbnails (aka, user-provided) can be useful when
        - Automatic options aren't appropriate
        - May want multiple thumbnails per content element (encode ESN)
    - Image property holds the thumbnail
        - DB2 table optimized for 16KB images

Thumbnail Fundamentals: Object Model

- **Document.CmThumbnails**
  - Enumeration of associated thumbnails – allows for easy image acquisition
    - Due to image sizes, applications should avoid retrieving this property's value (via PropertyFilter or accidental navigation) unless absolutely needed

- **CmThumbnailRequest**
  - Represents a request to generate a thumbnail for a specified document and content element
  - Custom root subclass of CmAbstractQueueEntry
    - Queue sweep framework automatically understands how to deal with entries via ThumbnailRequestSweep instance
  - Manual persistence enables ad-hoc generation for subsequent (non-first) content elements

Thumbnail Fundamentals: Object Model

- **CmThumbnailRequestSweep**
  - Subclass of CmQueueSweep
    - Ties into queue sweep framework working off ThumbnailRequest table
  - Contains image configuration properties
    - ImageSize (default = Medium, others: Small, Large)
    - ImageFormat (default = JPEG, others: GIF, PNG)
    - ImageColor (default = Color, others: BlackAndWhite, GrayScale)
      - Note: INSO Thumbnail generator only supports Color – so this option is essentially ingored for this release

- **CmThumbnailGenerationJob**
  - Subclass of CmSweepJob
    - Used to sweep existing documents to add thumbnails to each based on filter expression results

Thumbnail Fundamentals: Installation and Configuration

- Object Model is built into Content Engine

- Out-of-the-box functionality …
  - Bring Your Own Thumbnails – can be persisted directly
  - No automatic generation support

- To trigger auto-generation – install the Thumbnail Extensions AddOn
  - Note: Installation will automatically enable thumbnail generation on any document that is subsequently checked in as a released version, existing documents are not affected
  - Not recommended for high-volume ingestion scenarios

Thumbnail Fundamentals: Installation and Configuration

- **Thumbnail Extensions AddOn provides three things...**

  1) Thumbnail Generation Event Action instance

    - References the built-in generation handler used by both subscription and sweep processing

  2) Default Thumbnail Generation Subscription instance

    - Check-in of **released** document will trigger thumbnail generation

    - FilterExpression

```
VersionStatus = 1 AND NOT MimeType IN ('application/iccxit','application/x-filenet-rm-
    electronicrecord','application/x-filenet-rm-emailrecord','application/x-filenet-rm-
    physicalrecord')
```

    - Enabled by default

  1) Thumbnail Request Sweep instance

    - Queue sweep handler feeds thumbnail generation request to generation service and persists generated image

    - Indicates image characteristics (format, size, color)

    - Enabled by default

Thumbnail Fundamentals: Installation and Configuration

- Auto-generation (via sweep job or subscription) operates on FIRST content element only
  - If thumbnails are desired for other content elements create ThumbnailRequest manually since any content element can be specified
- Limitation – single thumbnail per content element
  - This could be circumvented via user-provided thumbnails and encoding of ElementSequenceNumber
- Limitation – difficult to change image formats for various content elements
  - One size fits all model
  - Again, user-provided thumbnails would be the workaround
- Performance – Thumbnail generation can be highly resource intensive
  - If customers find the cost is too high, they should disable any thumbnail subscriptions or generation jobs

IBM

Course Roadmap

–   Thumbnail Fundamentals

   • General Overview

   • Object Model

   • Installation and Configuration

➔   Demonstration

–   Course Summary

Demonstration

- *On ObjectStore without Thumbnail Extensions installed, show 3 existing documents*
  - *Create a user-provided Thumbnail for one*
  - *Leave the second and third alone*
  - *Refresh folder – show how first document has a thumbnail*
- *Install Thumbnail Extensions AddOn*
  - *Create Thumbnail Generation Job – show how two documents had thumbnails generated, while document w/ BYOT did not*
  - *Create manual thumbnail requests for additional content elements*
  - *Create new document – show how thumbnail is generated via subscription*

Course Roadmap

- – Thumbnail Fundamentals
    - General Overview
    - Object Model
    - Installation and Configuration
- – Demonstration
- ➔ Course Summary

IBM

Course Summary

You have completed this course and can:

- Describe what functionality for thumbnail support is provided and how to leverage that functionality
  - *Auto-generation of first content elements via subscription or generation job*
  - *Auto-generation of any content element via manual ThumbnailRequest*
  - *BYOT – user-provided thumbnails*
- Perform the operations necessary to create thumbnails
  - *See previous*
- Explain the various aspects involved in automatic and manual thumbnail generation
  - *Automatic generation – first content element*
  - *Manual generation – any content element*
  - *Manual creation – can enable multiple per element*

Product Help/Documentation/Resources

- **Content Engine Java and .NET Developer's Guide**
  - Thumbnail Concepts

    http://pic.dhe.ibm.com/infocenter/p8docs/v5r2m0/topic/com.ibm.p8.ce.dev.ce.doc/thumbnail_concepts.htm

  - Working With Thumbnails

    http://pic.dhe.ibm.com/infocenter/p8docs/v5r2m0/topic/com.ibm.p8.ce.dev.ce.doc/thumbnail_procedures.htm

- **Administering Content Platform Engine**
  - Creating a thumbnail generation job sweep

    http://pic.dhe.ibm.com/infocenter/p8docs/v5r2m0/topic/com.ibm.p8.ce.admin.tasks.doc/p8pcc164.htm

- **Tuning IBM FileNet Content Platform Engine**
  - Temporary directory location for improving thumbnail sweep performance

    http://pic.dhe.ibm.com/infocenter/p8docs/v5r2m0/topic/com.ibm.p8.performance.doc/p8ppt309.htm

  Note: Links will work at eGA (3/15/2013); before then, replace http://pic.dhe.ibm.com/infocenter/p8docs/v5r2m0 with http://cmfogbert.usca.ibm.com:7777/p8ic520 to use an internal InfoCenter