



technology services group

Portal Upload Migration Application (PUMA) Portal Search and Retrieval Application

Case Study

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Introduction

Purpose

This case study details Technology Services Group's Portal Upload Migration Application (PUMA) and the Portal Search and Retrieval application.

About the PUMA and Portal

Technology Services Group's Portal Upload Migration Application and the Portal Search and Retrieval Application work together to provide users with quick and secure access to a current 'snapshot' of a production Documentum Repository. The PUMA continuously runs and pulls documents and associated metadata from the Documentum Repository and places the content into another secure database, ensuring business continuity at all times. The Portal Search and Retrieval Application provides business users with an extremely fast and secure method of accessing documents from a production database. Users are able to search on any number of criteria, and see results quickly. Users are able to view the content of the documents and see any associated metadata.

System Overview

The PUMA and Portal have been used by large pharmaceutical companies as a way to provide business users with a fast and secure way of accessing FDA regulated documents. These documents must be accessible at all times. When documents reach certain lifecycle states they must also be removed from the portal within a given timeframe to ensure business continuity.

Benefits of the PUMA

The Portal Upload Migration Application serves a Production Repository failsafe. In the event the Production Repository experiences technical malfunction, users will still have access to the vital production data before the crash. This will allow the business to stay compliant with FDA regulations while the production problems are resolved.

The PUMA also severs the tie from the Documentum Repository. All content and metadata is stored in two custom Oracle tables. This allows for much faster access times, and increased productivity. The PUMA can be customized to only migrate certain document types, statuses, versions, or any combination of criteria. This allows the business to streamline the data that is made accessible to the portal users.

Benefits of the Portal Search and Retrieval Application

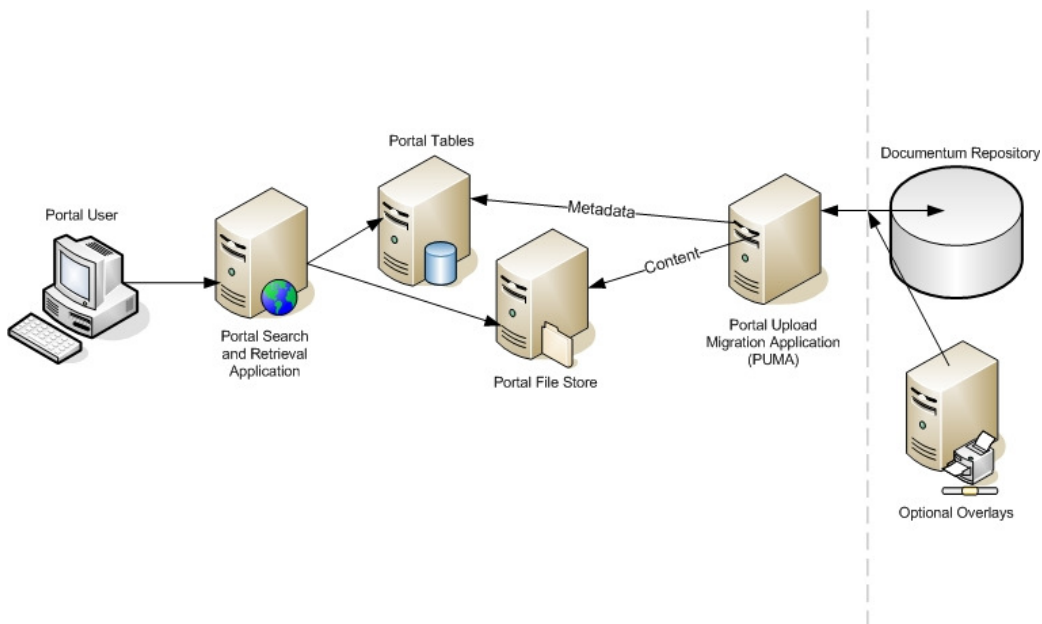
- **Fast Access** - The Portal Search and Retrieval Application gives business users fast access to a view of production data. Users can perform custom searches based on any number of criteria. If the user knows the name of a document, or even a partial title, the search results will return all matches.



- **Simplified Searching** - A simple searching interface reduces the training costs associated with Documentum's Webtop. Customized search queries are optimized to ensure quick search result returns.
- **Robust Search Results** - All search results can be quickly sorted, paginated and even exported to excel for further evaluation. Search results can even be limited by the business to prevent strain the production databases.
- **Customized Search** - Every user has the ability to customize how search results are displayed. The user can specify which attributes they would like to see, and all future searches will reflect these choices. The user can easily change these settings on the fly.
- **User Security** - The business can define user roles and access levels depending on their needs. Users have permissions that can be setup to mimic ACLs in Documentum. Administrators have the ability to add users, delete users and even change a user's permissions. New users can be added to the Portal without having to purchase additional licenses from Documentum. This is ideal for users who only use Documentum to view content.
- **Audit Capabilities** - The Portal Application also provides auditing capabilities. Administrative users can see documents views and document prints from within the application.

High-level Architecture

This diagram shows the common architecture of a PUMA and Portal setup. Content that has met certain business rules (i.e. Document Status) is pulled by the Puma from the Documentum Repository, at which point any overlays (i.e. PDFAqua) can be applied. The Puma can run at a set interval defined by the business (i.e. every three minutes). The PUMA writes the associated metadata to a database server, and transfers the content to a file store server. The authorized portal user logs into the Portal Search and Retrieval Application and can see content they have privileges to view.



Portal Database Architecture

Documentum's database architecture was created from a document management perspective. Every document type is a series of multiple tables all joined together by a common `r_object_id`. This design is not conducive to quick search and retrievals.

The PUMA flattens these very complex tables into a single table. When the PUMA runs, complex Documentum queries are executed and the necessary metadata is retrieved from each associated table. Then a single row is added to the `DOCUMENT_R_S` table (which the Portal web application uses for its searches and displays). The Portal Search and Retrieval Application can then execute a single SQL statement against one simple database table.

Metadata (DOCUMENT_R_S)

The metadata for each document published to the Portal is stored as a single row in the `DOCUMENT_R_S` table.

<i>Column</i>	Datatype
A_WEBC_URL	VARCHAR2(2000)
I_POSITION	VARCHAR2(4000)
OBJECT_NAME	VARCHAR2(2000)
R_OBJECT_ID	VARCHAR2(16)
I_CHRONICLE_ID	VARCHAR2(16)
R_OBJECT_TYPE	VARCHAR2(50)
AUTHOR	VARCHAR2(255)
TYPE_DESCRIPTION	VARCHAR2(255)
TITLE	VARCHAR2(2000)
R_CREATION_DATE	DATE
APPROVAL_DATE	DATE
EFFECTIVE_DATE	DATE
PRODUCT_NAME	VARCHAR2(255)
MIN_ACCESS	INTEGER
OWNER_DEPARTMENT	VARCHAR2(255)
OWNER_FUNCTIONALAREA	VARCHAR2(255)
OWNER_SITE	VARCHAR2(255)
A_STATUS	VARCHAR2(50)
OWNER_NAME	VARCHAR2(255)
I_FULL_FORMAT	VARCHAR2(50)
AFFECTED_SITES	VARCHAR2(4000)
R_VERSION_LABEL	VARCHAR2(50)

Table 1: DOCUMENT_R_S



Webtop vs. Portal Search

Portal Search & Retrieval

The Portal Application consists of a Search screen and a Document Details screen.

- Searches can be quickly executed from one page
- Display Options can be configured on the fly and are saved for each individual user.
- Sorting and Pagination can be performed without re-executing the search.
- Document Details page contains all relevant document information.
- Document Content is displayed from within the browser.

OneSource Portal Home

Welcome User, please select a document or perform a search query.

Search Results

Displaying 1 - 10 of 118 documents 5 items Export

Document Status Key

- Approved
- Effective
- Superseded

Number	Title	Type	Author/CR Owner	Division	Status	Version
1.	PSGA-DOC-523	Installation and Performance Qualification	Change Request	John Doe	Site Services	Effective 1.0
2.	PSGA-DOC-750	Operational Qualification Addendum	Change Request	John Doe	Site Services	Effective 5.0
3.	PSGA-DOC-32398	Installation, Operational and Performance Qualification Addendum Protocol to add Agilent 7694...	Change Request	John Doe	Site Services	Effective 3.0
4.	PSGA-DOC-32398	Installation, Operational and Performance Qualification Addendum Protocol to add Agilent 7694...	Change Request	John Doe	Site Services	Approved 2.0
5.	PSGA-DOC-32398	Installation, Operational and Performance Qualification Addendum Protocol to add Agilent 7694...	Change Request	John Doe	Site Services	Superseded 1.0

OneSource Portal Document View

Document Details

Return Effective Print

Number: PSGA-DOC-32398
 Type: Master Form
 Title: Create Quality Info Record (QIR) in SAP for Manati Pharma (1500) for Trefinon Entrapment because of a new vendor order address.
 Author/CR Owner: John Doe
 Division: Customer Service
 Site/COE: Rantan
 Functional Area: Quality Assurance
 Affected Sites: Birgewater
 Product Name: Tylenol
 Creation Date: 10/17/2004
 Effective Date: 11/04/2004
 Department: Sourcing
 Status: Effective
 Version: 1.0
 Material Number: 1030303003

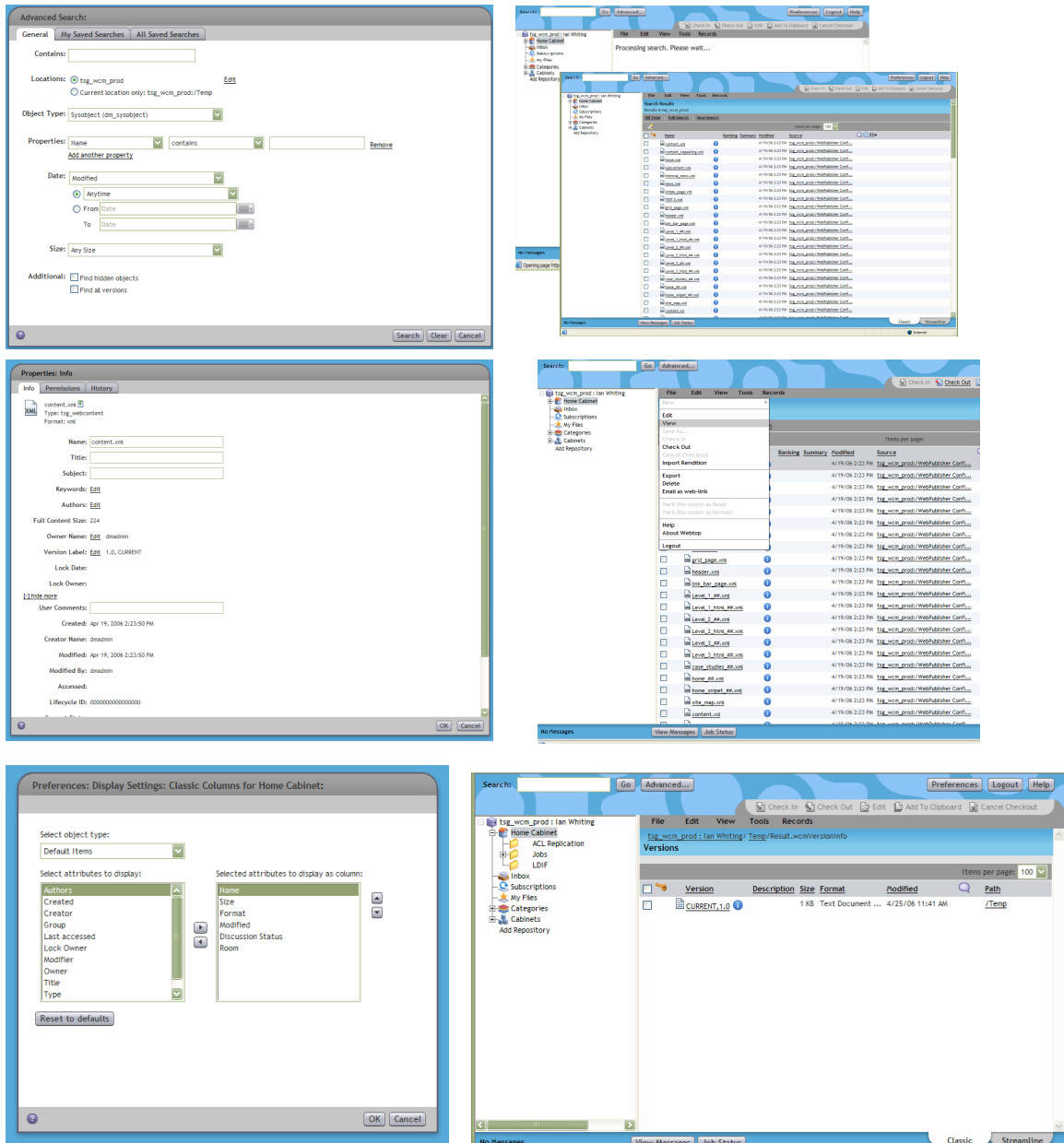
MAY CONTAIN
 MULTIPLE P.O.'S
 ON SKID



Documentum Webtop Comparison

Within Documentum Webtop, searching is built as a “one size fits all” application. By being a generic tool, users are walked through the process of developing a query by choosing document types, attributes, expressions and values. Interfaces like the Portal Search and Retrieval interface simplify the process by presenting default document types and expressions (AND, Equal) to simplify the user experience. For this reason, developing a simplified searching interface is a common customization to Webtop.

For reference, the Documentum Webtop screens are presented below.



Some specific limitations with Documentum Webtop search as compared to the Portal Search and Retrieval application include:

- Advance Searches must be done from an Advanced Search page.
- Display Options cannot be configured on the fly and every time a user performs a search they must redefine which attributes are displayed.
- Sorting and Pagination cannot be performed without re-executing the query.
- Document Content is displayed outside of the browser.
- Document Versions are only displayed from another page.

Documentum Webtop Performance Comparison

Performance of the Portal Search and Retrieval Application when compared to Documentum Webtop can be divided into two distinct areas.

1. System Performance – Retrieval time (time from completing the search to seeing results) is greatly improved. This primarily due to the simplified database architecture within the Portal. These results will vary depending on document taxonomy and specific ACL configuration between Documentum installations. This

Data – Simple Query – 10,000 entries

- Webtop – 15-60 seconds
- Portal – sub second

2. User Performance – another evaluation point should include user statistics for how quickly the user can enter the query itself. Given the complicated nature of Documentum, the users typically spend at least two minutes configuring (or reconfiguring) the search. With the Portal, that timeframe is reduced to seconds.

