

# Content Services

Have you heard?

ECM from IBM has been  
reinvented

# Contents

Today, we will walk through all the new features that make FileNet a leading, modern and evolved content services platform. IBM continues to invest in content as a foundation for the Cloud Pak for Automation.

Look for key benefits to your organization.



Highlighted client benefits!

[Offering overview](#)

[Modern UI](#)

[Secure external collaboration](#)

[Building content applications](#)

[Cloud modernization](#)

[Intelligent content](#)

[Application connectors](#)

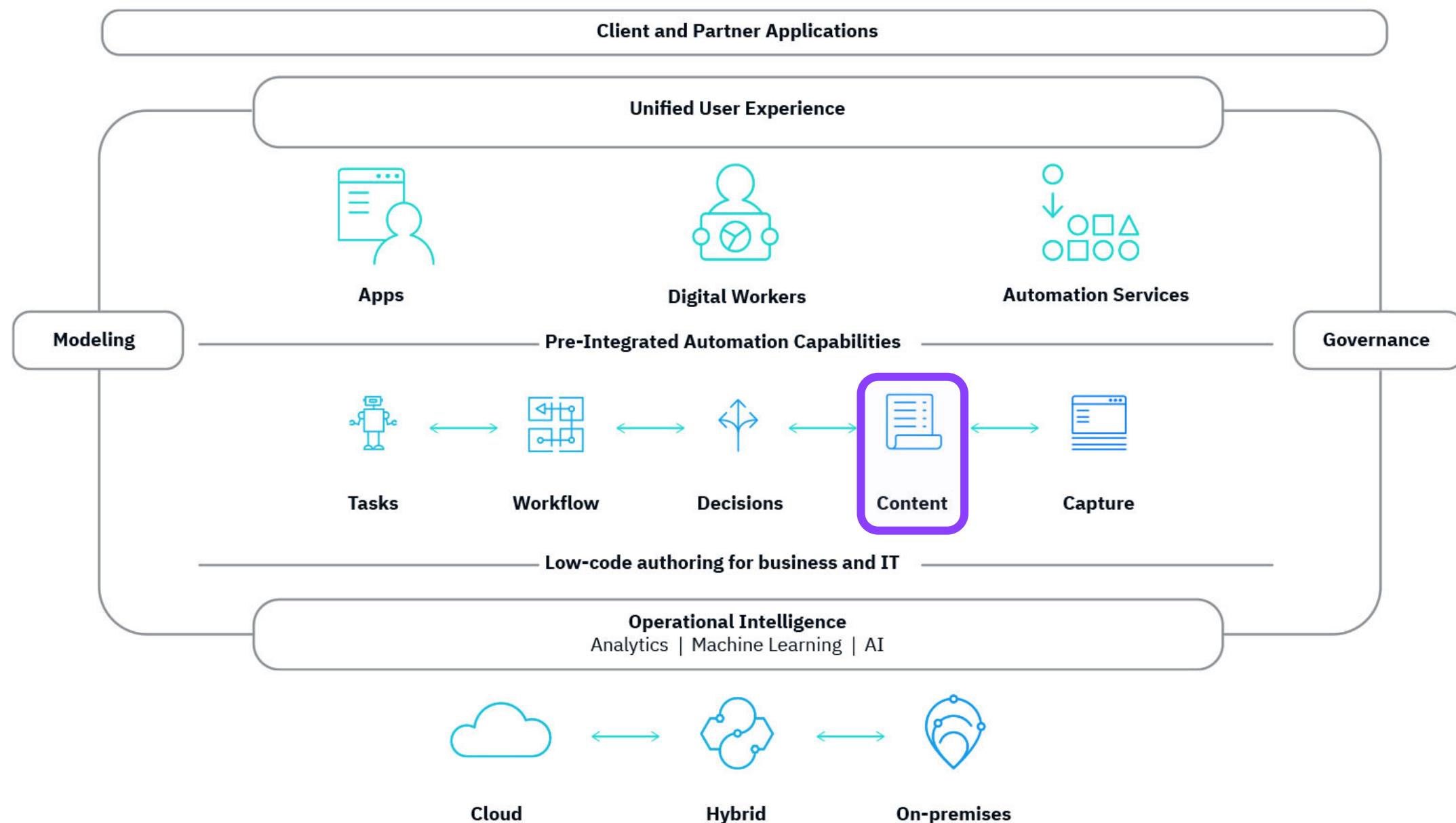
[Governance](#)

[Workflow](#)

[Support](#)

[SaaS](#)

# IBM Cloud Pak for Automation



# Offerings covered today

Core capability:  
In Cloud Pak or  
standalone



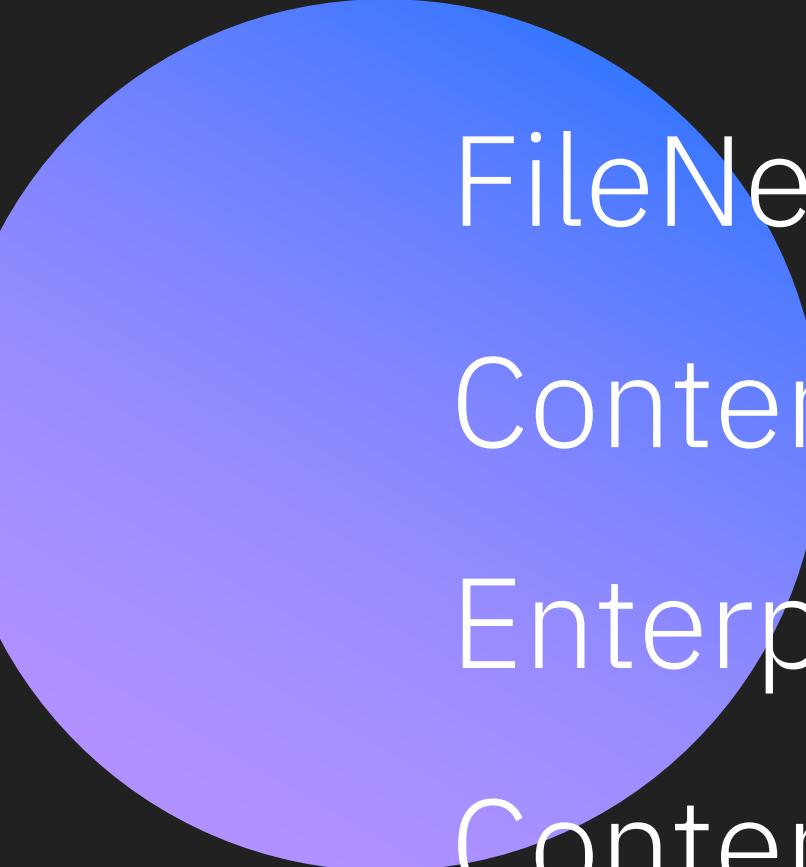
FileNet Content Manager  
(FNCM/P8)

Extended  
capabilities:  
In Cloud Pak or  
standalone



IBM Enterprise Records  
(IER)

IBM Content Collector  
(ICC)



# FileNet Content Manager

## Content Navigator

## Enterprise Records

## Content Collector

# 1H21 Content Services release highlights



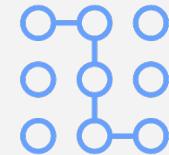
## FileNet P8

- Local groups make it easier to configure access for users provisioned with Identity Providers (IdPs)
- Use Business Automation Insights with FileNet on WebSphere App Server installs
- FileNet GraphQL API available for WebSphere App Server installs
- Additional cloud storage options with MS Azure file stores and Spectrum Protect Storage
- Additional LDAP directory types supported in container environments
- FileNet Deployment Manager now available on zLinux



## Navigator

- Send email using desktop email application, enabling address books, signatures, and more
- Improved cross repository search, with required/hidden/editable/read only search criteria, and more actions on search results
- More flexible searches - select any property when query across multiple document classes
- Improved usability with better default columns sizes in search and browse



## Connectors

- Access Content Navigator from Microsoft Teams
- Salesforce connector available in WebSphere App Server installs
- Connect to both Exchange online and Exchange on-premises from the same IBM Content Collector instance
- Export IBM Enterprise Records reports as .csv files



## SaaS

- PCI certification
- Edit documents from Content Navigator using Microsoft Office for the web

### Single Integrated Platform

Pre-integrated set of automation services including content, capture, workflow, RPA and more with single pricing metric for ease of pricing and consumption. Standardized architecture with common low / no-code build environment.

### AI-infused services

Automatically classify documents and extract content and metadata. Prioritize workflow tasks with 'next best action'. Use output of content and workflow events in data mining and data science applications

### Full set of document and governance services

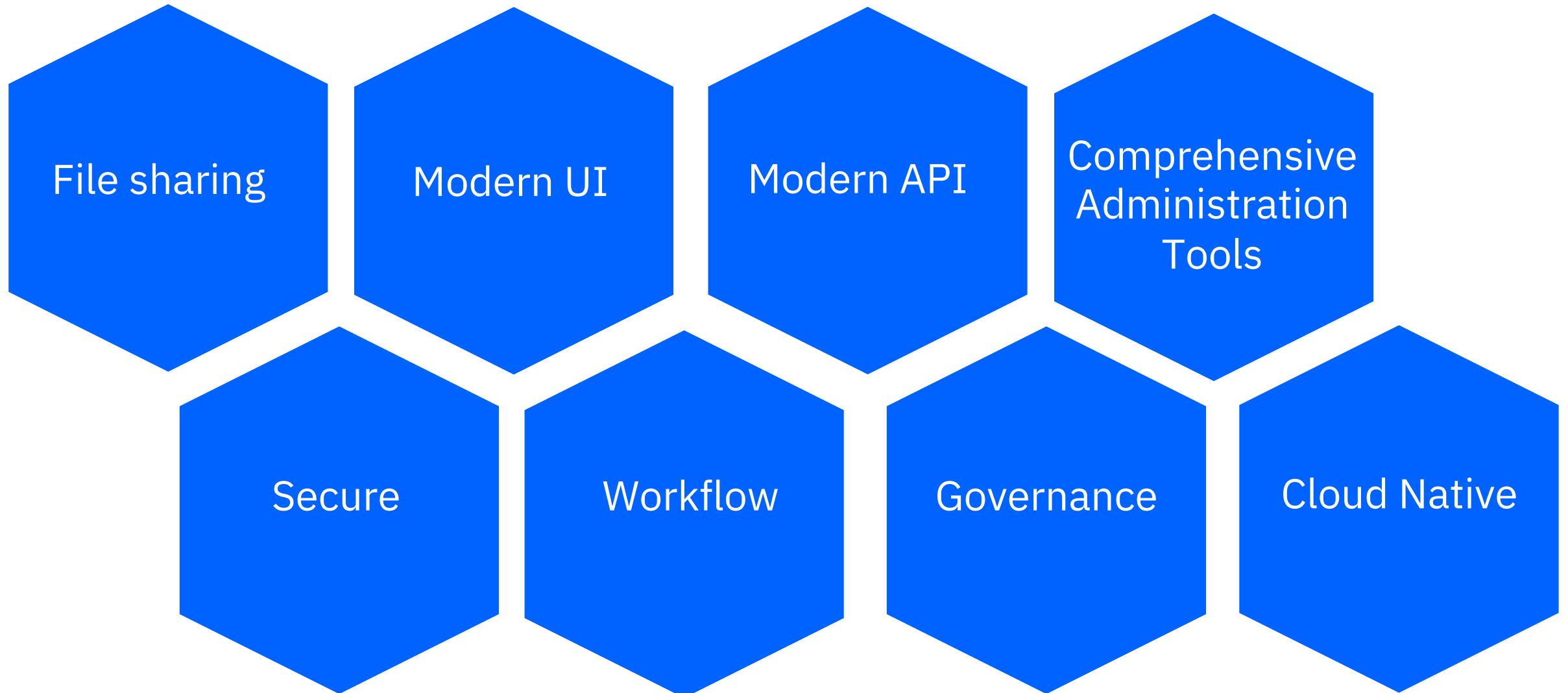
Stay compliant and mitigate risk with depth of search, granular security, compound document capabilities, DoD 5015.2 compliant records solutions with pre-defined workflows and reports, and extensive customization of the user experience

### Deploy anywhere

Maximum flexibility for accessing content with options spanning public, private, on-prem & hybrid, incl non-IBM clouds

Full set of IBM and Partner led-services from business solutions to modernization, implementation and migration services ensure powerful innovation and delightful customer experiences

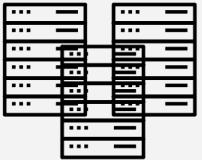
# Business Automation Content Services



The FileNet platform, managed by IBM. Relieve IT of managing infrastructure/upgrades with a public cloud option for your content services.

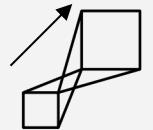
# Added benefits for FileNet clients on containers

## Traditional FileNet deployment



### Inefficient resource usage

Each FileNet module is deployed on a single server and then duplicated to another set of servers to eliminate a single point of failure resulting in a large amount of hardware deployed



### Provision max workloads with low utilization

Due to overhead, max anticipated workload is provisioned leading to overcapacity of hardware with low utilization



### Extra costs for capacity models

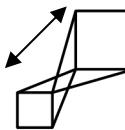
Extra hardware results in extra costs when on a capacity-based licensing model

## Containerized FileNet deployment



### No extra resources

Less need to deploy extra resources due to better isolation and avoidance of resource collisions (noisy neighbor).



### Quickly scale based on need

With minimal overhead, additional resources can be quickly added based on demand with sub-capacity licensing allowing for capacity to be borrowed for peak activity periods



### Lower costs for capacity models

Reduced hardware (up to 20%) leads to reduced costs for capacity-based licensing model

## Case study

# Large bank's experience metrics with OpenShift

Able to quickly deploy OpenShift with minimal impact to users

OpenShift Deploy Steps	Time to Complete / Hands-on Experience
Create OpenShift Cluster 1 Manually	7 working days
Post Cluster 1 Configuration	3 working days
Patch VMs + Upgrade OpenShift Clusters	1-2.5 hours with NO impact to users working on the cluster
Teardown & Rebuild Clusters 2 & 3 with Ansible Automation	1 hour
Post Cluster Configuration with Automation	1 hour
Day 2 Operations – Monitoring, Logging, Troubleshooting, Scaling, etc.	Easy to use and navigate, supported by out of the box dashboards

## Case study

# Large bank's experience for FileNet in the Cloud Pak

Reduced deployment time by 96%

FileNet Deploy Steps	Time to Complete (OpenShift/CP POC)	Time to Complete (Existing Client/Server)
Prerequisites: Create storage (2 YAML files)	1 min (2 commands)	3-4 hours
Deploy CP4A Kubernetes operator (5 YAML files)	1 min (5 commands)	2-3 hours
Modify Custom Resource YAML file (database, LDAP, component configurations, etc)	15 min	1 hour
Deploy CP4A/FileNet (Content Platform Engine & Content Navigator – 2 replicas each for HA)	7 min (1 command)	3-4 hours
Total Time	24 min (8 commands)	9-12 hours

\* Cluster Prerequisite: OpenShift project, user account, storage



# Product Highlights

# Cloud Pak for Business Automation: IBM FileNet Content Manager

- Business object management
- Application development and business objects
- Events and subscriptions
- Lifecycles
- Property and full-text search capabilities
- Bulk processing
- Versioning
- Classification
- Entry templates
- Managing XML content
- Content storage
- Import and export
- Retention and holds
- Customizable user interfaces
- Configure desktops
- Browse for content that is stored in a repository.
- Search for content by running a text search.
- Save document, folders, and other content as favourites.
- Edit documents.
- Add documents to content servers.
- Organize documents by creating folders and adding content to the folders.
- Use the version control rules that are set on the repository.
- Create teamspaces to provide a focused view of the content and objects in the repository.
- Video viewing

# Cloud Pak for Business Automation: IBM FileNet Content Manager

- Content Management Interoperability Services
- Content Platform Engine administration
- Content Platform Engine health check
- Content Platform Engine ping page
- FileNet Process Services ping page
- FileNet Process Services details page
- Content Search Services health check

# Cloud Pak for Business Automation: IBM FileNet Content Manager

## Content Platform Engine administration

The screenshot displays the IBM Administrative Console for Content Platform Engine interface, specifically for the CP4BADM domain. The left sidebar shows a navigation tree with categories like Client API Download, Global Configuration, Administration, Database Connections, External Repositories, Fixed Content Devices, Rendition Engine Connections, Replication Groups, Sites, Text Search Servers, Data Design, and Object Stores, each containing sub-items such as AEOS, BAWDOCS, BAWDOS, BAWTOS, and DEVOS1.

The main content area shows the domain configuration for CP4BADM. The General tab is selected, displaying the domain name (CP4BADM), ID (225E1953-7BDA-43E2-BAC7-BD789EE3AE16), and domain type (Standalone). Other tabs include Properties, Security, Directory Configuration, Key Management, Server Cache Subsystem, and Audit Subsystem.

A detailed view of the Database Connections section is shown in the bottom right, where the AEOS\_dbconnection is selected. The General tab here shows the display name (AEOS\_dbconnection), JNDI data source (AEOSDS), JNDI XA data source (AEOSDSXA), and site (Initial Site). Buttons for Save, Refresh, Actions, and Close are available.

# Cloud Pak for Business Automation: IBM FileNet Content Manager

## Content Platform Engine health check

IBM FileNet Content Manager

CE System Health

**CE Instance: [/FileNet/Engine]**

Location: Home

Domain: CP4BADM

- Global Configuration Database
- Directory Configurations: [1]
- PE Connection Points: [1]
- PE Isolated Regions: [1]
- Fixed Content Devices: [0]

Resources:

- Object Stores: [5]
- Storage Areas: [10]
- Content Cache Areas: [0]

Sites:

- Sites: [1]

## Content Platform Engine ping page

Content Engine Startup Context (Ping Page)	
Key	Value
Local Host	icp4adeploy-cpe-deploy-55b6864454-9nm98
Start Time	Thu Aug 05 03:11:42 UTC 2021
Product Name	P8 Content Platform Engine - 5.5.6.0
Build Version	ears-5.5.6-1-115
Build Components	Content Engine 5.5.6-1-29 Process Engine 5.5.6-1-30 ACCE 5.5.6-1-35 Client Download 5.5.6-1-57 .Net API 5.5.6-1-30 Deployment Manager 5.5.6-1-31 REST Provision 5.5.6-1-28 REST Registration 5.5.6-1-30
Startup Message	P8 Content Platform Engine Startup: 5.5.6.0 ears-5.5.6-1-115 Copyright IBM Corp. 2003, 2021 All rights reserved on icp4adeploy-cpe-deploy-55b6864454-9nm98
Operating System	Linux 4.18.0-193.60.2.el8_2.x86_64
Available Processors	1
Classpath	/opt/ibm/wlp/bin/tools/ws-server.jar:/opt/ibm/wlp/bin/tools/ws-javaagent.jar:/opt/ibm/wlp/bin/tools/ws-javaagent.jar
JDBC Driver	IBM Data Server Driver for JDBC and SQLJ 4.29.24
JVM	java.vm.vendor IBM Corporation java.vm.name IBM J9 VM java.runtime.version 8.0.6.20 - pxa6480sr6fp20-20201120_02(SR6 FP20) java.runtime.name Java(TM) SE Runtime Environment java.vm.version 2.9 java.vm.info JRE 1.8.0 Linux amd64-64-Bit Compressed References 20201102_458768 (JIT enabled, AOT enabled) OpenJ9 - 5b31a42 OMR - 6ad3a34 IBM - b7e48f4 java.fullversion 8.0.6.20 - pxa6480sr6fp20-20201120_02(SR6 FP20) JRE 1.8.0 Linux amd64-64-Bit Compressed References 20201102_458768 (JIT enabled, AOT enabled) OpenJ9 - 5b31a42 OMR - 6ad3a34 IBM - b7e48f4
Log File Location	/opt/ibm/wlp/usr/servers/defaultServer/FileNet/icp4adeploy-cpe-deploy-55b6864454-9nm98
Working Directory	/opt/ibm/wlp/usr/servers/defaultServer
J2EEUtil	com.filenet.apimpi.util.J2EEUtilWSL
Server Startup Context	System
Config Values	com.filenet.authentication.wsi.AuthTokenOrder oidc,oauth,ltpa com.filenet.gcd.ProductInstance /opt/ibm/wlp/usr/servers/defaultServer/workarea/org.eclipse.osgi/_76/data/cache/com.ibm.ws.app.manager_175/.cache/APP-INF/lib com.filenet.engine.DocumentationURL http://www.ibm.com/support/knowledgecenter/SSNW2F_5.5.0/ com.filenet.authentication.token.userid sso:ltpa com.filenet.gcd.JNDIXName FNGCDDXA com.filenet.gcd.ProductGuid 8364eb97647e4427b28c3fb0d53a451d com.filenet.authentication.wsi.AutoDetectAuthToken true com.filenet.gcd.JNDIName FNGCDDS com.filenet.gcd.LicenseModel FNCP.VPUNonProd

# Cloud Pak for Business Automation: IBM FileNet Content Manager

Content Search Services health check:

## **Snapshot of the following PCH counters for the previous 60 minutes (Refresh page to update):**

ObjectStore CBR Indexing Batch, Active Indexing Workers Avg - The number of active indexing workers found while dispatching index requests.

ObjectStore CBR Indexing Batch, Batch Duration Avg ms - The total duration of time it takes to process the batch.

ObjectStore CBR Indexing Batch, Batch Size Avg - The size counter of the text extraction batches.

ObjectStore CBR Indexing Batch, Content Storage Retrieval Avg ms - The amount of time spent setting up access to content storage.

ObjectStore CBR Indexing Batch, Indexing Duration Avg ms - The amount of time it takes to transfer text to the CBR engine and index the data.

ObjectStore CBR Indexing Batch, Objects Indexed Per-Minute - The computed rate index requests are being processed per-minute.

ObjectStore CBR Indexing Batch, Text Extraction Duration Avg ms - The amount of time spent performing text extraction for an indexing batch.

Server Based counters CSS Indexing Batch, Objects Indexed Per-Minute - The number of objects indexed for full-text search per minute as calculated by a simple moving average.

ObjectStore CBR Index Creates Submitted - Document indexing submit rate and total.

ObjectStore Document Creates - Document creation rate and total.

## **Server: IBM FileNet Content Platform Engine PVU Non Prod (icp4adeploy-cpe-deploy-55b6864454-9nm98)**

**None of the requested PCH counter values retrieved from IBM FileNet Content Platform Engine PVU Non Prod (icp4adeploy-cpe-deploy-55b6864454-9nm98) for the past 60 minutes.**

## **Server: IBM FileNet Content Platform Engine PVU Non Prod ICF PE (icp4adeploy-cpe-deploy-55b6864454-9nm98)**

**None of the requested PCH counter values retrieved from IBM FileNet Content Platform Engine PVU Non Prod ICF PE (icp4adeploy-cpe-deploy-55b6864454-9nm98) for the past 60 minutes.**

## **Snapshot of the following PCH counters for the previous 60 minutes (Refresh page to update):**

Batches in progress - Number of indexing batches (tasks) that are currently being processed.

Documents currently being indexed - Number of documents in the final stage of CSS indexing pipeline.

Documents in input queue - Number of documents in the CSS input queue.

Total number of processed documents - Number of documents processed by CSS for all indexes since server startup.

JVM Memory Statistics, Memory usage of the heap for object allocation - amount of heap memory used by the JVM before Java memory garbage collection.

**No CSS listener connection found.**

# Content Navigator - intuitive user experience



Intuitive

## Desktop application integration

- Send documents as links or attachments using desktop email applications such as Microsoft Outlook – enabling address books, signatures, and more
- Users working in Microsoft Office desktop apps using Navigator for Microsoft Office can view non-Office documents without downloading for an improved user experience that is more secure
- View checkout status in Navigator for Microsoft Office Favorites and Recent Items
- When viewing a Microsoft Outlook email message, add the email to a repository

This screenshot illustrates the integration between IBM Content Navigator and Microsoft Outlook. On the left, the IBM Content Navigator interface shows a list of files in a folder named 'FNOS2 / Lauren M'. One file, '2M403\_Employee.pdf', is selected and has a context menu open. The menu includes options like Open, Edit, Download, Send Email, Properties, View Link, Print, and More... A sub-menu for 'Send Email' is expanded, showing choices for 'As an Attachment' and 'As a Link'. On the right, a Microsoft Outlook window is open, showing an email message titled 'As we discussed' from 'laurenamayes@gmail.com' to 'albert.focuscorp@gmail.com'. The email body contains the text 'Here is the document.' and includes a preview of the PDF file. Both windows are highlighted with a blue border.

## General user experience

- Improved default column widths for displaying metadata in document lists
- Users can quickly add multiple documents and enter different values for some properties
- No waiting when uploading documents, users can do other tasks and are notified when upload is complete
- Upload and download very large files faster with IBM Aspera
- Improved paging experience when browsing through folders and search results, and option to use checkboxes to select documents



This screenshot shows the IBM Navigator interface. On the left is a navigation tree for 'Halo Corp' with categories like Accounting, Contracts, Demos, Engineering, Entertainment, Finance, Human Resources, Invoices, Legal, Operations, Presentations, Sales, Saved Searches, and Users. The main pane displays a list of files in a folder named 'Halo Corp / Contracts'. The list includes items such as '2019 Q1', 'Acme Industries', 'Central Services', 'Global Event Services', 'Markham Inc', 'Sales Technica', 'Titles Unlimited', '1GB', 'Bar\_Harbor\_Police\_Station\_-panoramio.jpg', 'Contract - SOW - Genome Solutions.docx', 'Contract.docx', 'Sample Contract Template.pdf', 'cnpca13835-vi.jpg', and 'contract\_review\_and\_approval\_process.pdf'. At the bottom of the list, there is a progress bar indicating 'Uploading 2 of 3' and a 'Show less' button. The entire interface is highlighted with a blue border.

# Comprehensive, customizable user interface

Role-based redaction to comply with regulations

Merge and split pages in the viewer without requiring native applications

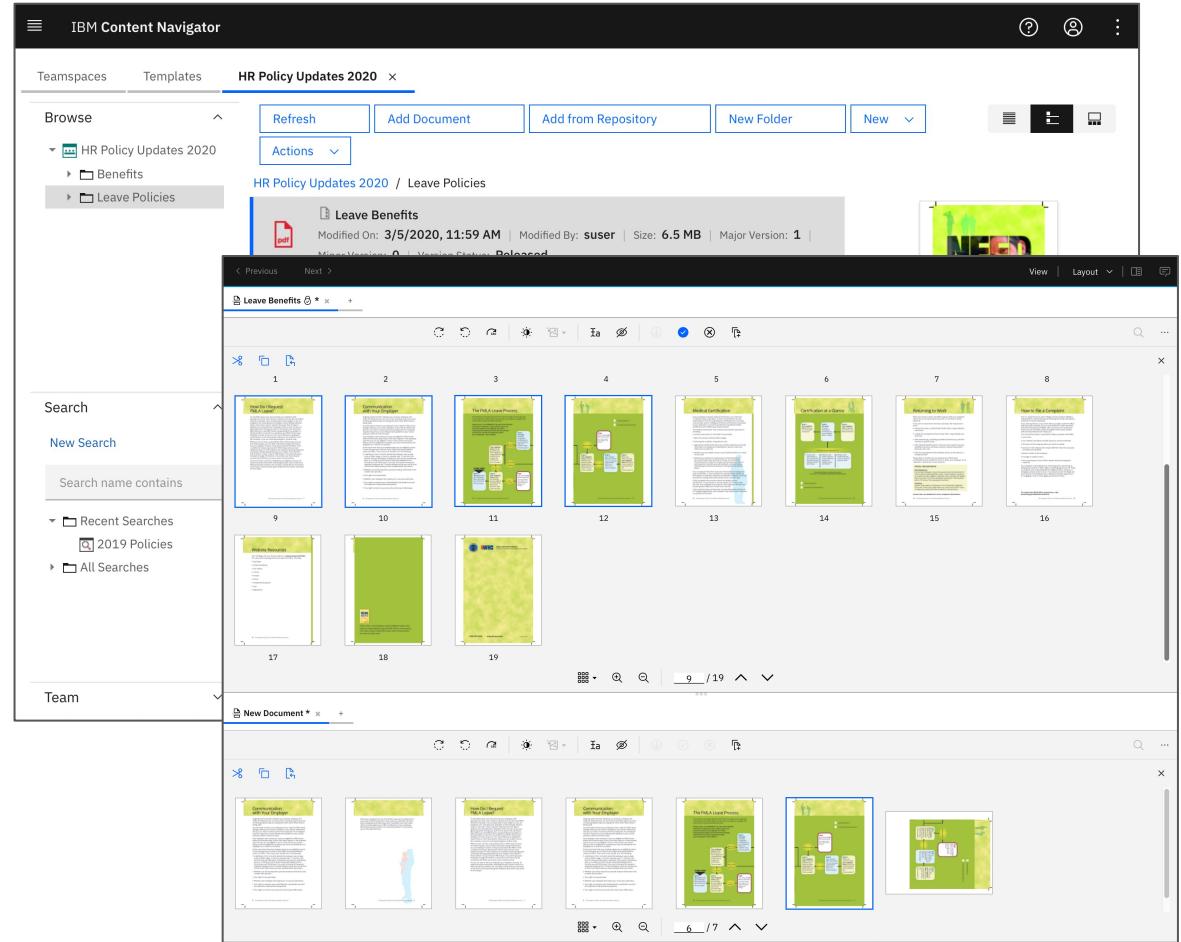
Edit directly in any desktop application or Office online

Templates for creating new documents and for automating document entry

Upload large files with IBM Aspera

Extensive customization through desktop configuration, including role-based desktop administration

Plug-in model for deeper customizations



Customize the Navigator UI to meet your business needs. Easy to use, powerful UI to get the most out of your content.

# Feature-rich web viewing

New, modern [user experience](#) with simpler, intuitive toolbars and an ability to display in the same browser window

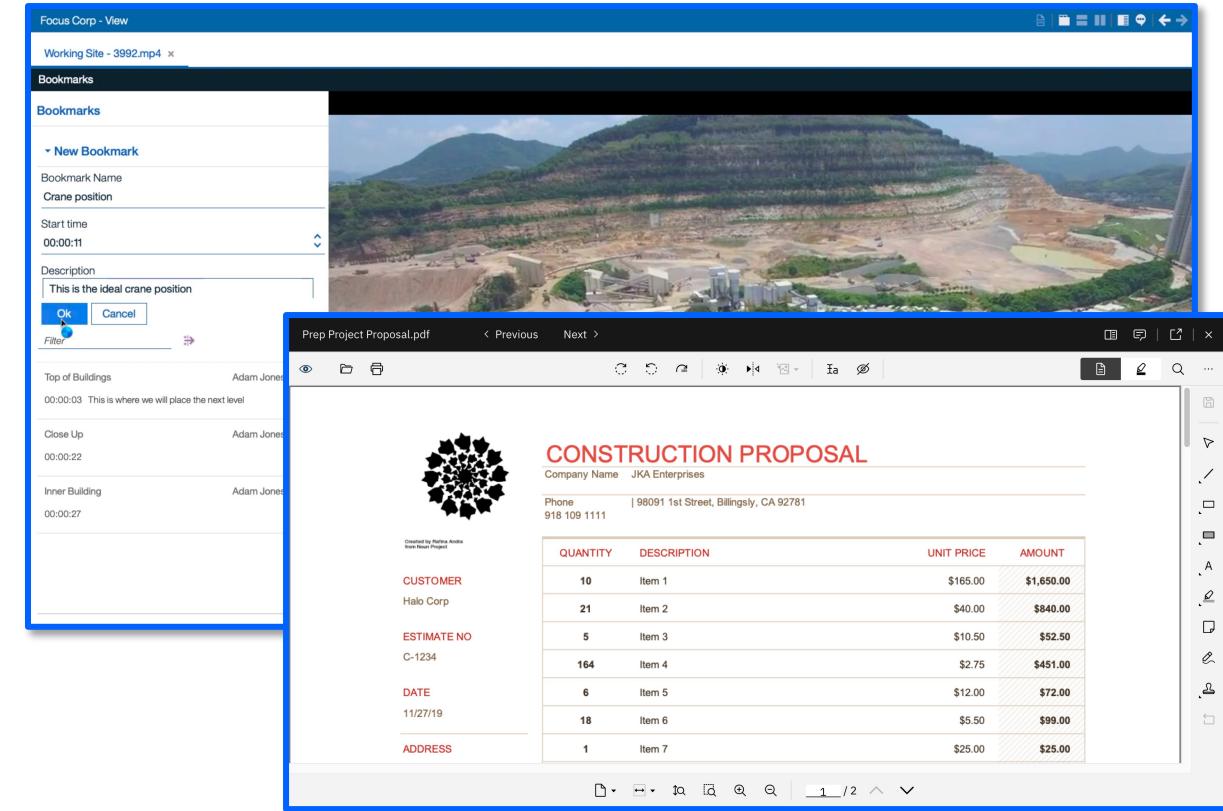
Enhancements making it easier and faster to work with PDFs

- [Search](#) with hit highlighting
- [Copy text](#)
- Display [native PDF annotations, signatures](#) and [password protected PDFs](#)

Annotate, adjust image, magnify, print, rotate

Video viewing and bookmarks

Additional configuration options for customizing



Take advantage of the feature-rich web viewer in Navigator that includes dynamic role-based redaction, merge and split pages, comprehensive annotations, magnify, utilize extensible viewer plug-ins and view videos with bookmarks.

Available with FileNet Content Manager

# Intelligent mobile capture

Set up a simple, guided user experience in minutes.

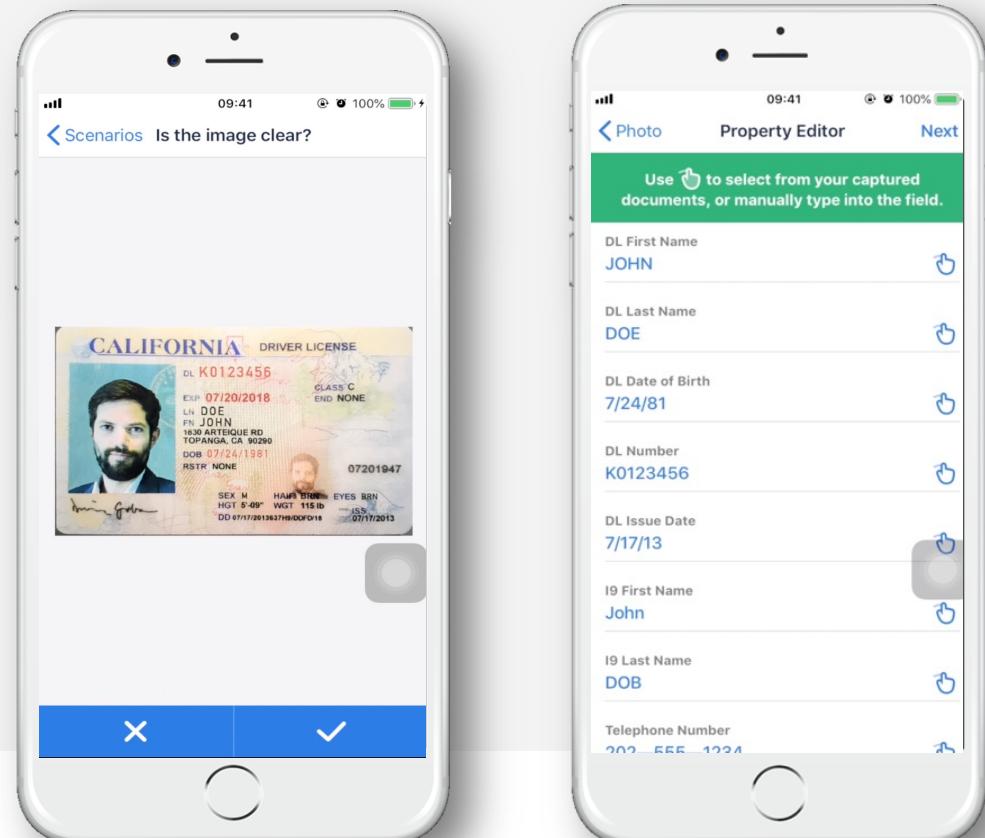
Intelligent document capture to store content and metadata in FileNet Content Manager with IBM Automation Mobile Capture.

Convenient and secure way to collect and submit content from mobile devices with data validation done in real-time at the source

Mobile app, scenario builder and custom SDKs entitled with IBM FileNet Content Manager and/or IBM Datacap. Available on the Apple AppStore or Google Play.



Provide employees or customers an easy way to submit content that is sent to FileNet and can automatically kick off a workflow.



# Securely share documents and folders with people outside of your organization

## Secure and auditable

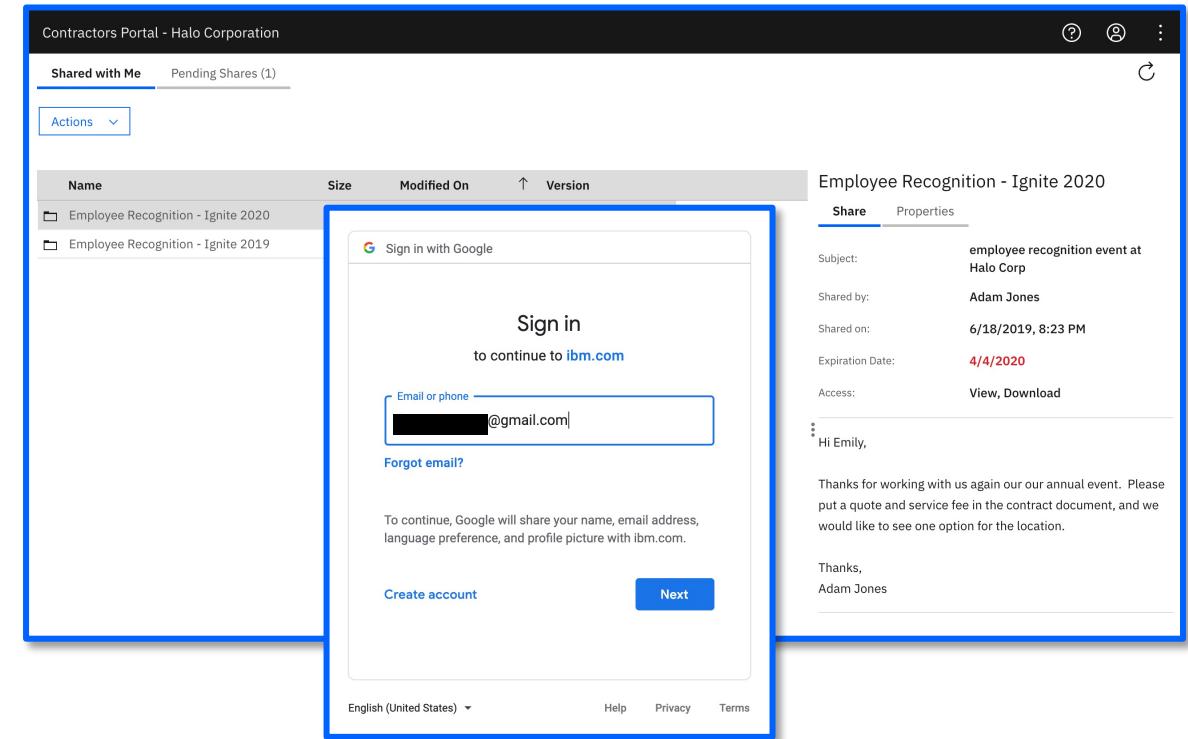
- Only authorized users can share
- Granular control for documents and folders
- Optional share expiration

## Entry templates automate adding new documents

Share [subject](#) and [message provides context](#) that is always available

## Visibility to everything you have shared

Multiple options for authorizing external users – including cloud-based identity providers, like Google and IBMid or internal directory (LDAP)



Collaborate with users outside of your organization with confidence in the security and audit capabilities of Content Navigator.

# Build low-code applications

Use Cloud Pak for Automation's Application Designer and the new Content Services Toolkit to add content to your low-code applications

- List view displays documents using search or browsing folder contents
  - With configurable menus to download, view, version, etc.
- Document viewer
- Properties view

The screenshot displays the IBM Cloud Pak for Automation interface, specifically the Content Sample App. The top navigation bar shows "IBM Cloud Pak for Automation", "Content Sample App", and "Last updated 8 days ago by you". Below the navigation is a toolbar with "Overview", "Diagram", "Variables", "Page: Starting Page", "Content", "Grid", "Mobile", "Tablet", "Desktop", "Visibility", and "Static analysis".  
**Content List:** This section shows a table of documents with columns: Name, Size, Modified by, Last modified, and Version. One document is listed:

Name	Size	Modified by	Last modified	Version
My Document1	2 KB	User1	10/1/2019	1

  
**IBM Navigator:** This sidebar lists "Halo Corp / Contracts" and shows a list of files with "Items per page: 20":

Name	Size	Modified by	Last modified	Action
2018 Genome Solutions.docx	59KB	suser	9/10/2019	Add document
890211 Contract.pdf	62KB	suser	9/10/2019	Add folder
Contract ACME.docx	25KB	suser	9/10/2019	
ContractTemplate_1.pdf	168KB	suser	9/10/2019	
EmploymentContract.pdf	143KB	suser	9/10/2019	
Filmire Contract.docx	25KB	suser	9/10/2019	
Markham Events.docx	59KB	suser	9/10/2019	
event-vendor-contract.docx	17KB	suser	9/10/2019	

  
**Document Viewer:** This panel shows a PDF document titled "2018 Genome Solutions.docx". It includes sections for "Genome Solutions" (address: 4835 South Bend, Bend, Oregon, 829018), "SOW 9012803 for Agreement to Perform Consulting Services to Halo Corporation", and "Services Performed By: Halo Corporation [Company Address] [City, ST, ZIP Code]". A note at the bottom states: "Please note for your content that appear in the paragraph text are shown in red and will change to the default text color when you edit your content. Information that needs to be in the document (such as client name) will be updated in all locations when you add or edit it once." and "The text provided is sample SOW text that you can edit as applicable for your business".

Democratize application development and allow your line of business experts to build their own content centric applications that seamlessly connect to your FileNet Content Manager repositories.

# Simplify application development using GraphQL

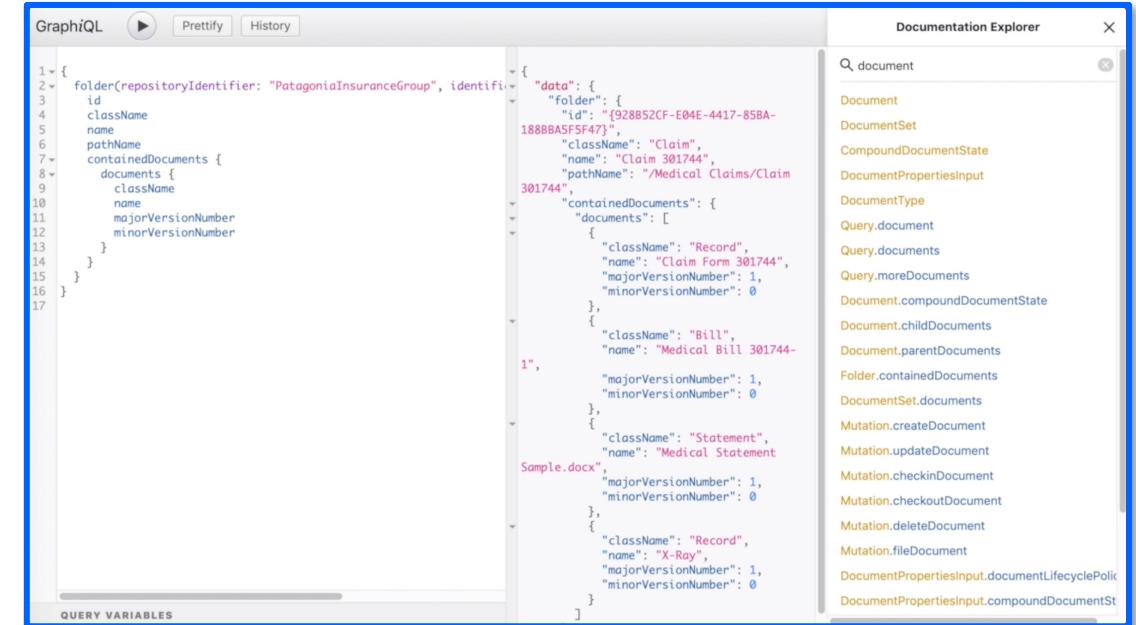
Rich, [modern API](#) – ideal for web and mobile application development

[Intuitive](#), easy to use API, optimized for rapidly changing data at scale

Retrieve and update [just the information you need](#), resulting in improved performance

A query language for APIs open source through the [Linux Foundation Project](#)

Continue to use your favorite APIs - CMIS, Web Services, Java, .NET in addition to GraphQL

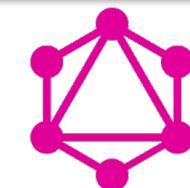


The screenshot shows the GraphiQL interface. On the left, a code editor displays a GraphQL query:1 `query {`  
2  `folder(repositoryIdentifier: "PatagoniaInsuranceGroup", identifier: "301744") {`  
3  `id`  
4  `className`  
5  `name`  
6  `pathName`  
7  `containedDocuments {`  
8  `documents {`  
9  `className`  
10  `name`  
11  `majorVersionNumber`  
12  `minorVersionNumber`  
13  `}`  
14  `}`  
15  `}`  
16 `}`  
17 `}`

The results pane on the right shows the JSON response from the GraphQL server. It includes a 'data' field containing the folder details and a 'documents' field which lists several document types (Claim, Record, Bill, Statement) with their respective names, major version numbers, and minor version numbers. A 'Sample.docx' file is also listed.

Documentation Explorer sidebar:

- document
- Document
- DocumentSet
- CompoundDocumentState
- DocumentPropertiesInput
- DocumentType
- Query.document
- Query.documents
- Query.moreDocuments
- Document.compoundDocumentState
- Document.childDocuments
- Document.parentDocuments
- Folder.containedDocuments
- DocumentSet.documents
- Mutation.createDocument
- Mutation.updateDocument
- Mutation.checkinDocument
- Mutation.checkoutDocument
- Mutation.deleteDocument
- Mutation.fileDocument
- DocumentPropertiesInput.document.lifecyclePolicy
- DocumentPropertiesInput.compoundDocumentState



# GraphQL



Cloud-friendly API that your development team can utilize to rapidly build applications.

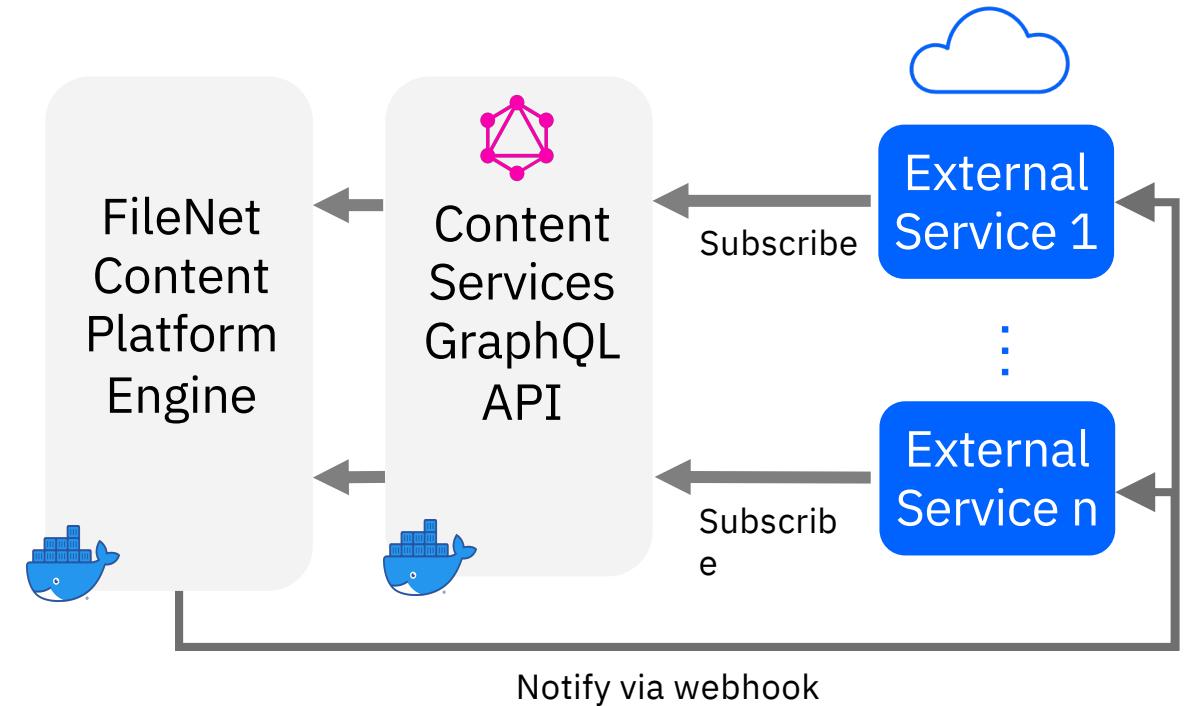
# Act on content events with webhooks

Webhooks [deliver content data to other services in real-time](#), based upon a triggering event

- Ex: Update claims processing system when a document is updated, and reflect claim changes on the document

Built on the [comprehensive FileNet event model](#)

- Events on documents, metadata, folders and more



Extend the power your Content Services through webhooks.

# Reduce storage costs with cloud storage options

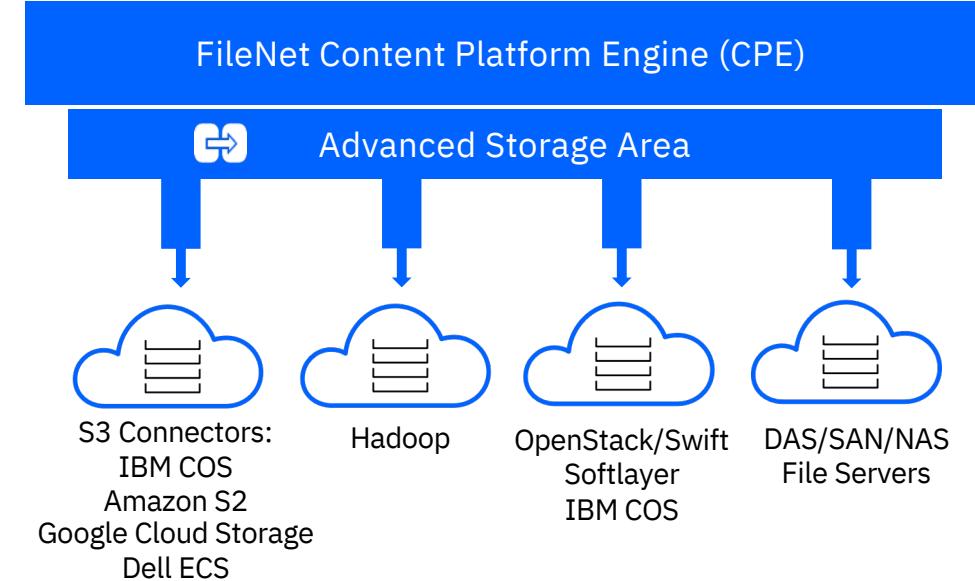
S3 storage connector supports multiple vendors

- IBM Cloud Object Storage, Amazon S3, [Google Cloud Storage \(new!\)](#), Dell ECS

Address [regulatory requirements](#), such as SEC 17a4 with Write Once Read Many (WORM) and holds at the storage level

- Support for IBM Cloud Object Storage and Amazon S3 object locking (for AWS on Cloud)

[Transparently move content](#) between storage devices with sweeps



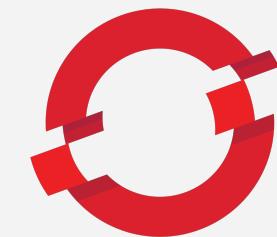
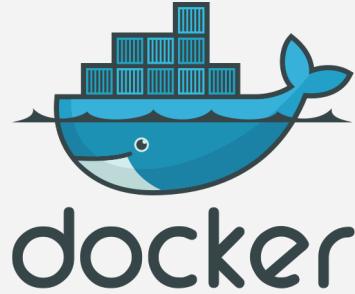
S3 storage connectors allow you to comply with regulatory requirements with your low cost storage vendor of choice.

# Reduce operational costs with Docker containers and Kubernetes

Rapid, resilient deployments using Operators on RedHat OpenShift provides increased availability, improved resource utilization, efficiency and agility

Supported in cloud environments with Kubernetes certification from Cloud Native Computing Foundation ([CNCF](#))

Support for OpenID Connect/Oauth



Available in FileNet Content Manager and Cloud Pak for Automation

Containers available for:

- Content Navigator
- Content Platform Engine
- Content Search Services
- External Share
- GraphQL
- CMIS
- Task Manager



Faster installs and updates, elastic scaling with Kubernetes, portable, easily automated, standardized, comes with lightweight WAS Liberty.

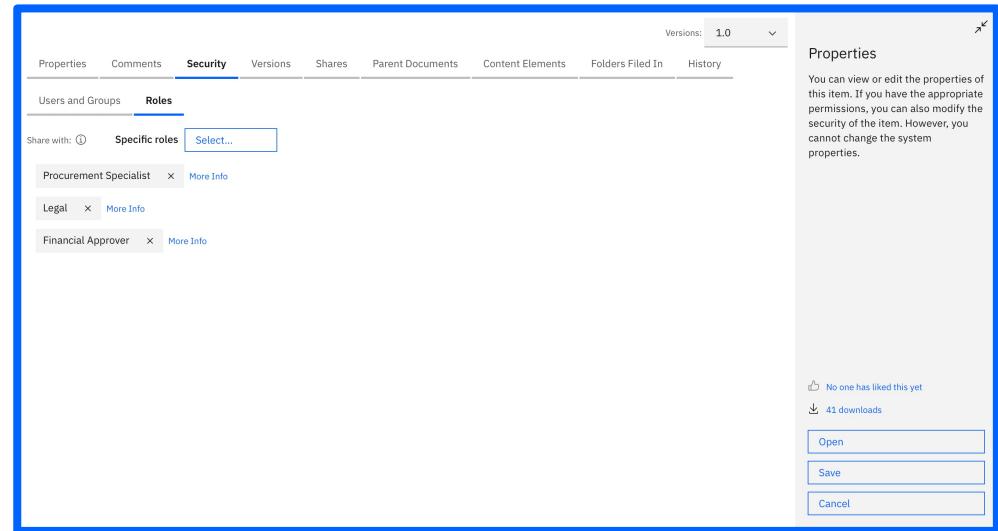
# Content Navigator - secure and configurable

## Security, access control and auditing

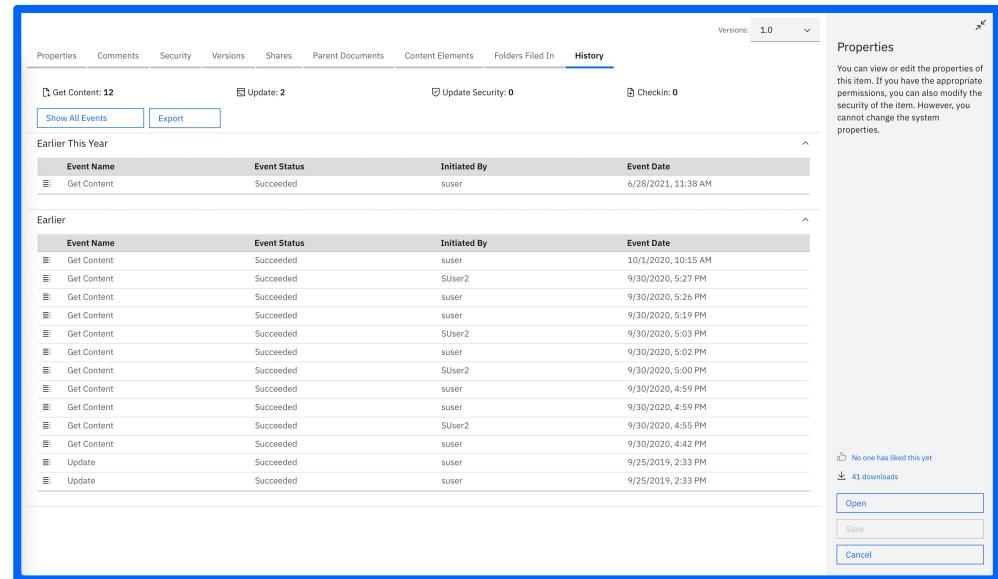
- More detailed history available for documents – such as property updates, security updates and custom audit events
- Simplify security configuration by applying security roles for documents, folders and searches
- Customizable Windows Edit client URL and your own certificate
- Use the Configuration and Deployment tool to configure the web application firewall with a custom policy
- WSI Transport is now available for WebSphere Application Server installations

## Administration and customization

- View object-valued properties, and update using External Data Service plug-ins
- More options for scheduling recycle bin deletes
- External Data Service support for object-valued properties
- Customize the viewer for different groups/departments with per desktop configuration
- Additional viewer configuration settings and APIs for integrating Viewing into custom applications

This screenshot shows the 'Security' tab of a document's properties. It lists 'Procurement Specialist', 'Legal', and 'Financial Approver' under 'Specific roles'. A 'Select...' button is also present. The right panel displays standard document properties like 'No one has liked this yet' and '41 downloads'.



This screenshot shows the 'History' tab of a document's properties. It displays a table of audit events with columns for 'Event Name', 'Event Status', 'Initiated By', and 'Event Date'. The table shows multiple entries for 'Get Content' and 'Update' events, all successful, initiated by 'suser' or 'SUUser2' between September 2020 and June 2021. The right panel shows the same document properties as the previous screenshot.

# Manage encryption keys externally

Encryption keys can be managed in a key management provider, centralized key management in the location of your choice.

Supports the Key Management Interoperability Protocol (KMIP) standard



Available for new and existing P8 domains

Support for:

- IBM Key Protect: Cloud-based service providing lifecycle management for encryption keys; enables HSM (Hardware Security Module) in IBM Cloud
- IBM Security Key Lifecycle Manager
- Vormetric Thales Data Security Manager



Support of multiple encryption key management services gives you choice and flexibility to manage your own keys as you migrate to cloud.



Intuitive

# Apply governance with Enterprise Records

Meet compliance requirements with IBM Enterprise Records

Records manager can create record categories, file plans, retention schedules, holds and dynamic holds

Containerized deployment now available 

Records sweeps integrated in Task Manager and Enterprise Records plug-in improving operations 

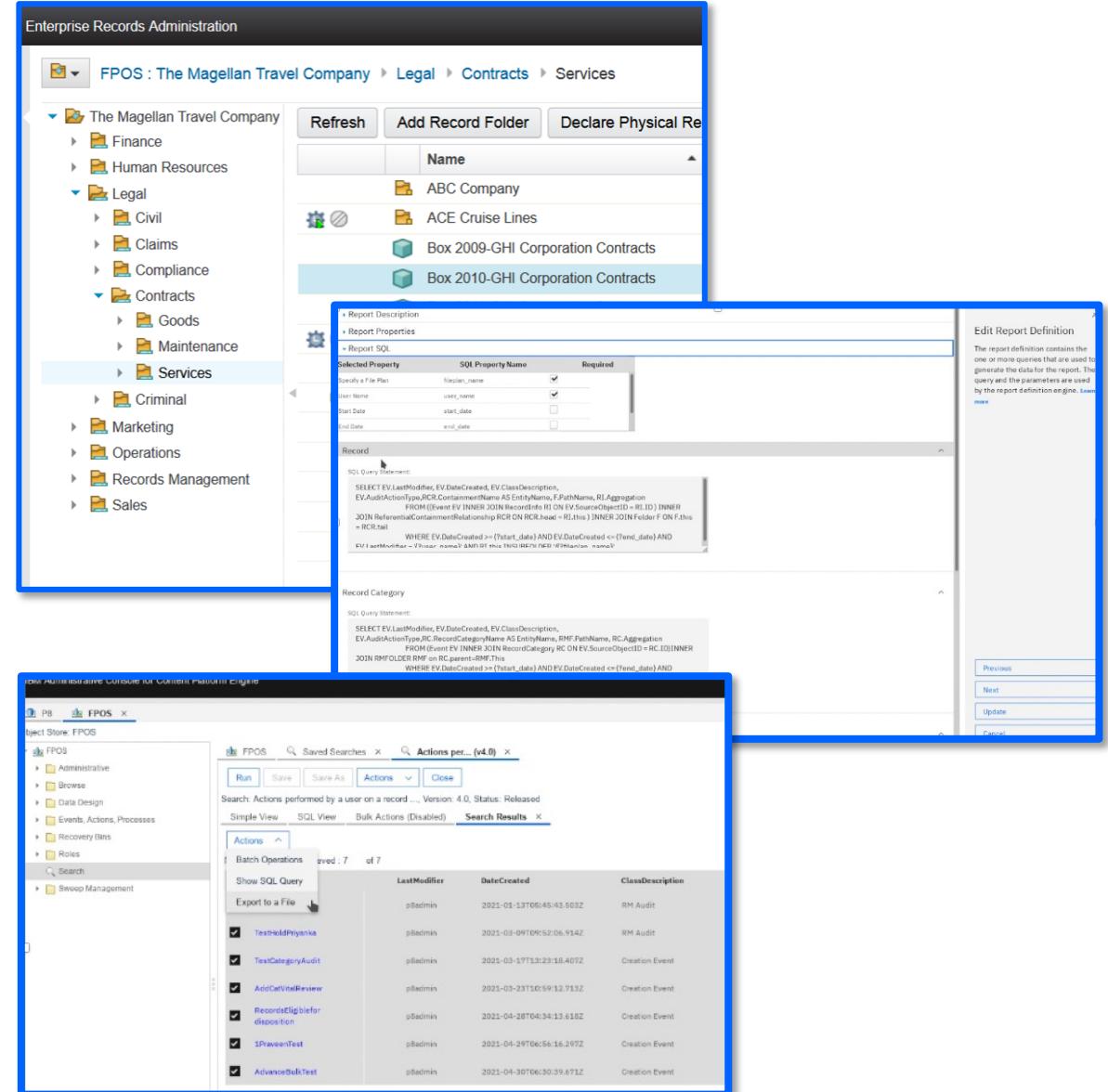
New reporting options with ability to easily export to .csv for advanced analytics 



Apply a device hold to documents when the device is added to a storage device preventing deletion allowing you to comply with retention regulations.



[Demo](#) (3:15min)



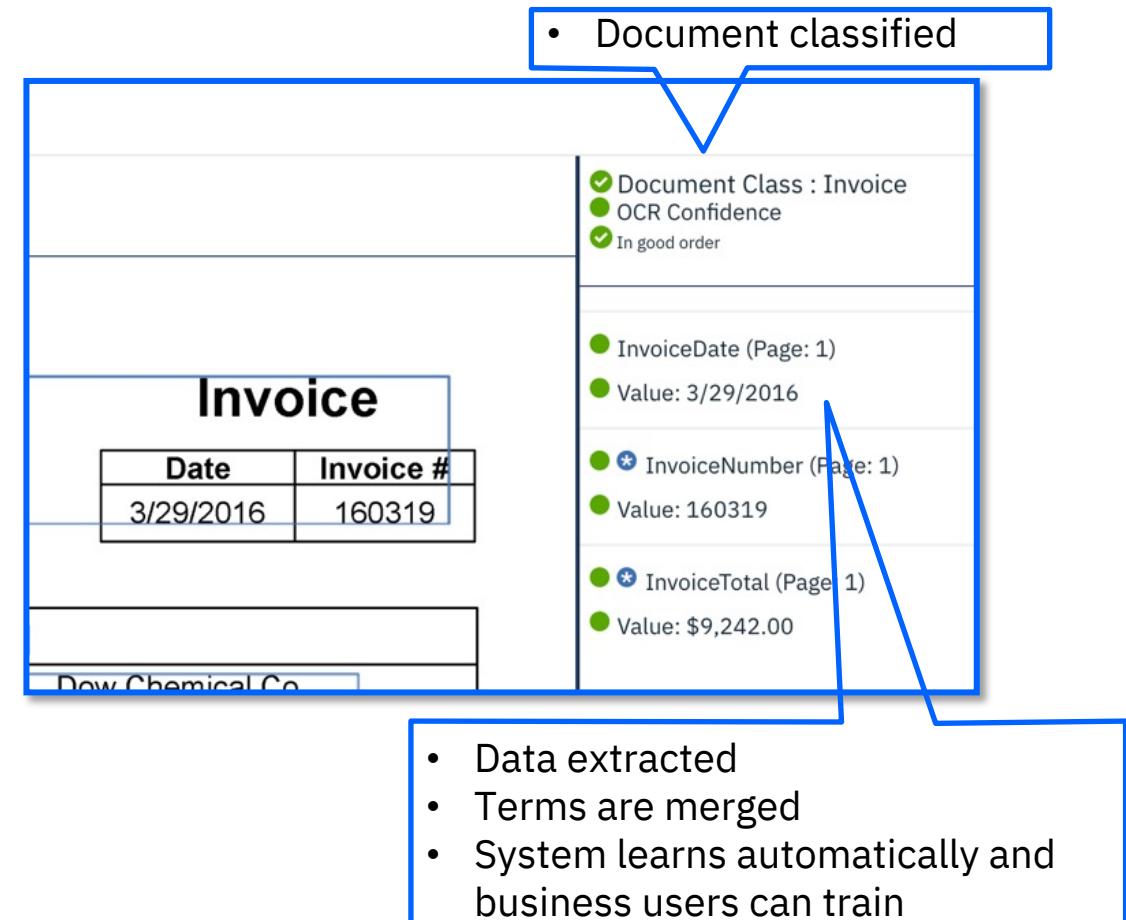
The screenshot displays two windows of the IBM Enterprise Records Administration interface. The top window, titled 'Enterprise Records Administration' for 'FPOS : The Magellan Travel Company', shows a hierarchical tree view of record categories under 'Legal'. The 'Contracts' category is expanded, showing sub-categories like 'Goods', 'Maintenance', and 'Services'. To the right of the tree, there's a 'Report Definition' panel with a table for 'Selected Property' and an 'SQL Query Statement' section containing complex joins and WHERE clauses. The bottom window, titled 'One Platform Admin Catalog for Business Productivity', shows a search results table for actions performed by a user on a record. The table includes columns for 'LastModifier', 'DateCreated', and 'ClassDescription', with several rows listed, such as 'TestHoldPhonya' and 'TestCategoryAudit'. A 'Show SQL Query' button is visible in the search results interface.

# AI-infused intelligent content processing: Content Analyzer

**Document classification:** Minimal training or document samples required

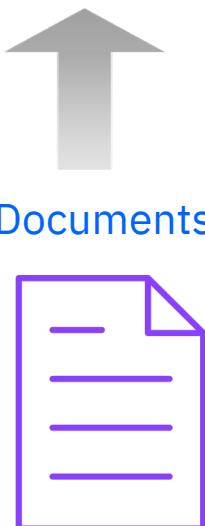
**Data extraction:** Intelligence “not templates” finds and extracts meaningful data

**Learn and adopt:** Human feedback loop built for business users makes CA adaptive to new content types



# Content Analyzer services

- Classify
- Extract text
- Extract data fields
- Extract tables
- Split into sections
- Identify language
- Identify document title
- Tag sensitive data
- Score quality
- Convert to PDF



Documents



Data

## Example Client Ontologies

- Account Opening
- Claims
- Billing
- Payables

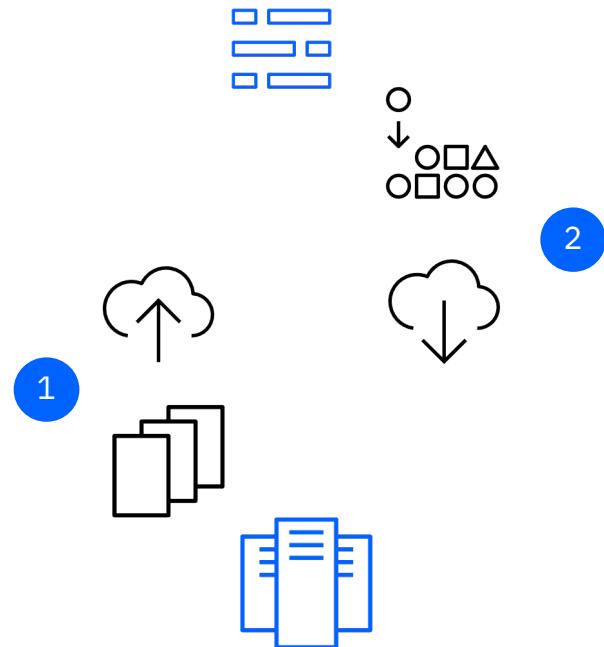
# Classify, extract and act on content using the Content Analyzer integration

Automatically classify new and existing content using AI

How it works

1. FileNet sends content to Content Analyzer to classify
2. Content Analyzer returns extracted data to FileNet
3. FileNet updates the document's class and properties accordingly

IBM Business Automation Content Analyzer



IBM FileNet Content Manager

 Automatically classify and extract metadata to enrich your enterprise content to gain insights and activate workflows with minimal training.

# Enterprise Video Streaming Connector

Business video is enterprise content and needs to be managed as critical business content

Granular FileNet security

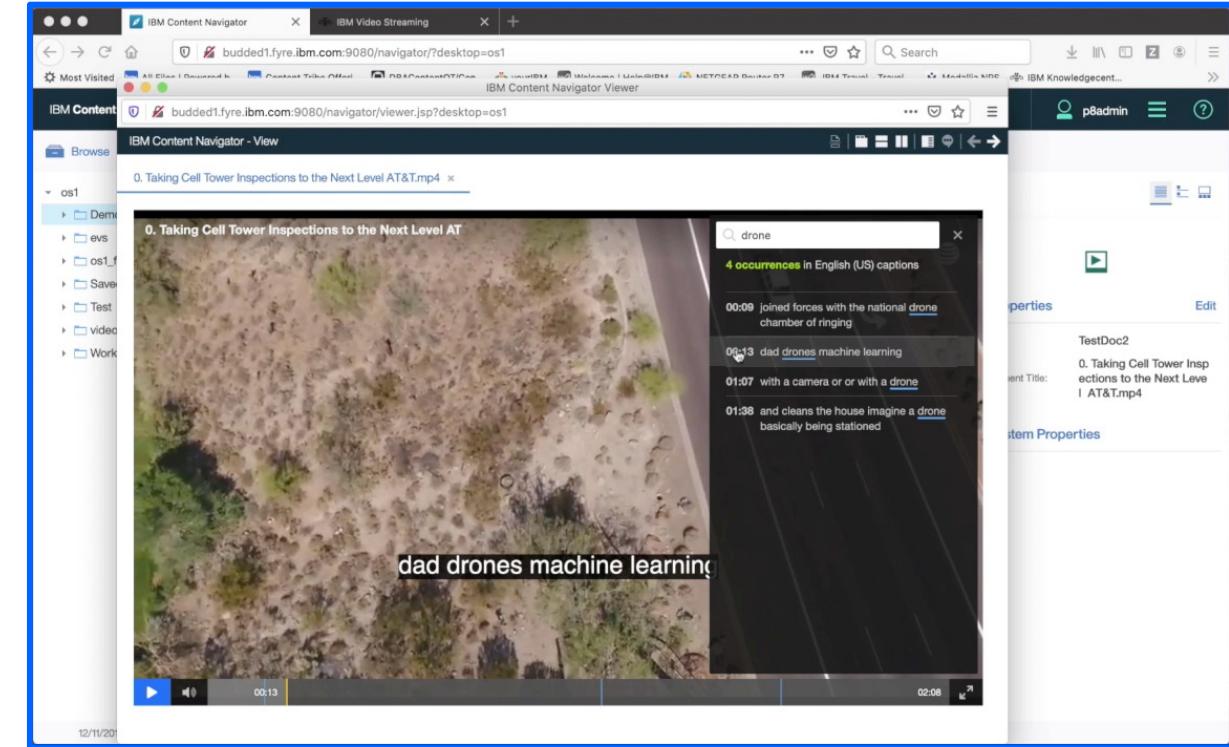
Quick play and access video segments without downloading

Closed captions automatically added

Fast search within videos using key terms

Analytics and video usage insights

Requires separate purchase of IBM Enterprise Video Streaming



Combine the power of FileNet with the cloud based live and on-demand video streaming platform to manage business video.



Intuitive

# Content Navigator – improved search and view

## Search

- Create more flexible cross-repository searches with search criteria that are required, hidden, editable, or read-only
- More actions on cross-repository search results: email, print, multi-select actions, export all
- When searching for documents using the document class, select metadata in any selected class
- Options for defining more advanced saved searches for users, with ‘and’ and ‘or’ combined search criteria
- Export all search results

## View

- View and annotate documents that have multiple content elements
- Listen to audio files
- Zoom thumbnails to make it easier to find the right page to view
- Print while using Merge and Split to edit documents
- Multi-select thumbnails and apply actions like rotate
- Improve usability for different users’ needs with per desktop viewer configuration, such as hide/show toolbars and actions

## Mobile

- Enhanced security with option to view only, but no downloads allowed
- Show custom metadata in search results - users can quickly scan results without opening property pane
- Improved usability for dark mode
- Easier navigation across multiple repositories



The image displays three screenshots of the IBM Content Navigator application. The top-left screenshot shows the 'Search Scope' configuration for 'This year's documents', listing repositories FN053 and FN052. The top-right screenshot shows a search results list for 'This year's documents' with a context menu open over a specific item. The bottom screenshot shows a mobile application interface for 'Focus Corp' with sections for 'Corporate Operations', 'Browse', 'Favorites', and 'Searches'. A blue vertical bar on the left side of the mobile screen has a 'New' flag icon at the bottom.



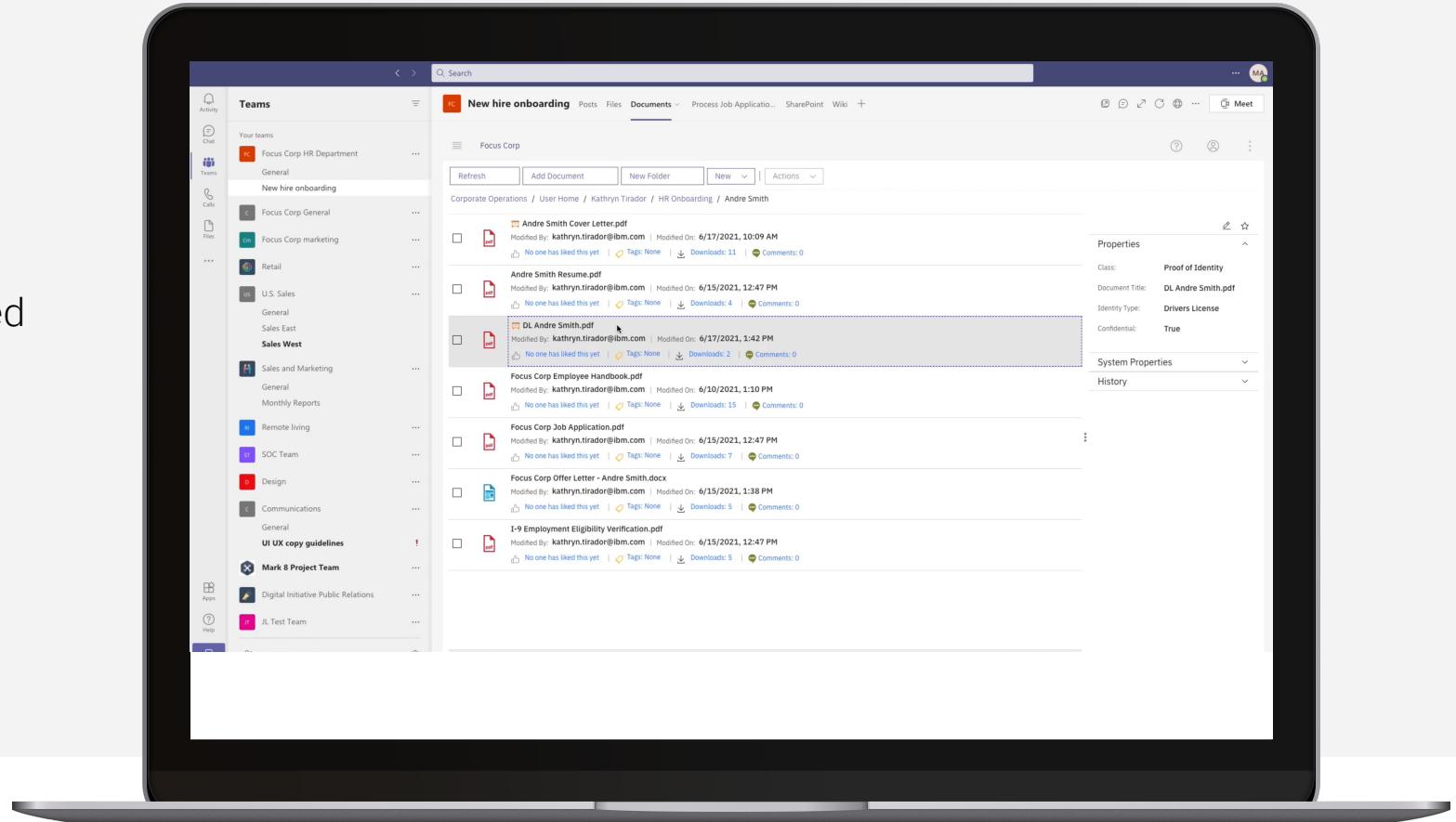
# Access Navigator from Microsoft Teams



Collaborate on content in FileNet without switching applications

Edit, upload, search, browse, view and access tasks from a Navigator tab in a Teams channel

Ability to create multiple tabs to use customized desktops or searches for quick access





# Salesforce Connector with FileNet Content Manager

Work in Salesforce, store content in FileNet.

Native integration to allow Salesforce users to seamlessly store related content in FileNet

Use with Salesforce industry solutions like Financial Services

Automatically save Salesforce metadata to FileNet 

Available for both WebSphere Application Server and container deployments 

The screenshot illustrates the integrated interface between the IBM FileNet SalesForce Connector and the Salesforce platform. It shows a central Salesforce Account record for 'Focus Corp' with a related document 'Jane Doe W2.png'. A modal window titled 'Edit Properties' is open, showing the file's properties and its association with the account. A blue arrow points from this modal to the text 'Save Salesforce metadata automatically with the related content in FileNet.' To the right, a 'Add Document' dialog box is shown, with a blue arrow pointing to the 'Add' button, labeled 'Add documents to FileNet, without ever leaving Salesforce'. At the bottom, a context menu for a related document is displayed, with a blue arrow pointing to the 'View' option, labeled 'View, download, edit properties, and more directly in context within Salesforce and automatically updated in FileNet.'

Save Salesforce metadata automatically with the related content in FileNet.

Add documents to FileNet, without ever leaving Salesforce

View, download, edit properties, and more directly in context within Salesforce and automatically updated in FileNet.

# Simplify application development using FileNet GraphQL

Rich, [modern API](#) – ideal for web and mobile application development

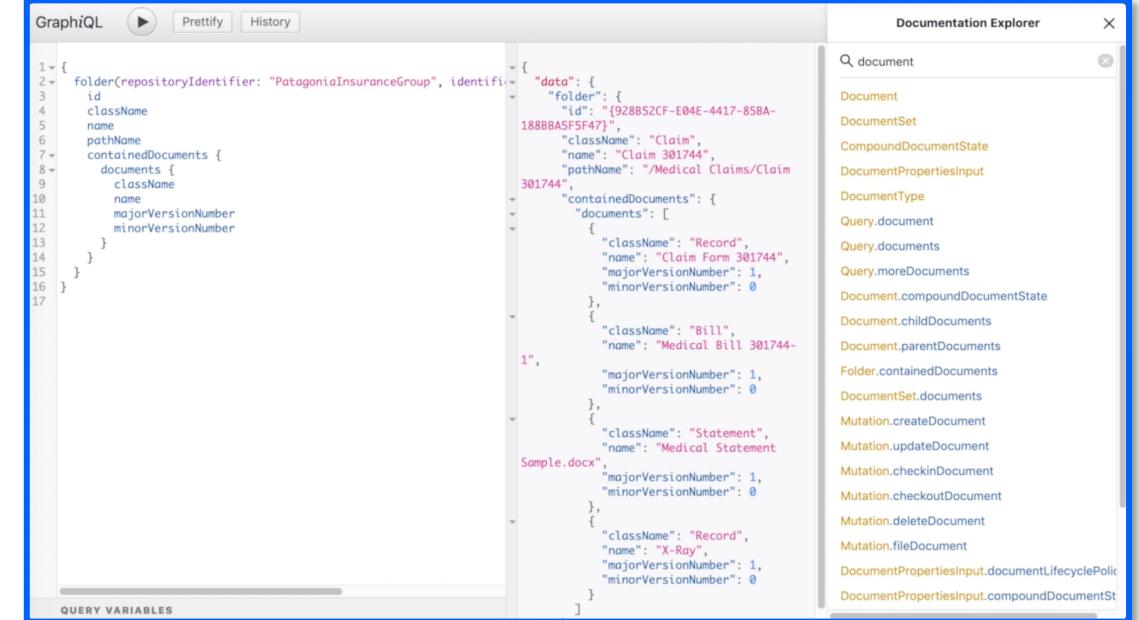
[Intuitive](#), easy to use API, optimized for rapidly changing data at scale

Retrieve and update [just the information you need](#), resulting in improved performance

Act on content events with webhooks

Recent updates:

- Annotations, thumbnails
- Custom objects, promote/demote version, binary data types
- Use GraphQL in WebSphere Application Server 

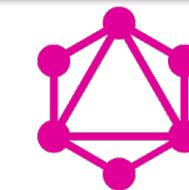


```

query {
  folder(repositoryIdentifier: "PatagoniaInsuranceGroup", identifier: "301744") {
    id
    className
    name
    pathName
    containedDocuments {
      documents {
        className
        name
        majorVersionNumber
        minorVersionNumber
      }
    }
  }
}

{
  "data": {
    "folder": {
      "id": "928B52CF-E04E-4417-85BA-188BBAS5F547",
      "className": "Claim",
      "name": "Claim 301744",
      "pathName": "/Medical Claims/Claim 301744",
      "containedDocuments": {
        "documents": [
          {
            "className": "Record",
            "name": "Claim Form 301744",
            "majorVersionNumber": 1,
            "minorVersionNumber": 0
          },
          {
            "className": "Bill",
            "name": "Medical Bill 301744",
            "majorVersionNumber": 1,
            "minorVersionNumber": 0
          },
          {
            "className": "Statement",
            "name": "Medical Statement Sample.docx",
            "majorVersionNumber": 1,
            "minorVersionNumber": 0
          },
          {
            "className": "Record",
            "name": "X-Ray",
            "majorVersionNumber": 1,
            "minorVersionNumber": 0
          }
        ]
      }
    }
  }
}

```



# GraphQL



Cloud-friendly API that your development team can utilize to rapidly build applications.



[Demo](#) (7:18 min)

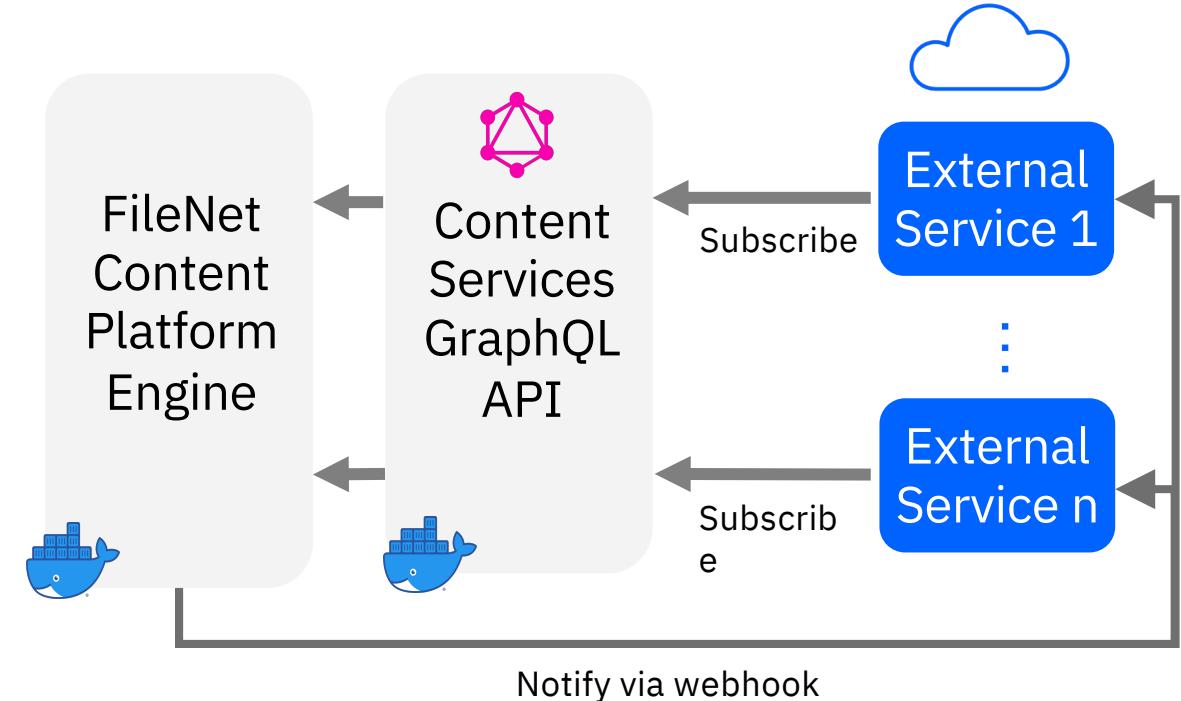
# Act on content events with webhooks

Webhooks [deliver content data to other services in real-time](#), based upon a triggering event

- Ex: Update claims processing system when a document is updated, and reflect claim changes on the document

Built on the [comprehensive FileNet event model](#)

- Events on documents, metadata, folders and more
- Configure webhooks using ACCE administration tool 



Extend the power your Content Services through webhooks.



[Demo](#) (7:18 min)

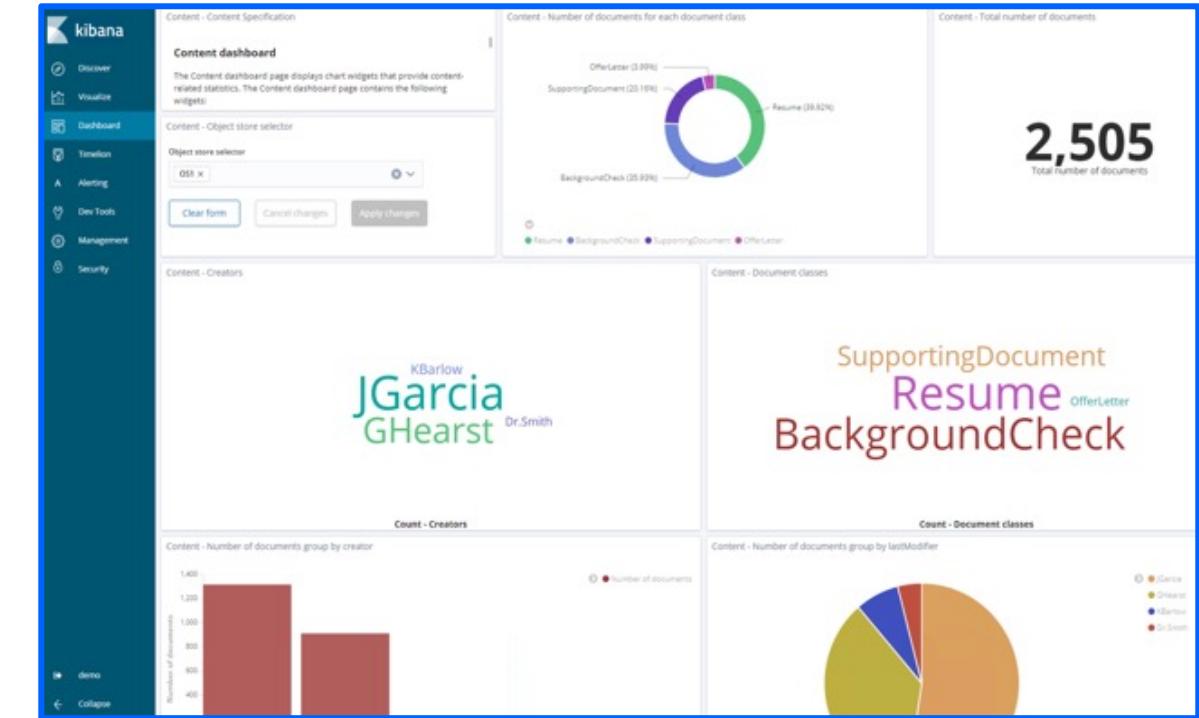
# Gain insights on content with Business Automation Insights

Intuitive [visualization](#) of documents added or updated in FileNet

- Filter by document properties, including custom properties
- [Rapid, intuitive filtering](#) and drilling down into a specific property or timeframe

Use Business Automation Insights with FileNet servers

- Deployed using containers, or
- Deployed using WebSphere Application Server



Easily visualize data of content related activities to gain operational insights.



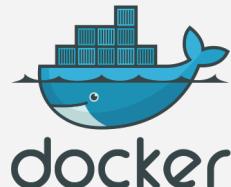
# Reduce operational costs with Docker containers and Kubernetes

Rapid, resilient deployments using Operators on RedHat OpenShift provides increased availability, improved resource utilization, efficiency and agility.

Operator with install patterns simplify and streamline deployment 

Supported in cloud environments with Kubernetes certification from Cloud Native Computing Foundation (CNCF)

Support for OpenID Connect/Oauth, additional LDAP vendors, and multiple LDAPs (same type) for FileNet Content Manager 



Available in FileNet Content Manager & Cloud Pak for Automation

Containers available for:

- Content Navigator
- Content Platform Engine
- Content Search Services
- External Share
- GraphQL
- CMIS
- Task Manager
- Enterprise Records 
- Content Collector for SAP 



[Demo](#) (11:24 min)

# Reduce database costs with PostgreSQL



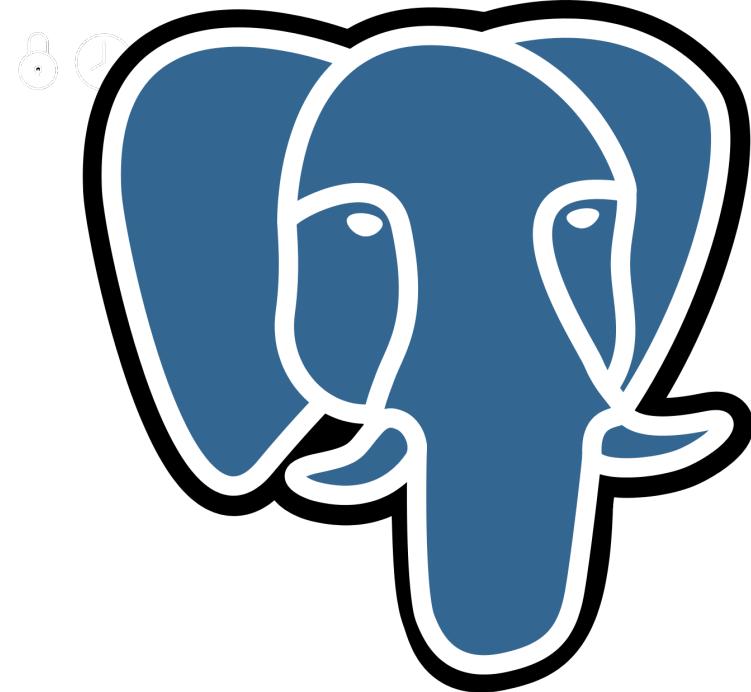
PostgreSQL is an enterprise-grade, open-source relational database

Reduce your TCO while leveraging a mature, robust, and reliable database

Commonly used on public cloud platforms

Supported for container installations (CPE & ICN),  
PostgreSQL v11, v12.3 

Highly scalable, proven to handle enterprise workloads



Postgres is an enterprise-class database - there are active PostgreSQL clusters in production environments that manage many terabytes of data, and specialized systems that manage petabytes



# Increase flexibility with Identity Providers

## Why use an Identity Provider (IDP)?

- Streamline user administration
- Simple, secure mechanism for giving access to users without requiring them in the corporate LDAP directory
- Multi-factor authentication

## How does it work?

- Administrator configures realms – with whitelist and blacklist
  - Pre-register users, or allows users to ‘self-register’ when logging on
- Users given access rights to documents, folders, etc
- Create groups New

The screenshot shows the 'Managed User Realm' section of the IBM Admin console. The left sidebar lists various P8Domain configurations. The main area displays a table of managed users under 'Internal Company A'. The table includes columns for DisplayName, Email, Status, Creator, and DateCreated. Each user entry shows their details and creation timestamp.

DisplayName	Email	Status	Creator	DateCreated
Dan Arturo	Dan@companyA.com	Confirmed	[Server]	April 14, 2020 at 9:2 Daylight Time
Jane Austin	Jane@companyA.com	Confirmed	CEAdmin	April 9, 2020 at 10:3 Daylight Time
Jane Us Doe	Jane@us.companyA.com	Confirmed	[Server]	April 15, 2020 at 9:0 Daylight Time
Paul Apricot	Paul@companyA.com	Confirmed	[Server]	April 15, 2020 at 4:1 Daylight Time
Sally Anders	Sally@us.companyA.com	Confirmed	[Server]	April 28, 2020 at 5:3 Daylight Time
xxx@companyA.com	xxx@companyA.com	Provisional	CEAdmin	April 21, 2020 at 2:0 Daylight Time

The top screenshot shows the 'Identity Rules' configuration for 'Internal Company A'. It lists two rules: one for 'companyA.com' with 'Allow Self Register' and another for 'uk.companyA.com' with 'Block'. The bottom screenshot shows the 'Welcome to IBM Content Navigator' login page, which includes options to log in with a corporate ID or Google ID.



# Platform Configuration Updates

[Azure Active Directory Domain Services](#): Microsoft's cloud-based identity and access management service

- Azure AD Domain Services allow you to lift and shift your existing AD domain controller to Azure
- Use Active Directory LDAP as-a-Service
- Good option when migrating FileNet Content Manager to Azure cloud

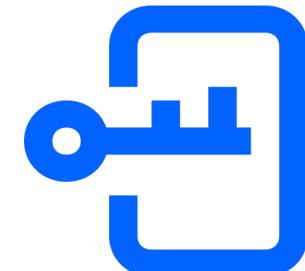
[Configuration Manager enhancements](#)

- Database connection is secured via SSL/TLS by default 
- Increased default connection pool size 

[OAuth 2.0 and OpenID Connect](#)



- Container and traditional WebSphere Application Server installs
- Content Platform Engine and Content Navigator
- IBM Content Collector for Email and SharePoint





# Flexible archiving with IBM Content Collector

IBM Content Collector enables [business process](#),  
[governance](#) and [eDiscovery](#)

Archiving from file system and SAP into Content Services on Cloud

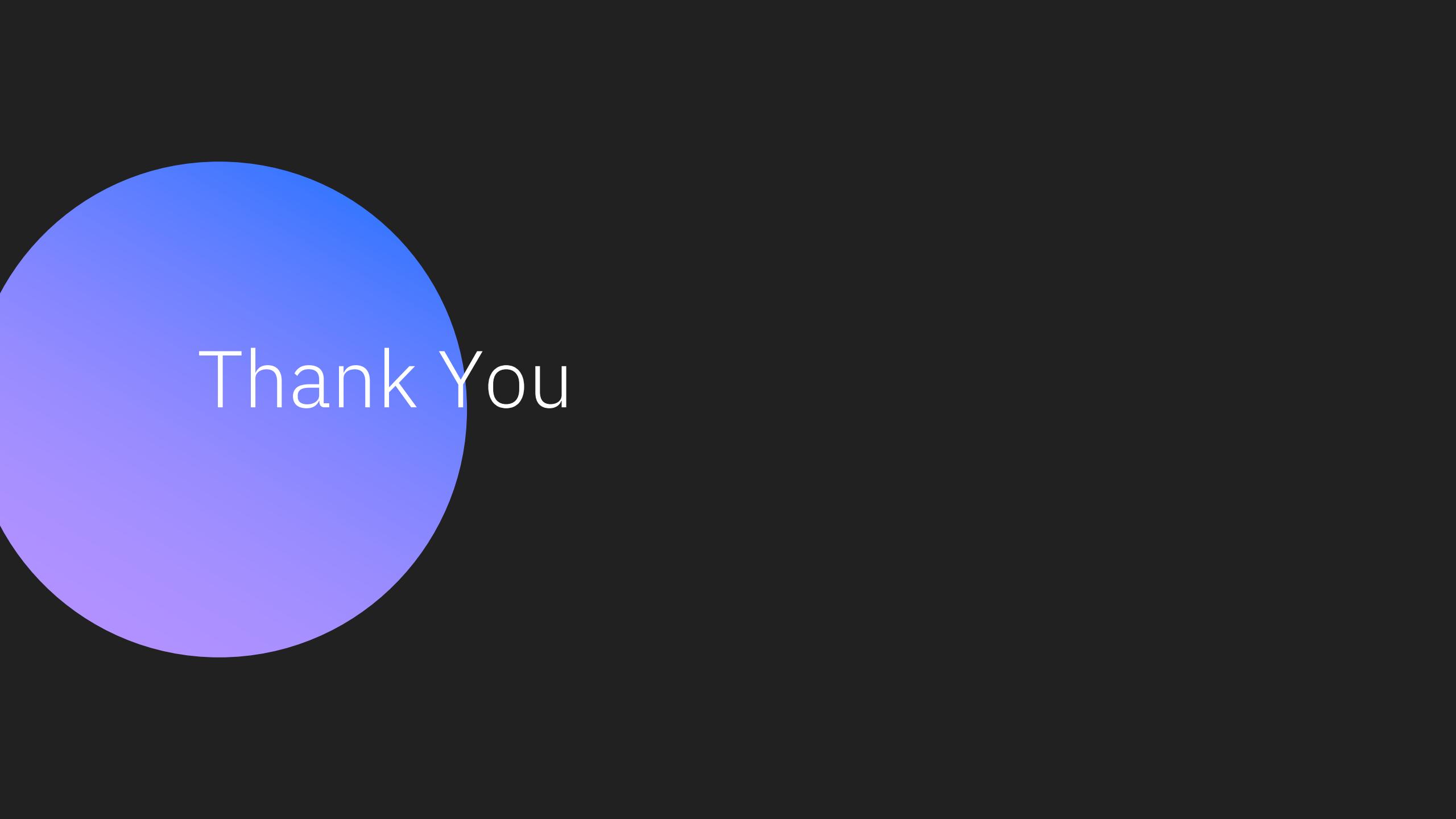
Support for SharePoint Online

ICC for SAP available as a container

Docuflow SAP extends solutions for ICC for SAP



Easily determine what data to archive and act on content.



Thank You

# Cloud Pak for Business Automation: Content Based Retrieval

General Properties Index

An index area is a container for full-text indexes, which are used to perform full-text searches against documents in the object store.

* Display name:	DEVOS1_index_area
Description:	Test Text SEArch Index Area 0.8999671861867796
Object store:	DEVOS1
Resource status:	<input checked="" type="radio"/> Open ⓘ <input type="radio"/> Closed ⓘ <input type="radio"/> Standby ⓘ <input type="radio"/> Full ⓘ
* Root directory:	/opt/ibm/indexareas
* Standby activation priority:	0
* Site:	Initial Site ▾
Affinity group:	aff_group ▾
Maximum index count:	20
Index maximum object count:	10,000
* Index maximum size:	256,000

# Cloud Pak for Business Automation: Content Based Retrieval

General   Properties   **Index**

**Reindex**   **Resync**

The displayed property values are for the selected index.

Index selection: DEVOS1\_Document\_20210715144013\_F8C93BDD7CF94B11859A2A648 ▾

Base classes: Document

Index identification: {F8C93BDD-7CF9-4B11-859A-2A648B1D5455}

Resource status:

- Open ⓘ
- Closed ⓘ
- Full ⓘ
- Unavailable ⓘ

Indexing status:

- Normal ⓘ
- Replacing ⓘ
- Rebalancing ⓘ
- Resyncing ⓘ

# Cloud Pak for Business Automation: Content Based Retrieval

```
SELECT d.This  
FROM Document d  
INNER JOIN ContentSearch c ON d.This = c.QueriedObject  
WHERE CONTAINS(d.* , 'CBR and CSS')
```