

# IBM FileNet P8 4.5

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## White Paper



Information Management software

### Consumability and Performance Enhancements in IBM FileNet P8 4.5

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## Introduction

This white paper describes the consumability and performance enhancements made to the IBM FileNet P8 suite of products.

For any customer of the software industry, upgrading an established and successful production environment to a newer version of software can be a challenging and time-consuming activity, and one that is not undertaken lightly.

Customers have cited the following reasons for their reluctance to upgrade a production system:

- The stability of the new software release is unknown in the customer's particular environment.
- Transitioning to a new software level can have a significant budgetary impact, and can require additional training, testing, hardware resources, and so on.
- Existing mission-critical production software might be impacted by the new software.

## Rate of upgrade adoption

Customers were slow to upgrade their FileNet P8 3.5x systems to 4.0x for the following reasons:

- A significant part of the Content Engine code was rewritten in Java. The transition of the Content Engine from a C++ application that ran exclusively on Microsoft Windows to a Java application that ran in a J2EE environment on several different application servers was a significant change.

Because of the scope of the changes, there was a mis-perception that the product had reverted to a 1.0.0 version, and many customers preferred to wait until there were reference sites that had successfully upgraded to IBM FileNet P8 4.0.0.

- Product installation was challenging.

Early adopters of IBM FileNet P8 4.0.0 were able to successfully deploy the software into the production environments, but it required a significant amount of time and effort.

The IBM FileNet P8 Development team was involved with the installations at some of these early adopter sites, but generally the team's involvement was focused on the installation of the development environment rather than the production environment.

- The support teams were not adequately prepared to support the IBM FileNet P8 4.0.0 product when it was released.

Although the P8 Development team hosted a number of architecture and product review sessions, the changes in the product architecture – which included a number of new third-party products - presented a significant training challenge for the internal support teams.

As a result, during the first year following the IBM FileNet P8 4.0.0 product launch, there was a relatively small number of customers with production environments running new P8 4.0.0 installations, and a smaller number who had upgraded from P8 3.5.0 to P8 4.0.0.

## Task force recommendations

To understand and address the slow adoption rates for the P8 4.0.0 release, the ECM executive management team assembled a multi-departmental task force, chartered with understanding the customers' upgrade issues and concerns.

After studying the available data, the task force made the following key recommendations:

- Provide an IBM FileNet P8 installation lab that simulates customer environments. The Lab Services Field Delivery team is able to use the lab to perform dry-runs of a customer installation without impacting the customer's production system and to help ensure a smooth and efficient installation when on-site.

Information gathered from the dry-runs is provided to the development and documentation teams to provide insight into current needs and future enhancements.

- Produce a series of educational Webcasts detailing the P8 4.0.0 architecture, installation best practices, high availability, programming API options, and scalability.

These presentations have been highly successful and well received by the field.

- Interview the Lab Services Field Delivery teams that were responsible for installing P8 4.0.0 at 25 selected customer sites. Their feedback was categorized and has been used to drive product and documentation enhancements in the IBM FileNet P8 4.5.0 and 4.5.1 releases.
- Focus attention on the documented installation procedures. The documentation team has worked closely with the installation personnel to provide significantly more planning information and to fine-tune the step-by-step instructions provided.

In response to this recommendation, planning and preparation information has been separated from the installation procedures, and a customizable spreadsheet has been created that customers can use to gather and store prerequisite configuration information.

## SWAT Team formation

The ECM SWAT team was formed to work directly with customers in an advisory capacity in order to help customers optimize their IBM FileNet P8 investment. The team can also act as a convenient central contact point for customers. The ECM SWAT team's charter has two main objectives:

- Assist customers, especially early adopters, with designing and deploying the best solutions in response to their business needs, and with installing or upgrading to the latest versions of ECM software.

To date, the ECM SWAT team has assisted more than 120 customers. In addition to making each customer's adoption of the IBM FileNet P8 software successful, a side-benefit is that these customers become reference accounts who then help encourage other customers.

- Drive consumability improvements in the IBM FileNet P8 products by analyzing and distilling not only their own installation and upgrade experiences, but also those of the customers. Using the ECM SWAT team's feedback, the development and documentation teams identify and plan for future consumability enhancements.

A successful ECM SWAT team engagement requires that customers follow these simple but important guidelines:

- Staff the project appropriately.
- Set reasonable expectations.
- Communicate effectively with all personnel involved in the project.

To engage the ECM SWAT team in a project, ask your IBM Sales Representative to send a request to [ksheikh@us.ibm.com](mailto:ksheikh@us.ibm.com).

## Enhancing the IBM FileNet P8 suite

As a result of experience gained from the IBM FileNet P8 4.0.0 release, the focus of the 4.5.x releases has been to address customer needs and concerns, particularly in the following areas:

- [Consumability](#)
- [Performance](#)
- [Stability](#)

### Consumability

Consumability has become an ongoing focus of all the IBM FileNet P8 releases. Each new feature is subjected to rigorous consumability testing to ensure that every customer's experience with it will be a positive one. In the IBM FileNet 4.5.0 and 4.5.1 releases, significant strides have been made to enhance the user experience, described below.

#### Enhancements made in the 4.5.0 release

The IBM FileNet P8 4.5.0 release was the first one for which improving consumability was an intense focus for the development and documentation teams. As the first, it was necessary to establish a baseline against which future releases would be measured. To this end, a set of consumability labs were established in which IBMers, unfamiliar with the IBM FileNet P8 installation process completed both installation and upgrade procedures. Regardless of the procedure they were tasked with, the participants timed each step of the process, and recorded comments regarding the product's ease of use and about missing or misleading information. The consumability labs continued throughout the release process.

In addition to changes made to the product as a result of the consumability lab results, other functional changes were made based on the feedback gathered during the P8 4.0.0 task force research, including the following.

- Separation of the installation and configuration steps. Now, the program performs the single task of laying down binary files and required configuration files, but does not perform any configuration at the time of installation.

This approach affords several advantages:

- Simplifies the installation instructions.
- Provides a consistent look and feel to the installation application across all environments.
- Minimizes the likelihood of issues arising that can only be fixed by publishing new installation media.

- Creation of a new tool – the Configuration Manager - that the user runs separately, after the installation process has successfully completed.

Users can run the Configuration Manager either from the command line or through a GUI to set up new environments and to make changes to existing environments.

- Separation of the installation documentation into two separately-focused parts: prerequisite and planning, and procedural.
  - Prerequisite and planning documentation has been assembled into the *Plan and Prepare Guide* and an associated *Plan and Prepare Spreadsheet*.

One of the key issues for causing delays during a P8 4.0.0 installation was the lack of prerequisite information before starting the installation. As a result, each time a question came up regarding prerequisite information, the installation process would halt until such time as the appropriate administrator was available to provide an answer.

Using the *Plan and Prepare Guide* and the associated customizable spreadsheet, customers now have an easy way of knowing and assembling the information that is needed, and of ensuring that everything required for a successful IBM FileNet P8 installation is in place ahead of time.

- Procedural documentation has been isolated into an *Install and Upgrade Guide*.

The removal of the prerequisite information from the *Install and Upgrade Guide* has made it easier for users to accurately follow each step in the document.

#### **Enhancements made in the 4.5.1 release**

Consumability continued as a primary focus during the IBM FileNet P8 4.5.1 development phase. We continued to run consumability labs and to measure our progress against the baselines established in the IBM FileNet P8 4.5.0 timeframe.

The installation development and documentation teams worked closely with the Lab Services Field Team personnel to target the appropriate improvements on two areas of particular emphasis:

- Configuration Manager (introduced in the IBM FileNet P8 4.5.0 release).
- Installation documentation.

An additional focus area was to improve the look and feel of the IBM FileNet P8 software installation screens, and other GUIs. To this end, the development team engaged with the IBM user experience professionals.

As a result of these discussions, the following consumability improvements were made in the P8 4.5.1 release.

#### **Configuration Manager**

- Various improvements were made to the Content Engine Configuration Manager, including
  - The introduction of a *project*.

Using the projects administrators can group related configuration files together to simplify ongoing maintenance of the environment.
  - The ability to configure multiple tasks of a given type.
- The installer automatically detects the Content Engine version and, if needed runs the upgrade utility without requiring manual intervention.

- The Process Engine installation was simplified and made more robust, and the reboot requirement was removed.

### Installation Documentation

- The P8 documentation is now available on the IBM InfoCenter allowing users to access all of the documentation without having to install it.

<http://publib.boulder.ibm.com/infocenter/p8docs/v4r5m1/index.jsp>

To further refine the documentation and make it easier still for users to follow each step, customized *Install and Upgrade Guides* are available in the IBM FileNet P8 4.5.1 release. The guides are customized according to specific combinations of application servers, LDAP servers, and database servers. To download the guides, see:

<http://www-01.ibm.com/support/docview.wss?rs=3278&uid=swg27016206>

## Usability and user interface improvements

### Application Deployment

The Deployment Tool was introduced in IBM FileNet P8 4.5.0 to simplify the task of moving Content Engine objects between source and destination object stores. In the 4.5.1 release, the tool was enhanced to provide the following:

- Change impact analysis capability. This feature produces reports of the objects to be deployed, and by identifying common problems before updating the destination object stores, this tool helps prevent errors.
- Partial update capability. This feature supports the update of a sub-set of previously deployed Content Engine objects.

In addition, the Content Engine import and export tools were enhanced in the areas of usability and scalability.

### Business Process Manager (BPM)

- The look and feel of the Process Designer has been redesigned to provide a more intuitive and seamless design experience.
- The usability of the Process Analyzer was improved by removing the Process Engine and Content Engine runtime dependencies.
- The functionality of BPM was extended by the inclusion of Process Monitor. Using Process Monitor, you can monitor process events in real-time using many pre-configured process metrics with Cognos Now! Limited Edition or with Cognos Now! Appliance.

## Performance

One of the goals for the P8 4.5.0 release was to improve the performance of the Content Engine both in response times and in CPU costs for specific operations. These areas were formally measured by the ECM Performance team by running a similar set of tests against the Content Manager Java APIs across releases. The test suite included a mixture of transactions that were based on typical customer usage.

Improving performance continues to be a focus for the development team. Extensive performance analysis aimed at optimizing intra-system interactions, has yielded results impacting real-world installations, such as:

- High scalability, realized as near-linear growth in both throughput and CPU utilization.

- Improved support for scale-out, scale-up, distributed deployments and other factors beneficial to enterprise topologies. Process Engine servers can now be farmed.

Contributing to improved performance were specific changes to the IBM FileNet P8 architecture, such as:

- Removing the separate file store service.

The P8 3.5.0 file store service had to be configured in an active/passive configuration, which meant that only one instance could run at any given time. Now, the functionality is distributed across all the Content Engines in the domain, so it scales up as the number of Content Engines is increased and all functionality for accessing the file stores is similarly distributed across all the Content Engines.

- Removing the full text indexing functionality from the Content Engine and moving it into a separate service that can be run on a separate host. In addition, multiple instances of each service, such as the search service, can be used.
- Integrating the CFS-IS component into the Content Engine allows it to scale automatically as the number of Content Engines scale.
- Changing the security inheritance implementation such that it utilizes appropriate caching, and evaluates the security settings dynamically. In the IBM FileNet P8 3.5.0 release, the security inheritance was simulated by copying information asynchronously. For folder hierarchies with many objects, this resulted in delays.
- Using content caching and request forwarding in distributed environments. The caching feature of the IBM FileNet P8 3.5.0 Content Engine was limited only to read actions and could not be configured as a write-through cache. The request forwarding feature was not available in Content Engine 3.5.0.
- Introducing a bulk API capability, which when used with a multithreaded application can significantly improve throughput.

See the following document for high-level information on configuring an IBM FileNet P8 environment for high performance:

[ftp://service.boulder.ibm.com/software/data/ECM/WP/IBM\\_ECM\\_CS\\_CM\\_WP.pdf](ftp://service.boulder.ibm.com/software/data/ECM/WP/IBM_ECM_CS_CM_WP.pdf)

See the following document for specific information on tuning an IBM FileNet P8 environment based on the specific needs of an individual site:

[ftp://ftp.software.ibm.com/software/data/cm/filenet/docs/p8doc/40x/p8\\_v4\\_performance\\_tuning.pdf](ftp://ftp.software.ibm.com/software/data/cm/filenet/docs/p8doc/40x/p8_v4_performance_tuning.pdf)

## Stability

IBM has a mature software development process that all core software products are required to comply with. The process requires that all features be clearly defined, and that a quality plan is created and formally approved. The quality plan identifies the success criteria that must be satisfied before the product can be released. Having undergone the full IBM product development process, the IBM FileNet P8 4.5.0 release satisfied all the success criteria and shipped with no significant defects still open against it.

A by-product of this rigorous development process is seen in the reduction of incoming Problem Management Records (PMR) rates for the IBM FileNet P8 suite. An analysis of the PMR data shows a 25% PMR reduction against P8 4.5.x compared to P8 4.0.x, as well as a significant reduction of approximately 30% in the severity of the reported PMRs.

The development teams adopted agile development and test methodologies, which required a deeper – and earlier - engagement with users, and which gave the teams a better understanding of how new features will be used.



As part of embracing the agile methodologies, specialized development and test teams were formed to focus on the following key areas:

- Installation and upgrade across the IBM FileNet P8 suite
- System verification test (SVT)

The SVT team focuses on testing that the IBM FileNet P8 components work appropriately together, and uses configurations that mimic customer environments, including server farms, highly available environments, single-sign on, and so on.

- Longevity, stability, load, and performance testing

This team runs tests in isolated environments to ensure that new functionality does not impact overall performance and stability, and to validate that performance improvement goals are met.

The results of this testing help improve the SCOUT modeling tool that is used to size new environments.

In addition to ensuring that the product components are stable and functioning correctly, the test teams pay particular attention to verifying and enhancing the product documentation.

## Best Practices

A common theme behind successful IBM FileNet P8 4.5.x deployments has been seen to be meticulous planning and preparation. For installations, this planning and preparation includes, at a minimum, ensuring that all prerequisites are completed and verified prior to starting the installation.

Derived from successful IBM FileNet P8 4.5.x installations to date is a set of best practices, which have been documented in a white paper:

[ftp://ftp.software.ibm.com/software/data/cm/filenet/docs/p8doc/45x/WhitePaper\\_BPIU.pdf](ftp://ftp.software.ibm.com/software/data/cm/filenet/docs/p8doc/45x/WhitePaper_BPIU.pdf)

It is strongly recommended that anyone involved in an IBM FileNet P8 software installation or upgrade familiarize themselves with this white paper prior to the start of their installation project, and follow its guidelines. It is crucial to understand and appreciate that installing or upgrading IBM FileNet P8, which is an enterprise-wide application that integrates with existing infrastructure elements including database servers, LDAP servers, and application servers, and as such, significant up-front planning is necessary.

When installation best practices are not followed, the most common problems that occur are as a result of the following:

- Not having a proper project team in place to run the planning and execution of the installation or upgrade project.
- Not completing or verifying all prerequisite tasks prior to starting the software installation or upgrade.

When prerequisite steps are either not completed or not completed properly, the installation process is delayed and in some cases, portions of it need to be redone.

However, a successful deployment of IBM FileNet P8 requires more than the successful installation of the product; the project team must also plan for the on-going maintenance of the environment, which might include:

- Training, or re-training, existing personnel
- Documenting site-specific installation and maintenance procedures and requirements

## Key Documents

A tremendous amount of information is published for the P8 environment, but learning how to navigating the information and finding key information can be daunting.

When planning an installation or an upgrade refer to the following documents:

- [Hardware and Software Requirements](#)  
Provides specific information on the underlying technologies provided for each component in the P8 suite, as well as minimum space and memory requirements
- [Plan and Prepare Guide](#)  
Provides specific information on preparing an environment for a P8 installation. There are tasks that need to be completed for your network, database servers, operating systems, and application servers.
- Installation and Upgrade Worksheet  
The worksheet can be downloaded from the following page: <http://www-01.ibm.com/support/docview.wss?uid=swg27010422>  
The spreadsheet looks intimidating at the outset; but use the macro on the Instructions tab to generate a worksheet tailored to your needs.
- [The P8 InfoCenter](#)  
Use the search capability in the site to find the information you are looking for, or navigate through the table of contents. The content of this site can also be accessed using generally available search engines such as Google.  
The documents are also provided on the following web site:  
<http://www-01.ibm.com/support/docview.wss?uid=swg27010422>
- [Performance Tuning Guide](#)  
Use the information in this document to optimize your P8 environment. For BPF installations, also refer to the following document:  
[ftp://ftp.software.ibm.com/software/data/cm/filenet/docs/bpfdoc/41x/BPF\\_Performance\\_Tuning\\_Guide.pdf](ftp://ftp.software.ibm.com/software/data/cm/filenet/docs/bpfdoc/41x/BPF_Performance_Tuning_Guide.pdf)
- [High Availability Technical Notice](#)  
Use this document to plan and implement a highly available P8 environment.

## Benefits of IBM FileNet P8

Information about the IBM FileNet P8 suite and the various bundles that are available is available at

<http://www-01.ibm.com/software/data/content-management/filenet-p8-platform/>

## New Features in IBM FileNet P8

Besides the changes made to improve the consumability, stability and performance of the P8 suite, many new features have also been introduced. New feature information is available in the P8 release notes

- P8 4.5.0 release notes  
[ftp://ftp.software.ibm.com/software/data/cm/filenet/docs/p8doc/45x/p8\\_450\\_release\\_notes.pdf](ftp://ftp.software.ibm.com/software/data/cm/filenet/docs/p8doc/45x/p8_450_release_notes.pdf)

- P8 4.5.1 release notes

[ftp://ftp.software.ibm.com/software/data/cm/filenet/docs/p8doc/451/p8\\_451\\_release\\_note\\_s.pdf](ftp://ftp.software.ibm.com/software/data/cm/filenet/docs/p8doc/451/p8_451_release_note_s.pdf)

## FileNet Content Manager V4.5.1

- The Content Engine and Application Engine can both be scaled horizontally or vertically in cluster or farm configurations. The Content Engine is a J2EE application so it can utilize the application server capabilities like connection pooling and LDAP authentication.

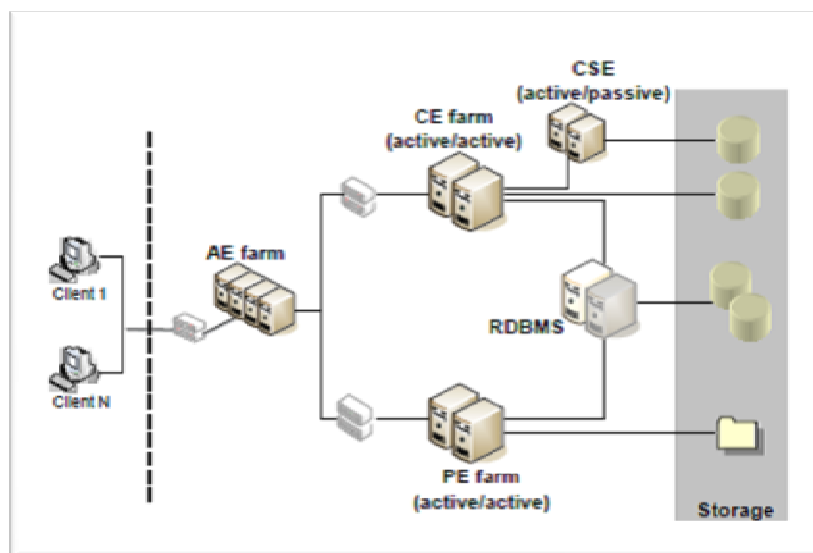


Figure 1. Architectural Scalability

- The Process Engine can now be farmed horizontally across multiple servers and be configured as an Active-Active cluster.
- The full-text Content Search Engine was previously integrated within the Content Engine. This component can now be run on separate servers and can be clustered or farmed as required. The Autonomy K2 system dashboard can be used to configure and monitor search indexing.
- Improved consumability for installation and upgrades - includes numerous enhancements focused on making the installation and upgrade process faster and simpler.
- Delivers a comprehensive BPM system with enhanced, integrated tools and capabilities to support full process automation and optimization lifecycle, including process design, simulation, and analytics.
- Accelerates collaborative development of extensible and configurable business solutions by providing standards-based Enterprise 2.0 components with Mashups and widgets as part of the Agile ECM Framework.
- Integrates with multiple repositories to manage and leverage unstructured content as part of process management, including IBM Content Manager Enterprise Edition V8 (CM8) and IBM FileNet Content Manager V4.5.
- Manages the full lifecycle of digital content and unstructured information, including advanced document management, security management, and storage management through IBM FileNet Content Manager V4.5.
- Provides the ability to actively manage content and federate metadata across the enterprise, regardless of the repository in which it resides, through Content Federation Services.

- Expanded platform support - supports new directory servers, e-mail-like (UPN) logon names and de-duplication of content.
- The Content Engine uses the application server protocols IIOP and T3 for communication and also supports the Java and .Net API's.

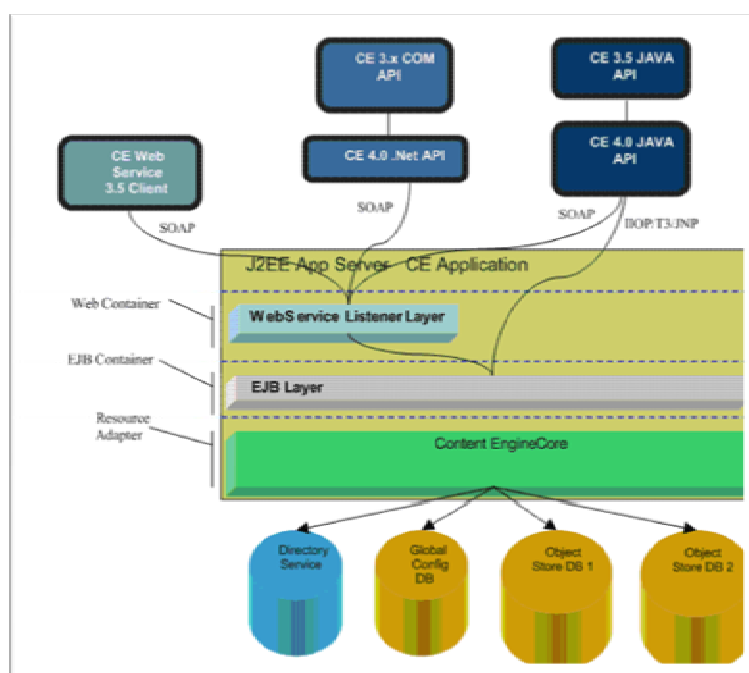


Figure 2. Communication Protocols

- Improved consumability for application deployment - includes numerous enhancements focused on making the application deployment faster and simpler.
- The Content Engine Object Store databases can now be created by specifying the database instance, partitions and table spaces used for the content and indexes within the object store. The database indexes can be better utilized by separating tables that contain multi-valued properties.
- IBM FileNet Rendition Engine - provides currency via an update of the Rendition Engine, which adds support for running with SQL Server 2008 and Windows® 2008 (both 32 bit and 64 bit), as well as fix issues reported from the field.
- Supports industry standards, including Darwin Information Typing Architecture (DITA) for designing, writing, managing, and publishing information on an XML architecture; Business Process Modeling Notation (BPMN) for process modeling; XML Process Definition Language (XPDL) for definition and execution of process semantics.
- Includes free limited use licenses for WebSphere Application Server V6.1 and DB2 Workgroup Server Edition V9.5 database software.
- The Content Engine can be configured to use different search index servers within a single object store. The Content Search Engine index servers can be run on separate hardware thereby improving content search retrieval performance. Index collections can also be clustered on different servers.
- Content Engine 4.5.1 also makes use of in-memory temporary database tables while performing searches which provides a significant improvement to full-text search performance.

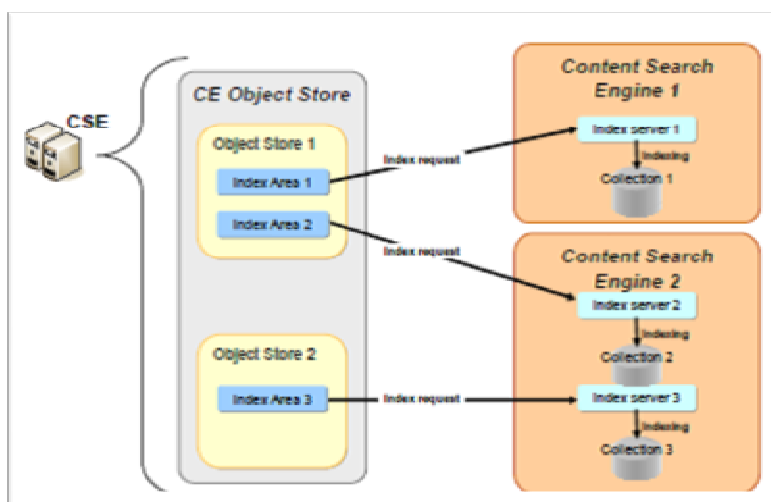


Figure 3. Sample Content Search Engine Configuration

### Extended platform capabilities

- A major advance in P8 4.5.x over P8 3.5 is the vastly-increased platform support, including support for a wide variety of operating systems, databases, application servers and directory servers. These include the operating systems AIX, Solaris, HP-UX (HP9000 and HP Integrity), Linux (for the CE and AE), Windows and Linux on System z. Virtualization support is now available on IBM LPARs/WPARs, Sun Zones, VMWare and Hyper-V.
- Windows Server 2008 and Windows Server 2003 64-bit edition are now supported so the server components no longer have the 3 GB memory limitations and problems found with 32-bit Windows.
- Database support includes Microsoft SQL, Oracle, and DB2 (LUW) and DB2 on z/OS.
- Introduction of Oracle Internet Directory, Sun Java Directory, IBM Directory, Novell eDirectory and Microsoft ADAM LDAP support broadens the FileNet Content Manager support for directory servers.
- Support for User Principal Name (UPN) or e-mail-style logon name
- Logging on via UPN or e-mail-like values, strings with a pattern like 'xxx@yyy.zzz', and use such strings as P8 user or group short names is supported as of P8 4.5.1. This support benefits customers who choose UPN logon names as their authentication standard. Fully qualified UPN and e-mail like names normally are unique, stable, and easy to remember, making it a reasonable choice as the logon name.
- FileNet Content Manager V4.5.1 provides de-duplication support for content ingested into P8 regardless of the source. Support for de-duplication of content elements saves storage costs and improves performance for duplicate content elements stored in the repository.
- Support for Centera dynamic logging facility - prior to V4.5.1, users had to restart the Centera server for logging. P8 FileNet Content Manager V4.5.1 leverages Centera dynamic logging and eliminates the need to restart server for logging information.
- Support for the DR550 device with Tivoli® Storage Manager, added in Content Manager V4.5 service pack 2, and remains supported in V4.5.1.

### FileNet Business Process Manager V4.5.1

- Supports Active Content, where content is made available to users at the right time in the right format without them having to search for it.

- Delivers content management and content centric processing capability on an integrated, open platform with extensive functionalities, enabling you to manage the full lifecycle of complex business processes dealing with critical unstructured information assets within the enterprise.
- Leverages latest innovations in Web 2.0 contextual collaboration and composite application technology as part of the Agile ECM Framework to deliver a compelling design experience for IT and business users.
- Provides components to extend the powerful content centric processing capabilities with process design and simulation environment, smart electronic forms, rapid application development framework, process monitoring dashboards and complete with application and database servers.

### ECM Widgets to run in WebSphere Business Space

- Delivers and supports Business Space as the Agile ECM Framework for building, deploying, and executing content-centric business processes, allowing superior integration capabilities with content.
- Enables faster time-to-value by empowering business and IT to create and share their own spaces, or logical groupings of multiple Mashup pages that comprise a business process, application, or collaborative end-user experiences.
- Allows faster creation of BPM solutions by providing a set of out-of-the-box templates, which provide pre-integrated process capabilities for an enhanced user experience.
- Includes WebSphere Business Space as a core component, supporting a common, flexible user interface and collaboration platform across the IBM BPM Suites.
- ECM solutions are assembled through a combination of ECM Widgets, which come pre-wired to automatically display and work together with your ECM data.



Figure 4. ECM Widgets

### Enhanced integration with IBM Content Manager (CM8)

- Enables XML import/export of event subscriptions in System Administration Client to support moving definitions from one IBM CM8 system to another system
- Improves usability by providing automated drop-down list for selection of IBM FileNet BPM processes and workflow data fields in CM8 Administration Client
- Enhances Content Extended Operation API to support rich IBM Content Manager V8 data model allows retrieving and updating of child attributes at as many levels deep as allowed



by the data model. Allows retrieval of different part types and different part numbers of a particular part type.

### **IBM FileNet Business Process Framework**

- Empowers the user to achieve faster deployment of process applications while minimizing custom coding.
- Provides built-in work distribution and case management capabilities to handle role-based work queues, search, prioritization and sorting of incoming tasks.
- Supports multiple object stores and offers new case management tools, allowing knowledge workers to merge, split, or reclassify a case, for greater deployment flexibility and business agility.

### **IBM FileNet eForms**

- Offers browser-based thin-client eForms that are tightly integrated with IBM FileNet Business Process Manager and IBM FileNet Content Manager.
- Provides an intuitive and powerful design environment with a single point-and click user interface for enterprise eForms design without requiring code or backend scripts.
- Creates highly intelligent, high fidelity eForms that become the user interface to business processes so that they can be created, launched, received, and processed more quickly and efficiently.

### **IBM Cognos Now! Limited Edition**

- Delivers operational dashboards to continuously monitor key performance indicators (KPIs) and process metrics from IBM FileNet BPM.
- Provides real-time event processing and alerting capabilities through visually rich and customizable dashboards, allowing greater agility in responding to business changes.
- Offers self-service dashboards with embedded query, reporting and analysis, tightly integrated with IBM Cognos 8 BI, providing up-to-date, actionable intelligence for rapid, fact-based decision making.
- Helps you realize lower total cost of ownership and achieve rapid deployment through a prepackaged software appliance.

### **Integration with Office 2007**

- IBM FileNet 4.5 now includes full integration with Office 2007 for FileNet operations such as adding documents, check-ins and check-outs. The FileNet Rendition Engine now supports the Office 2007 file format.

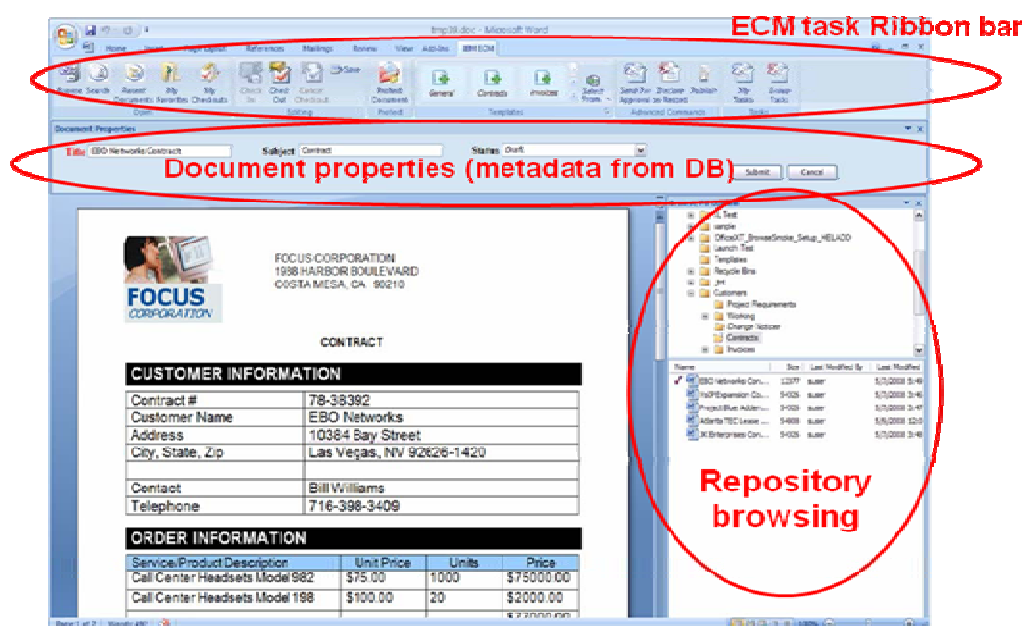


Figure 6. Integration with Microsoft Office 2007

### IBM FileNet Connector for Microsoft Visio

- Accelerates FileNet BPM implementation by allowing you to leverage investments in Visio by importing legacy or BPMN workflow diagrams into IBM FileNet Process Designer for process simulation, deployment, and execution.
- Increases mapping accuracy and process modeling consistency across the enterprise by providing BPMN stencil and template to use in Microsoft Visio.

### IBM FileNet Connector for Microsoft SharePoint 2007

- IBM FileNet 4.5 integrates with SharePoint document repositories. The connector allows content to be browsed, moved and copied between the SharePoint and FileNet repositories. A connector is also available for SharePoint web parts, which enables FileNet functionality to be available from within SharePoint.

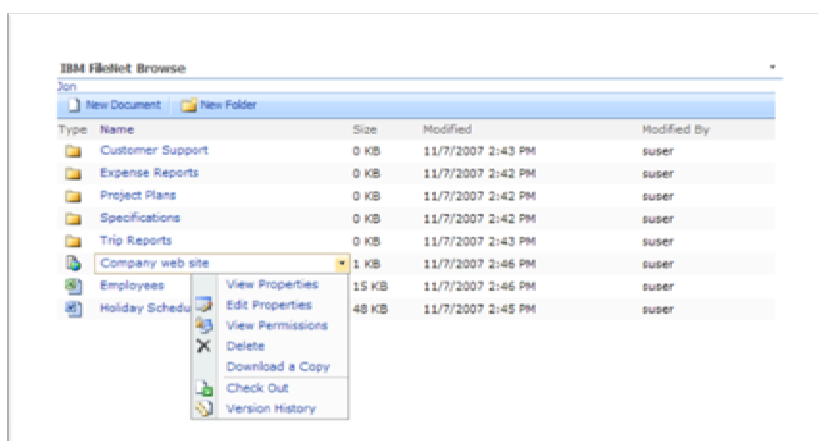


Figure 7. Integration with Microsoft SharePoint 2007



## Architectural diagrams

**IBM FileNet P8 Architecture**  
HIGH LEVEL VIEW

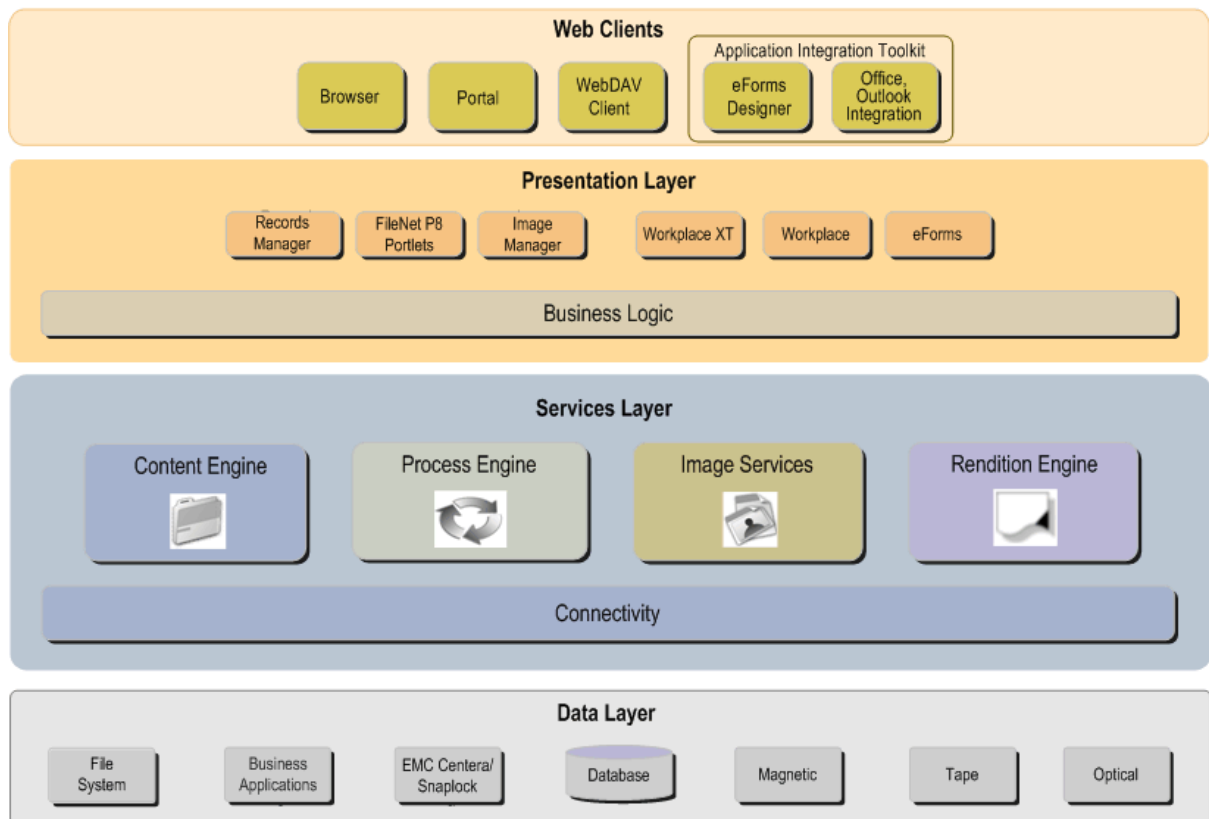


Figure 8. IBM FileNet P8 - High Level View

**IBM FileNet P8 Architecture**  
DETAIL VIEW

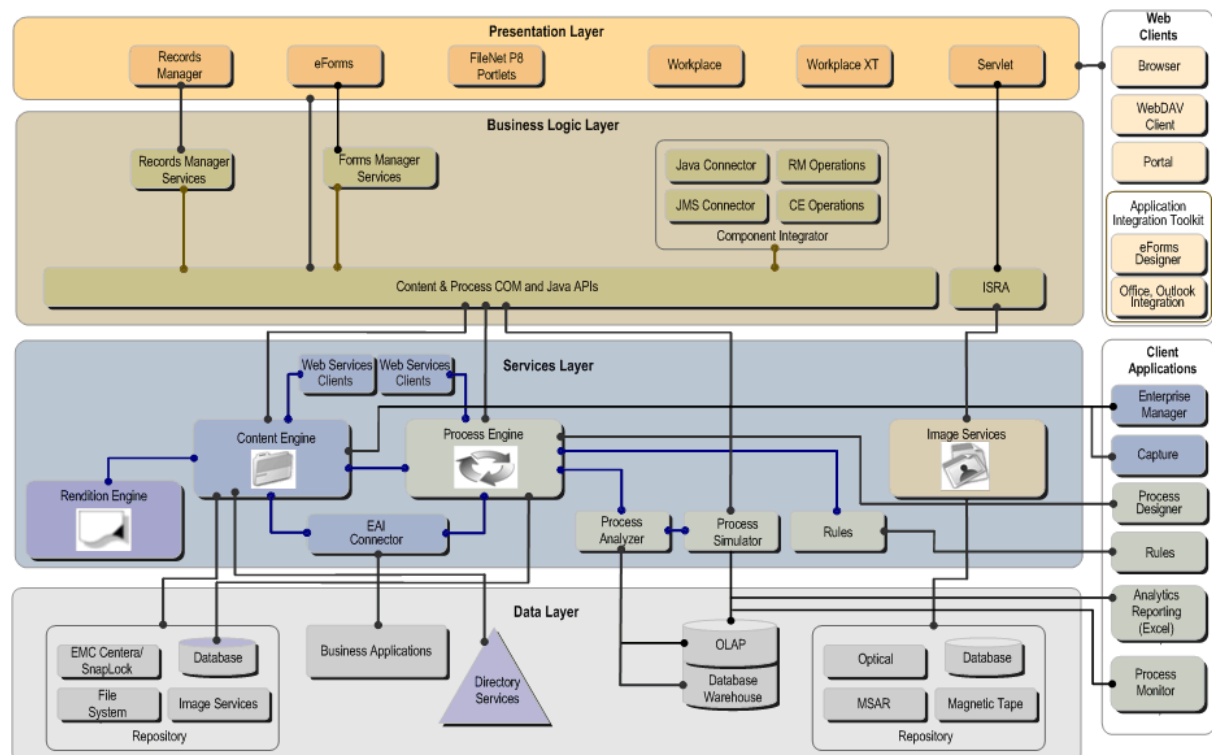


Figure 9. IBM FileNet P8 – Detail View