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ISV Integrations

Methods for Integrating Documentum with a 3rd-Party Enterprise Application

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Blue Fish Development Group

Objective

Provide guidance for developing successful integrations to Documentum

- Business factors
- Technical factors

Contents

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- About Blue Fish
- Planning your integration
- Accreditation: Designed for EMC²
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About Blue Fish

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Focused on ECM

We help companies manage and extract value from their intellectual assets

Experience

In our 8th year of solving difficult content management problems

Expertise

Expertise across the Documentum platform; host the dm_developer community

Client Centric

"Be Smart, Be Nice, Get Things Done"

DESIGNED FOR EMC
EMC²
EMC² Documentum²

dm_developer
An Online Resource for Documentum Developers

Blue Fish ECM Practices

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Web Content Management

- Focus on empowering business users
- Attention to ease of use, standardization, and consistency

Custom ECM Solutions and Integrations

- Focus on unleashing clients' unique competitive advantages
- Attention to supportability and upgradeability

Content Migrations

- Focus on retaining value of intellectual assets
- Attention to migration of regulatory docs in validated environments

Information Access

- Focus on helping clients access and analyze their most critical information
- Attention to top-line business improvements

Blue Fish ECM Software

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Web Content Management

- Focus on empowering business users
- Attention to ease of use, standardization, and consistency

Navigation Manager for Web Publisher

- Enables business users to manage web site navigation

Custom ECM Solutions and Integrations

- Focus on unleashing clients' unique competitive advantages
- Attention to supportability and upgradeability

Bedrock™

- Reusable code library
- Enables rapid, high quality solutions

Content Migrations

- Focus on retaining value of intellectual assets
- Attention to migration of regulatory docs in validated environments

DIXI™ and Migration Workbench™

- For full spectrum of migration challenges

Information Access

- Focus on helping clients access and analyze their most critical information
- Attention to top-line business improvements

Documentum Adapter

- Enterprise and inter-application information access

Custom ECM: ISV Services

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- Specialize in enterprise integrations to Documentum
  - *Several complete to date*
- Provide strategic guidance to maximize the value of the integrated product:
  - *Gather and refine functional requirements*
  - *Identify integration targets from the Documentum product suite*
  - *Architect DfE-compliant technical approaches that emphasize partner synergies with EMC|Documentum*
- Provide implementation, QA, and packaging

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The 4 steps

- Step 1: Survey the Documentum landscape
  - *Content Server*
  - *Webtop*
  - *Retention Policy Services*
  - *Content Intelligence Services*
  - *Trusted Content Services*
  - *…*
- Understand the universe of possible integration targets

The 4 steps

- Step 2: Identify synergies
  - *How does integrating to XXX improve your product?*
  - *How does integrating to your product improve XXX?*
- Successful integrations add value to the products on both sides of the integration
  - *Fosters support*
  - *Promotes sales activity*

The 4 steps

- Step 3: Develop use cases and define high-level requirements
  - *End-user use cases*
  - *Administration use cases*
  - *Physical requirements*
- Step 4: Define data owners
  - *If possible, define **one** owner for any given type of data*

Getting started

- Identify your implementation team(s)
  - *Logistic impact of geographically disperse teams can influence design*
  - *Team talents may influence design*
- Formulate a test strategy
  - *Functional test plans can be built from use cases **before** system design is complete!*
  - *Helps identify holes in use cases*

Important factors to consider

- Performance
  - *How long does the integrated functionality take to execute?*
- Scalability
  - *How does the system scale with large data sets and user loads?*
- Maintainability
  - *Does the design facilitate maintainability? How?*
- Data “Freshness”
  - *How quickly must data changes appear in the other system?*
- Fault tolerance
  - *How does the integration handle communication problems between the systems? What happens if an error is encountered while processing in one system?*

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Designed for EMC: What is it?

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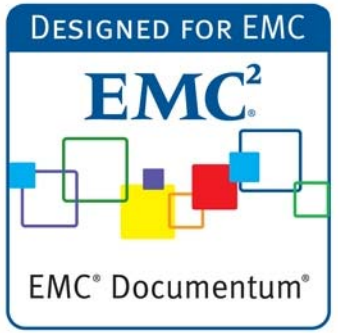
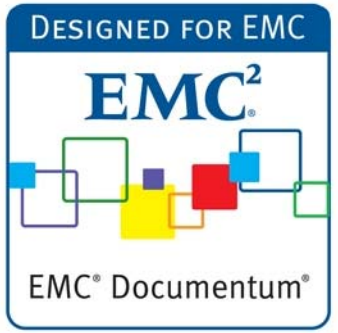
- Accreditation program for partner solutions built on EMC
- Ensures that solutions are strategically aligned with current and future Documentum products
  - *Promotes partner synergies*
  - *Drives revenue for partner and for EMC*
- Ensures that solutions are technically sound
  - *Reduces technical risk*
  - *Signifies compatibility with the greater EMC|Documentum ecosystem*



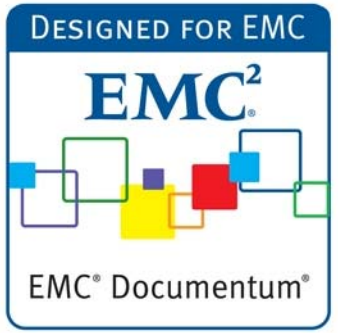
ISV Integrations and Designed for EMC

- DfE is especially important for ISV integrations
  - *Strategically: A well-executed implementation enables EMC and the partner to sell into each other's install base*
  - *Technically: Because ISV integrations often occur at the "platform" level,*
    - Soundness is extra-critical
    - Interaction with other Documentum-based applications is likely
- EMC QuickStart ISV: A program that guides partners through the design and architecture of integrations



DfE Technical Design Principles

- Content representation
  - *Content and metadata must be stored in the Documentum Repository*
  - *Permissions must be modeled in the repository*
  - *Establish clear ownership of content*
- Content access
  - *Content should be accessed by means that preserve business rules and processes associated with the content*
- Compatibility
  - *Naming conventions, object name registration*
  - *Compatible with EMC-supported platforms*
- Platform utilization



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Integration layers

- Database
  - *SQL, stored procedures*
- Docbase
  - *DFC, DQL, API*
- BOF
  - *TBOs, SBOs, Web Services (WSF)*
- Application
  - *WDK*

Why integrate with the BOF?

- Packaging
  - *Code is nicely encapsulated in SBOs and TBOs*
  - *Distribution via the global registry*
- Modularity
  - *SBOs and TBOs can be readily reused*
  - *Facilitates unit testing*
- Services (SBOs) can be published as Web Services
  - *Decouples integration*
  - *Facilitates communication in heterogeneous environments*

Communication

- DFC APIs
  - *Highly performant for java-based integrations*
  - *Promotes tightly-coupled integrations*
- Primary Interop Assemblies (PIAs)
  - *For tightly-coupled .NET-to-DFC integrations*
- Web Services
  - *Loose coupling—enables different teams to work on each end of the integration*
  - *Facilitates testing—complete end-to-end environment not necessary for most tests*
  - *Ease of use*

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Data synchronization

- Data synchronization: a classic enterprise integration challenge
  - *How can we ensure the integrity and "freshness" of mutable data across multiple systems?*
- Recommended approach:
  - *One system is the master*
  - *Use multiple synchronization tactics to maximize integrity while maintaining performance*
- Lots of unit testing

Synchronization tactics

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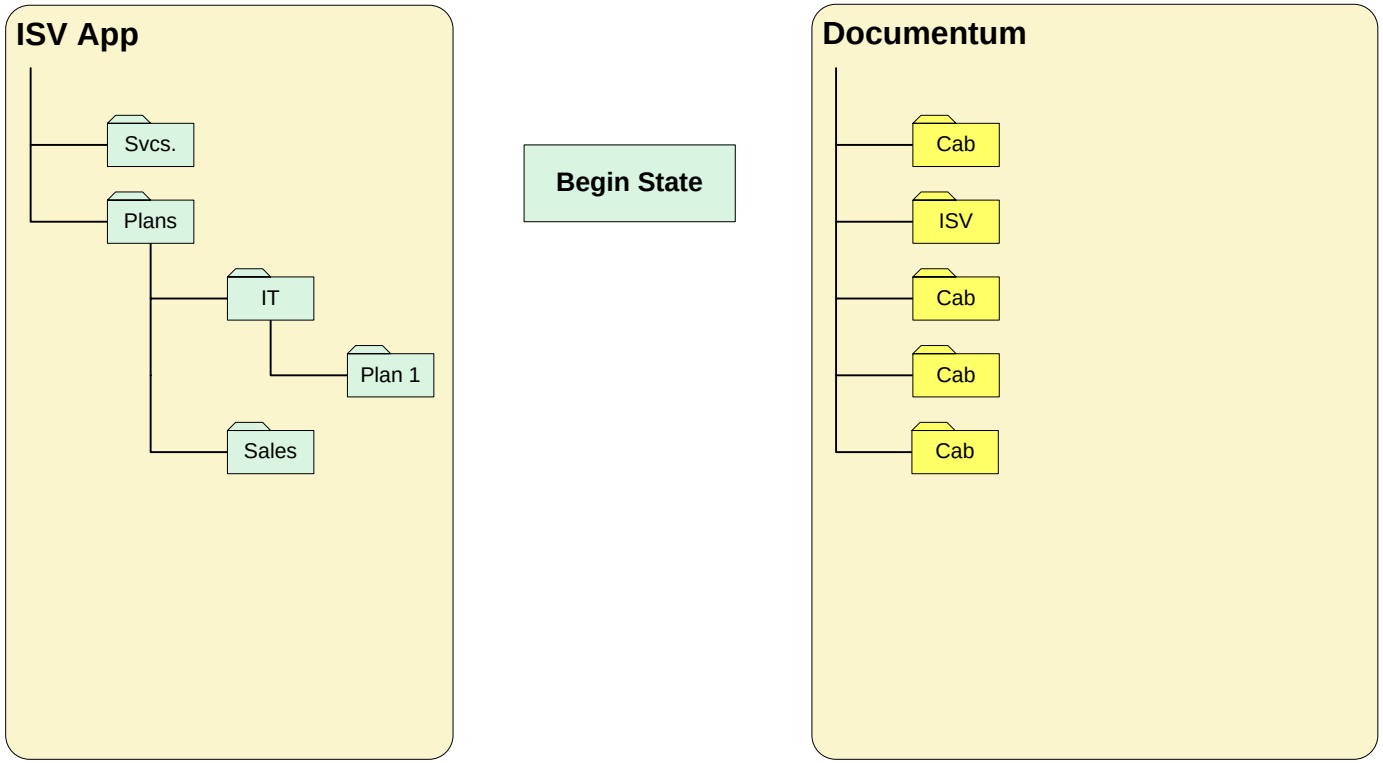
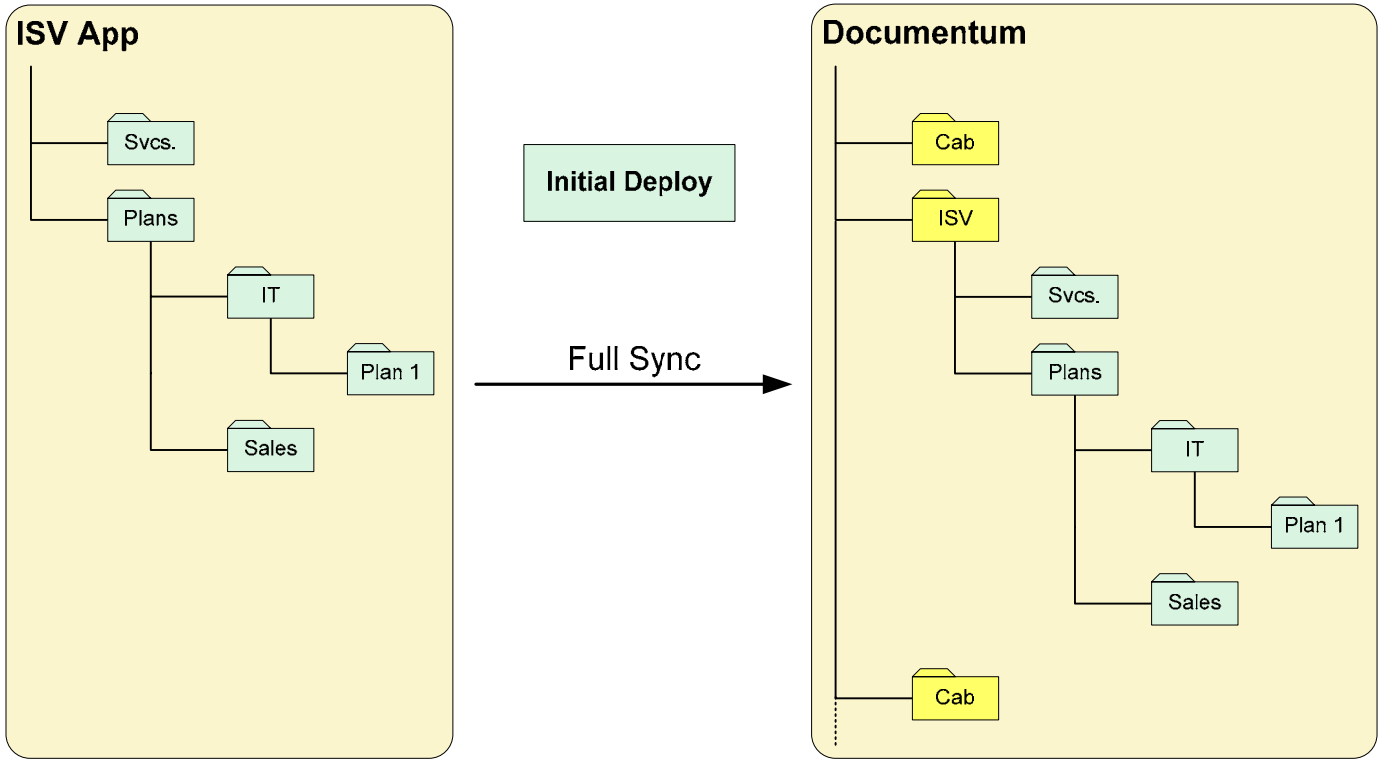
- Asynchronous synchronization
  - *Processed in the background*
  - *Suitable for data sets of any size*
  - *Good for establishing "known-good state"*
- Synchronous synchronization
  - *Transactional operations*
  - *Suitable only for small amounts of data*
  - *Good for synchronizing data in real time as it changes*

Synchronization example



Synchronization example



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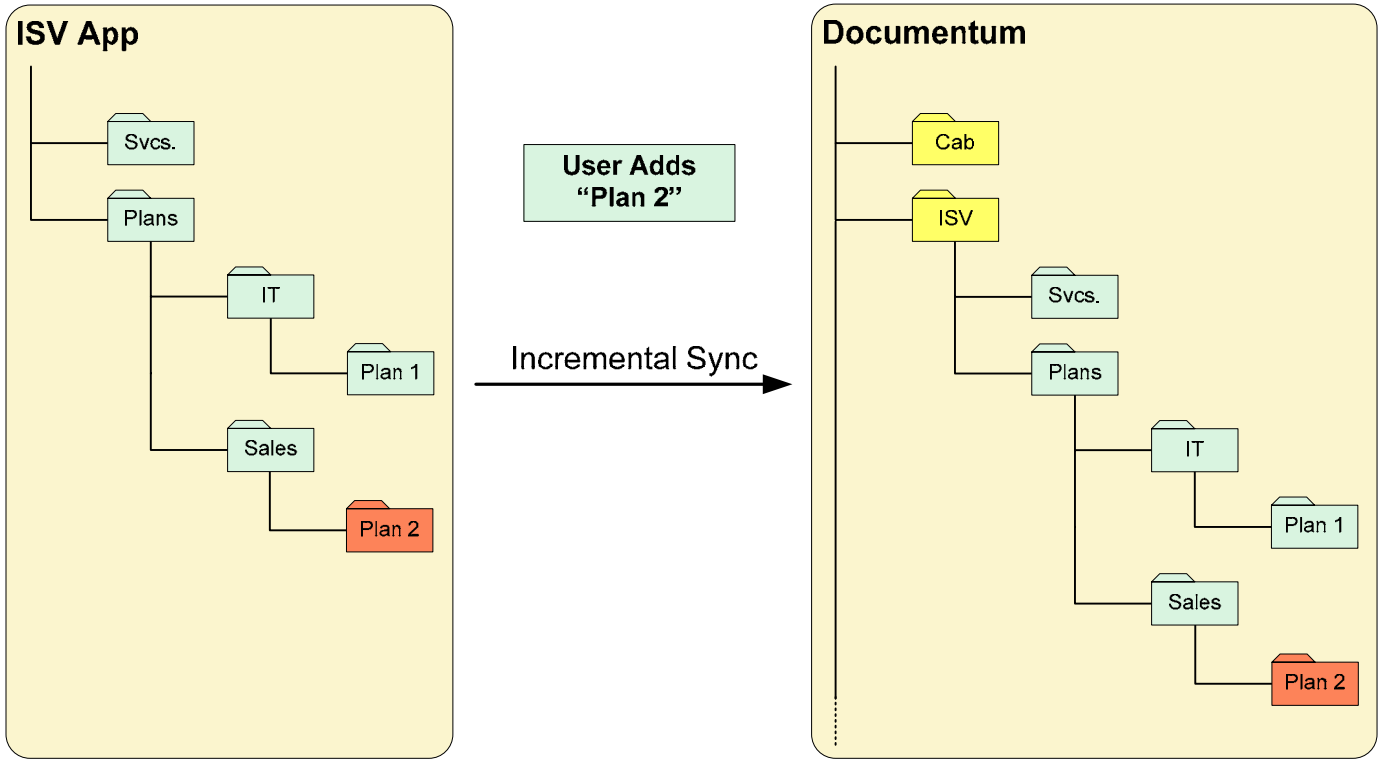

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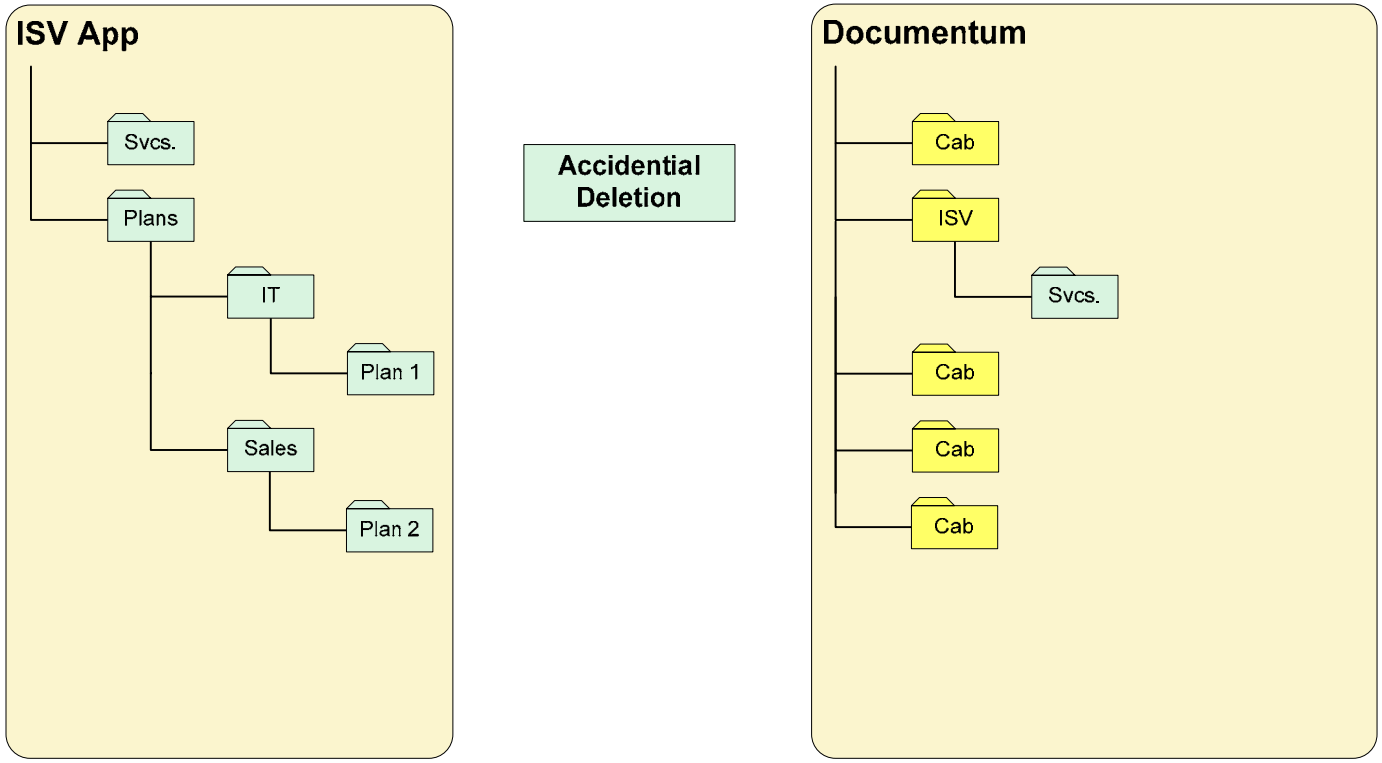

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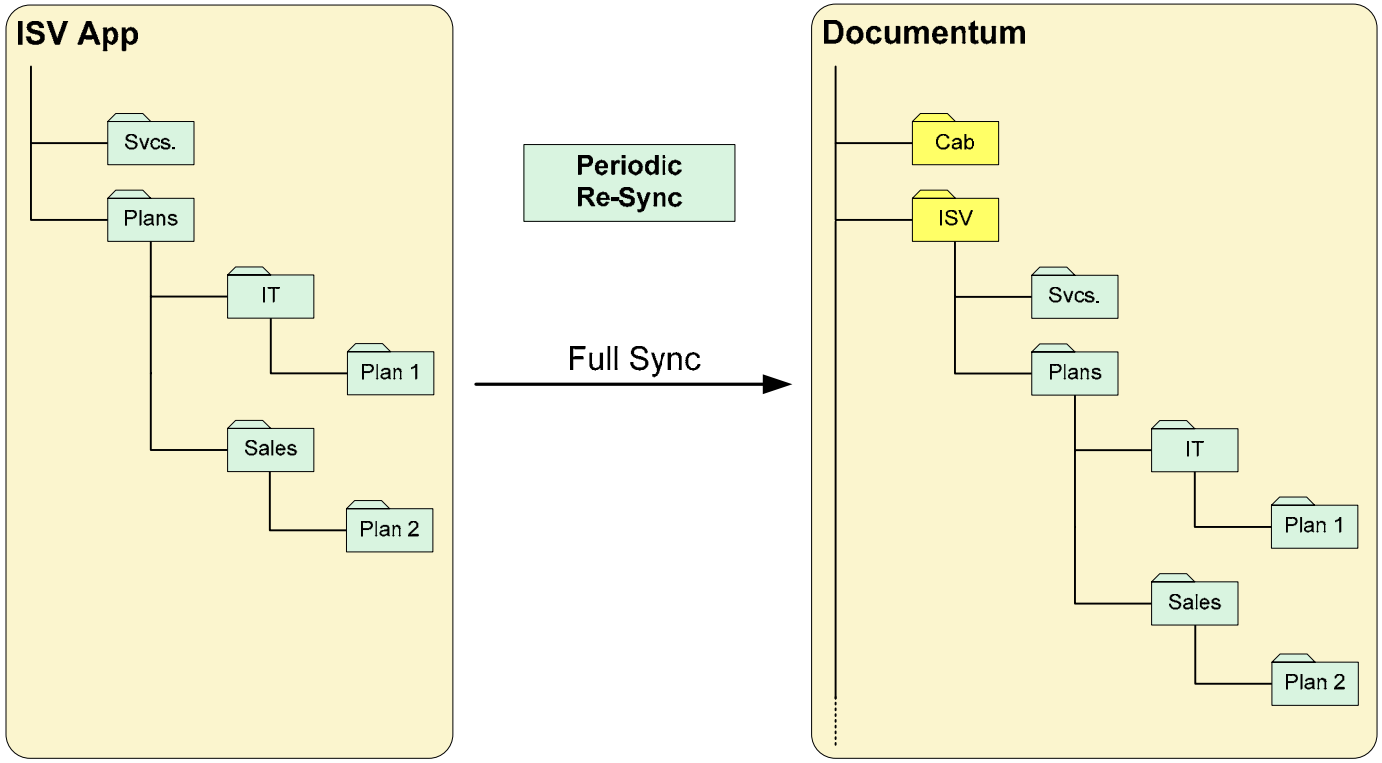

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Security

- Authentication
  - *Process of establishing a user's identity*
    - Built-in: OS authentication and LDAP
    - Customization options:
      - Authentication plugin (Content Server)
      - Authentication schemes (WDK)
- Authorization
  - *Process of granting a user permission to perform a given function*
    - Documentum uses Access Control Lists (ACLs) to perform authorization
    - Customization is typically not feasible (*Permissions must be modeled in the repository*)

Modeling permissions

Two scenarios:

1. *Integration target uses ACLs for permissions*
   - Security model is explicitly defined
   - The foreign ACLs can typically be mapped to Documentum ACLs
     - May require manipulation if the foreign ACLs have different evaluation semantics
     - May require Trusted Content Services to fully re-create the permissions model in Documentum
2. *Integration target uses another method for permissions*
   - Security model is implicitly defined by rules
   - Authorization requires evaluating a series of conditions according to the security rules

Reconciling security models

- Transform a rules-based model to an ACL-based model
  - *Builds an explicit security representation from an implicit model*
  - *The foreign application must evaluate permissions for each subject (user or group) on a given object*
- Can be an expensive operation
  - *The foreign system must calculate permissions for each object*
  - *Can lead to ACL proliferation in Documentum*

Speeding up security

- Caching
  - *Foreign application may be able to cache the explicit model for subsequent synchronizations*
- Create a permissions hash
  - *The hash is an ACL signature*
  - *Enables the system minimize security changes*
- Use groups
  - *Smart usage of groups can reduce security overhead*

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UI integration

- UI integration can be used to:
  - *Facilitate flow between the integrated applications*
  - *Provide a consistent look-and-feel across the integrated environment*
- Do **not** embed business logic in the UI integration
  - *UI code is typically only used for a given application; other Documentum applications would not evaluate UI-level business logic*

UI integration

- Various levels of UI integration possible:
  - *None: integration all in the back end*
  - *Low: common authentication; URLs link the applications*
  - *Medium: new themes; branding*
  - *High: WDK components extended/replaced to access integration functions*
- We have found that the “Low” level often gives the best bang for the buck
  - *Easy to do*
  - *Provides users with a good use story*

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In summary…

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- Work with the DFE and partner ISV groups to align the integration with EMC offerings
- Identify use cases
- Define single data owners
- Test early and often
- Use the BOF as your primary integration point
- Explore using hybrid tactics for data synchronization
- Be aware that your security model may impact performance
- Use UI integration techniques to improve user experience