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Preface

Purpose of this guide

The purpose of this guide is to describe the integration of Domino.Doc™ and Domino™ Workflow. The guide addresses the major areas where the integration of these two products requires additional activities or understanding beyond what you need to use either product separately.

Audience for this guide

The audience for this guide is anyone who needs to understand how to integrate Domino.Doc and Domino Workflow for their environment. It is intended for those who need to understand the special considerations for their roles when integrating the components and functions.

This guide assumes that you are already familiar with the Domino.Doc and Domino Workflow products.

Related documentation

The information in this guide addresses only the subject of integrating Domino.Doc and Domino Workflow.

For more information about using Workflow in the Domino environment, refer to

- Domino Workflow Migration Guide
- Domino Workflow Installation and Administration Guide
- Domino Workflow User’s Guide
- Domino Workflow Process Designer’s Guide
For more information about using Domino.Doc, refer to

- *Domino.Doc Administrator’s Guide*
- *Domino.Doc User’s Guide*
- *Domino.Doc Installation Guide*

These guides are provided in database form on the installation disk, in addition to the printed books shipped with Domino.Doc.

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**Organization of this guide**

This guide contains the following topics:

- Introduction to Integrating Domino.Doc and Domino Workflow
- Domino.Doc and Domino Workflow Integration Features
- Installation Considerations
- Setting up Domino.Doc and Domino Workflow to Work Together
- Sample Scenarios
Chapter 1
Introduction to Domino.Doc and Domino Workflow


Lotus Domino Workflow 2.1 and Lotus Domino.Doc 3.0 ship with a set of features that allow an easy integration for customers who want to use both systems. These features allow rapid development and deployment of workflow processes that address document management needs.

About Domino.Doc

Lotus Domino.Doc is a document management solution that adds advanced capabilities for Knowledge Management to the Lotus Notes® and Domino environments, making documents available to every user across the organization. It supports distributed document management, and handles the complete life cycle of documents — authoring, review, approval, distribution, and archiving. Built on top of Lotus Notes and Domino, it leverages the power of Domino to provide replication, scalability, flexibility and security services.

Domino.Doc is designed to handle files created and maintained by external applications such as image viewers, word processors or presentation software. Domino.Doc offers users many features:

- Users can open and save their documents from within their native applications because Domino.Doc supports ODMA clients.
- Alternatively, users can use a Web browser, or a Lotus Notes Client with the Desktop Enabler, to retrieve and manage their documents.
- Users can also store documents on cheap mass media storage through Domino.Doc archiving and retrieval processes.
- Because Domino.Doc offers open interfaces for customization, many solutions and add-ons are available both from Lotus and Business Partners.
About Domino Workflow

Domino Workflow is a Workflow Development and Management System for designing electronically-driven processes such as customer orders, design reviews, and expense reports. Domino Workflow automates your daily business procedures and assists in coordinating tasks between work groups. Business processes are modeled on the basis of the existing document flows, and are enhanced by the ability to modify them.

Domino Workflow extends your existing Lotus Domino and Notes™ environment to handle both structured and ad hoc workflow processes.

About integrating Domino.Doc with Domino Workflow

Domino.Doc and Domino Workflow are a natural partnership. Now you can leverage all of the robust document management capabilities of Domino.Doc and the powerful workflow management capabilities of Domino Workflow. Store and manage documents throughout their life cycle within Domino.Doc, then use Domino Workflow to design and manage processes to route those documents and your work within your enterprise. Documents created through Domino Workflow processes can be stored and managed in Domino.Doc, while document management applications requiring more structured workflow can leverage the capabilities of Domino Workflow.

Lotus Domino.Doc with Domino Workflow integrates the life-cycle management of documents with the management of structured business processes:

- Domino.Doc provides life-cycle management for the creation, review, approval, and archiving of documents.
- Domino Workflow provides a rich solution to address workflow management.

The integration of Domino.Doc with Domino Workflow means that:

- Domino Workflows that are based on documents and files can now leverage the capabilities of Domino.Doc.
- Domino.Doc applications that require more structured workflow can now leverage the capabilities of Domino Workflow.

Integration results in added features in each product that provide important application points without added programming. For more advanced needs, each product provides the ability for additional customization and integration.
In Domino.Doc these added features include:

• Starting workflow jobs from Domino.Doc
  Workflow jobs can be started from within Domino.Doc. This is accomplished by associating workflows with Domino.Doc Events by using a new section in the Document Type definition form. When the respective Event is completed, the associated workflow job starts automatically.
  Workflow jobs can also be started manually by the user. The list of processes that are available for such a manual initiation can also be specified in the Document Type settings of the Domino.Doc document.

• Finding related workflows from Domino.Doc
  A new tab has been added to Domino.Doc for Domino Workflow integration. Users can find workflow jobs associated with the current document.

In Domino Workflow these added features include:

• Linking Domino.Doc documents with Domino Workflow documents
  Based on ready-to-use design elements, Domino Workflow designers can easily create workflow documents that link to Domino.Doc documents. Users can view files stored in Domino.Doc directly from the workflow user interface. They can also switch back and forth between Domino Workflow and Domino.Doc to check out documents or to review older versions, for example.

• Searching documents in Domino.Doc for related Domino Workflow documents
  Depending on the context of a workflow job, such as a customer name or contract ID, you can let Domino Workflow search against Domino.Doc and make the results available to workflow participants.

• Controlling Domino.Doc documents from Domino Workflow
  You can let a workflow job take full control of a file handled in Domino.Doc. All other users can only read the document while it is being processed by a workflow. Intermediate drafts and versions can be preserved in Domino.Doc for later retrieval. After being processed, the document can be made available to Domino.Doc users again.

• Archiving Domino Workflow documents to Domino.Doc
  You can use Domino.Doc as an archive for documents that have been created or processed by a workflow job. This feature allows you to take advantage of the Domino.Doc document life-cycle management and the advanced archiving technologies available in Domino.Doc.
When does it make sense to integrate Domino.Doc and Domino Workflow

Both products offer a unique feature set and value to your organization and can be used independently. In many scenarios, however, one of the products perfectly complements the other.

- Domino.Doc can complement Domino Workflow
  Domino.Doc is designed to handle many types of documents, both Notes-based and non-Notes. Integration allows Domino Workflow to take full advantage of Domino.Doc features such as distributed document locking, version control, ODMA support and archiving for all kinds of documents.

- Domino Workflow can complement Domino.Doc
  Domino.Doc already has the built-in capability to create *ad hoc* workflows for review and approval cycles. However, documents often must be handled by other complex recurring procedures to assure quality. Domino Workflow offers a rich set of features to set up and manage these predefined processes. It offers an intuitive and yet powerful graphical design tool, and a purely Notes-based runtime environment featuring deadline enforcement, access right management and organization modeling.

Lotus Domino.Doc 3.0 and Lotus Domino Workflow 2.1 ship with features that allow an easy integration for customers who want to leverage both systems. These features allow rapid design, development and deployment of workflow processes that address document management needs.
Chapter 2
Domino.Doc and Domino Workflow integration features

This section describes the key features of the environment of Domino.Doc and Domino Workflow integration:

- Initiating workflows
- Domino.Doc Access Profiles
- Archiving
- Automated Activity Search
- Automated Activity CheckIn/CheckOut
- Automated Activity Archive

Initiating workflows

There are two different ways of initiating workflows from Domino.Doc:

- Event-based initiation
- Interactive initiation

**Event-based initiation**
In an event-based initiation, an event that occurs within Domino.Doc initiates a new workflow. Predefined settings in the Domino.Doc Document Type determine the event(s) that will cause the initiation, such as the check-in of a new document, or the moving of a document from one binder to another. The initiation happens automatically, in the background, without any user interaction. The initiation does not happen instantaneously, but rather with the next background agent scheduled for the Workflow application database. If a new job was started non-interactively, the first activity of the process has to be claimed by one of the potential Activity Owners.

This initiation type is used for the Expense Report sample scenario.
Interactive initiation

Interactive initiation of Domino.Doc Workflow is one explicitly triggered by the end user who accesses a Domino.Doc document. The user must open the Workflow tab of a document and select a process from a list of available processes. The new Workflow is then initiated immediately, with the user switched over to the Domino Workflow application. The user automatically becomes the Activity Owner of the first activity.

The Domino.Doc Library Administrator enables this feature for a given Domino.Doc Document Type. The administrator can also elect to limit a document type to use dedicated processes only, or define which processes are available.

This initiation type is used for the Web site Publishing sample scenario.

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Domino.Doc Access Profiles

Domino Workflow applications allow you to define Domino.Doc Access Profile documents. They are used to store access passwords to Domino.Doc. The profiles are necessary when integrating Domino.Doc with Domino Workflow because Domino.Doc file cabinets are protected by Notes security. The security mechanism requires a user to log in and be authenticated as a Domino user for any Domino.Doc operations using the Domino.Doc API.

All integration features that require the running of automated activity agents are based on the Domino.Doc API. For these agents, Domino.Doc access information (that is, account name and password) must be available.

Access information must be stored in a secure way, such that this information may not be used by other users to get access to data or functionality that they are not entitled to use. Domino.Doc Access Profiles are created to store Domino.Doc account information safely within the Domino Workflow application database.

Access Profiles are managed from within the Application Setup document.

All Domino Workflow end-user features are implemented without using the Domino.Doc API. They are executed on the access rights of the end user. Examples of end-user features are launching or viewing Domino.Doc documents from the Domino Workflow application user interface.
Archiving

After a workflow job is completed, the corresponding documents are often required to be archived:

- Some workflows run in high volumes and create a large number of documents. Typical example processes are help-desk or time-reporting workflows. An archive procedure allows them to clean up databases.

- It is often required to make the outcomes of a workflow accessible for later retrieval. The order documents created throughout an order processing workflow may, for example, be needed for sales analysis.

- Some workflows require preserving workflow information for later retrieval. An example may be a career assessment workflow that has to be reviewed in order to find out who has approved a promotion.

To use Domino.Doc as an archive for Domino Workflow processes may be useful in some scenarios. An organization may use Domino.Doc as the main structure for archiving, and as a front-end to archive systems. Integrating Domino Workflow into this context may allow a better integration into the existing infrastructure and lower administrative costs. Domino.Doc also provides a single user interface for searching within Domino.Doc databases that may be utilized to query historic workflow information, as well.

Domino Workflow has a ‘built-in’ archive procedure that allows mailing of documents to an archive database once a job is completed. For more information refer to the Domino Workflow documentation.

However, in order to use Domino.Doc as an archive for workflow documents another approach was chosen. Instead of the standard archive feature, an Automated Activity Agent is provided. All binder documents that are routed to an automated activity based on this agent are automatically archived into a Domino.Doc file cabinet. All documents that have been created as part of the Workflow can be recreated within a Domino.Doc file cabinet, and the original documents removed from the Workflow application database.
Automated Activity Search

Domino.Doc allows you to store large volumes of documents and to make them available throughout an organization. Searching for specific documents is a very common task for users to take advantage of the document store. Workflows often involve searching as well such as locating customer records or searching for contract information.

The Automated Activity Agent DD Search allows you to design workflow processes that automatically search for documents that are related to the context of a workflow job. The search results can then be provided to workflow participants. You can, for example, design an order process that automatically searches for earlier orders from the same customer. Because the search is conducted by the server as an integral part of the workflow processing, users do not have to wait for the search results, but can instantly access them.

The DD Search agent is based on the standard automated activity template delivered with Domino Workflow. For more information on the template, refer to the Domino Workflow documentation. It searches the workflow binder for a search request, executes this search request and creates an additional workflow binder document containing the search results.

Automated Activity CheckIn/CheckOut

Most of the features for integrating Domino.Doc and Domino Workflow are based on the assumption that Domino.Doc handles a document, whereas Domino Workflow links to this document. However, in some scenarios it might be useful to keep the files within Domino Workflow while in use by a workflow job, thus gaining full access control to the file by Domino Workflow.

A set of automated activities is available that allows you to check out a document from Domino.Doc and attach it to a workflow document. The document stays in a checked-out state within Domino.Doc so that other users cannot concurrently edit the document. The workflow document that contains the attachment can be used and processed as any other document within a workflow binder. If it is necessary to store intermediate states of the document, a copy of the still attached document can be checked into Domino.Doc as a new version or draft. After the process is completed, the attachment can be automatically detached and checked back into Domino.Doc.
Five agents are provided for automated check-out activities:

- DD Check Out and Attach
- DD Check In as Version
- DD Check In as Draft
- DD Check In as Version and Detach
- DD Check In as Draft and Detach

All DD Check agents are based on the standard automated activity template delivered with Domino Workflow. For more information on the template, refer to the Domino Workflow documentation.

All agents follow this pattern:

1. Log in to Domino.Doc using the OLE API.
2. Locate the first reference to a Domino.Doc document within the workflow binder.
4. Perform required action.

**DD Check Out and Attach**

This agent checks out a document from Domino.Doc and attaches the file to a workflow document. The document is checked out under the name of the user specified in the access profile. The title of the working copy is changed to reflect the name of the job that has checked out the document. The title also contains an ID.

**Note** As this agent may process several workflow jobs at the same time, a conflict may arise: two or more processes may want to check out the same document. As all these check-outs happen on the same user account, the agent issues an ID and codes it into the title of the checked out document. All DD Check agents respect this ID as a second-level locking mechanism. Only one job can check out the same document at any time.

**DD Check In as Version**

This agent checks in a copy of the attachment that was added by a DD Check Out and Attach agent beforehand. A new version is created in Domino.Doc. After creating the new version, the document is checked out again. As a result, the file is still owned by the workflow job and the attachment is still within one of the workflow binder documents. However, the current state of the document is available to other users or for later retrieval within Domino.Doc.
DD Check In as Draft
This agent works the same way as the DD Check In as Version agent. However, the attachment is checked in as a new draft instead of being checked in as a new version.

DD Check In as Version and detach
This agent checks in a copy of the attachment that was added by a DD Check Out and Attach agent beforehand. A new version is created in Domino.Doc. In contrast to the DD Check In as Version agent, the Domino.Doc document is not checked out again. It therefore becomes fully available within Domino.Doc again. The agent also removes the attachment form the workflow document, as the file is now owned by Domino.Doc again.

DD Check In as Draft and detach
This agent works the same way as the DD Check In as Version and Detach agent. However, the attachment is checked in as a new draft instead of being checked in as a new version.

Automated Activity Archive
Domino Workflow has a built-in archive procedure that allows you to mail documents to an archive database once a job is completed. In order to use Domino.Doc, however, for archiving workflow documents another approach was chosen. Instead of using the standard archive feature, an Automated Activity Agent has been provided.

Automated Activities can be used to execute a server program, an agent, or to send a mail within a process. The Automated Activity Archive is based on a ready-to-use agent. If this agent is assigned to an automated activity, copies of all binder documents are created in an archive database, with the archive method based on parameters that are defined in the application setup document. The documents are automatically removed from the Workflow application database by the agent.

All binder documents that are routed to an automated activity based on this agent are automatically archived into a Domino.Doc file cabinet. The original documents will be removed from the workflow application database.

Two alternative ways of archiving workflow documents are provided:

- Using one archive Binder for all jobs
- Creating one Archive Binder for each job
Using one archive Binder for all jobs
Using the first approach, blueprints of all workflow documents are created within the same binder in the same file cabinet. To preserve workflow information, the cover document is archived using a purposely designed document type (DWF Archive Cover) that contains profile fields for information such as job owner, or due dates.

All other binder documents are copied as rich text. For these documents a purposely designed document type is used as well (DWF Archive Document). This type, however, contains only a few profile fields in order to help sort the document within the binder and to recover information. All user-defined fields are not transferred on a field level; the archive procedure only generates a forward-style rich text based on the form that was assigned to a document when the archiving takes place.

To display all documents in a similar style as within the workflow database, a purposely designed folder layout is available (DWF General Archive Binder).

Creating one Archive Binder for each job
The second approach for storing archive document supported by the Integration kit, does not store all blueprints of workflow documents within one large binder, but creates a new Domino.Doc binder for each job. Instead of transferring the cover document information into a Domino.Doc document, the information is transferred into the binder profile (DWF Job Archive Binder). All other workflow documents are archived in the same way as in the first alternative.
Chapter 3
Installation considerations

This guide assumes that Domino.Doc and Domino Workflow have both been installed and configured. Domino Workflow and Domino.Doc do not need to be installed at the same time, but both must be installed for integration. The integration requires Domino Workflow 2.1 (or higher) and Domino.Doc 3.0 (or higher).

If the Domino.Doc library and the workflow databases are installed on the same Notes server, the full functionality is available. Both systems may be installed on different servers as well; however, only Notes clients — not HTTP clients — can be used in a multi-servers environment.

In order to follow the steps described in this guide, you need to have appropriate access rights to both systems. Within Domino Workflow you should have Application Designer or Application Owner level and in Domino.Doc you must be eligible to administer the library database and to create file cabinets.

End users need to have access to the Domino.Doc Library as well as to the Domino Workflow databases. Some features require the Domino Desktop Enabler to be installed on the server hosting the Application database.

- For more information on installing Domino Workflow, refer to the Domino Workflow Migration Guide.
Server requirements
In general, the integration between Domino.Doc and Domino Workflow is available on all platforms that support Domino.Doc and Domino Workflow. There are, however, some limitations for non-Windows NT servers:

- All basic integration features, such as interactive and event-based job initiation from Domino.Doc, or linking back and forth between Domino.Doc documents and Domino Workflow documents, are fully supported for all server platforms that run Domino.Doc and Domino Workflow.

- The Automated Activities for Archive, Search and CheckIn/CheckOut that are delivered with Domino Workflow as a part of the integration work are based on the OLE API of Domino.Doc. Because the automated activity agents run on the server that hosts the Domino Workflow application, this API has to be available for the LotusScript® environment of this server. Therefore, non-Windows NT machines cannot run the automated activities.

Client requirements
- HTTP client with Web browser

The integration will run on clients that are supported by Domino.Doc as well as Domino Workflow.

Software requirements
- Domino Workflow 2.1 or higher
  For more information on requirements for Domino Workflow, refer to the Domino Workflow Migration Guide.

- Domino.Doc 3.0 or higher
  For more information on requirements for Domino.Doc, refer to the Domino.Doc Installation Guide.
Chapter 4
Setting up Domino.Doc and Domino Workflow

In order to allow an integration between Domino.Doc and Domino Workflow, several parameters have to be specified within the Domino Workflow Application database. All these settings are contained in the section Domino.Doc Integration Setup that is part of the Domino Workflow Application Setup document.

This section describes how to set up the integrated features of Domino.Doc and Domino Workflow:

- Setting up Access Profiles
- Setting up Archiving
- Setting up Search
- Setting up Automated Activity Search
- Setting up CheckIn/CheckOut
- Creating Forms That Reference Domino.Doc

Setting up Access Profiles

This section describes how to manage Domino.Doc Access Profiles when integrating Domino.Doc with Domino Workflow. These profiles are used to store user and password information that are necessary for running Automated Activities.

Note If you are not using Automated Activity Agents, you do not have to specify any Access Profiles.

The user interface displays all Access Profiles that have been predefined, and to which a user has at least reader rights. The Open button opens the selected profile, the New button creates a new profile, and the Delete button deletes the selected profile. In some situations, an additional refresh button is displayed to refresh the entries within the list.

Domino.Doc Access profiles are protected by a reader field. The reader field guarantees that no one can see (or edit) the document except the users listed in the reader field. Server agents run on the access rights of the person who has signed them. Therefore this person has to have read access to the Domino.Doc Access Profile required by the agent.
The Profile allows you to define these access levels:

- **On the high security level**, a user with role [Process Server] can read the document. This role is reserved within the Workflow application to be assigned to Servers. In this scenario, the signer of the agents must have the role [Process Server]. The document is replicated to other servers as well. As database managers can assign themselves the role [Process Server], they can access the user name and password information.

- **On the low security level** all users with the role [Process Reader] can read the document. Every user of the Workflow database is supposed to have this role. This setting may be useful for Domino.Doc accounts that are used only for anonymous read access.

- **If you select custom settings** you can define who has read access to an access profile. Note that an automated activity agent using this profile must have access to it.

No matter which security level is chosen, no real-life user accounts should be used. It is easier to manage and more safe to use accounts that have access only to the Domino File cabinet and not to other databases as well.

**Default Access Profile**

In this section you have to specify the location of the Domino.Doc library that is being referred to by the application database. This library will be used to resolve links from Domino Workflow to Domino.Doc. When a workflow document contains a reference to a Domino.Doc document, the referenced document always has to be located in this Domino.Doc store.

The Domino.Doc Library may be located on the same Notes server or another Notes server. If it is located on another server, the server name has to be entered using its fully qualified hierarchical name.

**Note** If the Domino.Doc Library is located on a server other than the Domino Workflow Application database, only Notes Clients can be used to view and open links; Web clients cannot work with this setting.

To specify the file path or Replica ID of the Library database, use the Location Dialog. If you want to specify the Domino.Doc Library by path, you have to use a path statement that is relative to the Notes Data Directory on the server.

If you want users to able to open or view referenced Domino.Doc documents, the settings in this section have to be completed.
Access Profile for Automated Activities DD CheckIn/CheckOut

In this section you can select an Access Profile to be used by the Automated CheckIn/CheckOut activities. You can select a profile from the list of Access Profiles defined in the Domino.Doc Access Profile. As Access Profiles are usually protected by Reader fields, you can access only those profiles that you have access to yourself.

Note You do not need to select an Access Profile if you are not using the Automated CheckIn/CheckOut activities agents.

Access Profile for Automated Activity DD Search

In this section you can select an Access Profile to be used by the Automated Search Activity. You can select a profile from the list of Access Profiles defined in the Domino.Doc Access Profile. As Access Profiles are usually protected by Reader fields, you can access only those profiles that you have access to yourself.

Note You do not need to select an Access Profile if you are not using the DD Search agent.

Settings for Automated Activity DD Archive

To specify the Archive Settings, refer to “Setting up Archiving” below.

Note You do not need to select an Access Profile if you are not using the DD Archive agent.

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**Setting up Archiving**

In order to archive workflow documents to a Domino.Doc file cabinet you must make some preparations:

1. Choose your archiving type.

   You have to decide whether you want to archive all workflow documents within one Domino.Doc binder or whether you want to create a Domino.Doc binder for each workflow binder. The choice depends on the given situation and personal preferences. The first approach will generate a large binder, whereas the second approach will generate a large number of binders.

2. Define a user account that will be used by the automated activity.

   The automated activity agent DD Archive uses the Domino.Doc OLE API to create documents within Domino.Doc. As Domino.Doc is fully based on Lotus Domino security mechanism, the agent has to authenticate itself against the Domino.Doc database. Therefore you have to select an existing user account, or create a new one, that will be used by the agent.
**Setting up the Domino.Doc infrastructure**

The steps for the next procedure depend on the binder usage you will use, one binder for all jobs, or separate binders. Perform A or B, accordingly:

Procedure A: If you have chosen to use one archive binder for all jobs:

1. Create a new file cabinet or modify an existing one, noting the name of the file cabinet (for example, Workflow Archive).
2. Within the file cabinet setup, allow the binder type DWF General Archive Binder and the document Types DWF Archive Document and DWF Archive Cover.
3. Allow editor access to the file cabinet for the ID that you have chosen.
4. Open the file cabinet and create a new binder, noting the name of this binder (for example, Sample Workflows).

Procedure B: If you have chosen to create a new archive binder for each job:

5. Create a new file cabinet or modify an existing one.
6. Within the file cabinet setup, allow the binder type DWF Job Archive Binder and the document Type DWF Archive Document.
7. Allow editor access to the file cabinet for the ID that you have chosen.

**Setting up the Domino Workflow infrastructure**

1. Open the Application Setup document in edit mode and go to the Domino.Doc Integration Setup section.
2. Create an Access Profile for the ID chosen.
4. For Archive access profile choose the access profile that you created for accessing the archive file cabinet.
5. For Cabinet, choose the file cabinet name that was set up.

If you have chosen the Use one Archive Binder for all jobs option, then you also have to specify a binder name. Enter the name of the binder that you have created.

If you have followed these steps your archive is completely configured. Your workflow application database will now be able to host any process that uses an automated activity based on the Domino.Doc Archive agent. You can create such an Automated activity using the Workflow Architect. For the automated activity, choose LotusScript Agent and DD Archive in the Actions tab.
The archive parameters are specified in the Application Setup Document for the Automated Activity agent. Both documents use the same section and parameters. The Archive Access profile defines which authentication is used to archive documents.

For more information on designing processes and automated activities, refer to the Domino Workflow documentation.

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**Setting up Search**

The DD Search Agent searches the workflow binder for a search request, executes this search request and creates an additional workflow binder document containing the search results. A search request can be contained in any of the workflow binder documents. It is indicated and specified by a set of fields described in the table below. You can cut and paste these fields from the (OS DD Search Setup) subform contained in the Workflow Application database.

<table>
<thead>
<tr>
<th>Field name</th>
<th>Value Range</th>
<th>Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>DDSearchExecute</td>
<td>“yes”, fixed value</td>
<td>This field acts as a flag for a search request. The DD Search agent skips through the binder and stops with the first document that contains this field with the value set to Yes.</td>
</tr>
</tbody>
</table>
| DDSearchCriterion| Text. Must be a valid full text search criterion | This field contains the query that will be executed by the DD Search Agent. You can compute the query by using a computed field. This allows you to make the query dependent on field values, for example:

```
"FIELD Customer_Name = \"\" + Customer_Name+\"\"
```

| DDSearchMaxDocs  | number                           | This number limits the number of hits returned on the query. Set to 0 to return all matching documents. |

Usually you will include these fields in a form that is being used in a workflow activity that happens before executing the Automated Activity. This allows you to compute the Search Criterion independently of the job context.

The Expense Report Sample process contains a sample application of this feature.

The search results are presented by using the DD Search Report form, available in the Workflow Application database. For more information on how to use this form refer to the Domino Workflow documentation.

**Note** Large result sets may contain more information than the form is able to handle. Therefore you should limit the maximum number of hits to be returned to a reasonable number.

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**Setting up Automated Activity Search**

The DD Search agent uses the Domino.Doc OLE API to search against Domino.Doc. Therefore this feature is available only for Notes Servers running on Windows NT. It also requires that the desktop enabler software is installed and available. For information on how to install the Desktop Enabler, please refer to the Domino.Doc Installation Guide.

In order to specify name, password and login path for the DD Search agent, you have to assign an Access Profile to the agents. This is done in the Application Setup document. Within the Domino.Doc Integration section of the document, access profiles can be defined and one of them can be assigned to the DD Search agents. Then the workflow application database can host processes using automated activities that are based on the DD Search agents. You define such an Activity in the Architect by creating an automated activity, choosing the type LotusScript agent and assigning one of the agents.

**Note** Automated Activities cannot print into the server log. If an error occurs the job owner is informed via e-mail. If the binder does not contain a search criterion, the automated activity is skipped. If no Domino.Doc matches the search query, this is reported in the DD Search Report document that is added to the binder.
Setting up CheckIn/CheckOut

The DD CheckIn/CheckOut agents use the Domino.Doc OLE API to check in and check out documents. Therefore this feature is available only for Notes Servers running on Windows NT. It also requires that the desktop enabler software be installed and available. For information on how to install the Desktop Enabler, please refer to the Domino.Doc Installation Guide.

In order to specify name, password and login path for the DD CheckIn/CheckOut agents, you have to assign an Access Profile to the agents. This is done in the Application Setup document.

Within the Domino.Doc Integration section of the document, access profiles can be defined and one of them can be assigned to the DD CheckIn/CheckOut agents. Once this is done, the workflow application database can host processes using automated activities that are based on the DD CheckIn/CheckOut agents. You define such an Activity in the Architect by creating an automated activity, choosing the type LotusScript agent and assigning one of the agents.

The functionality of the agents is based on the assumption that the workflow binder contains a reference to a Domino.Doc document already. Such a reference is automatically created if you initiate a workflow job from Domino.Doc using event-based or interactive initiation. However, you can also manually insert a reference or use another automated activity.

**Note**  Automated Activities cannot print into the server log. If an error occurs, the job owner is informed via e-mail. If the binder does not contain a reference, the automated activity is skipped. If a document cannot be checked out, an error is reported, but the activity will be repeated until it is finally successful.

Creating forms that reference Domino.Doc

To create a form that can be used within a workflow for referencing Domino.Doc, you can include the OS DD Connector subform. This subform assumes that the ID of the referenced Domino.Doc document is stored in the Domino.Doc DocumentID field. It also assumes the availability of a display field for Title, Type, Filename, and parent binder. If a document is initiated by an interactive, or event-based initiation, all these values are passed automatically.

If you want to create a different user interface for linking to Domino.Doc, you can copy the functionality into different design elements such as actions or buttons. The open profile and view agents require only that the Domino.Doc DocumentID field is available.
Chapter 5
Sample Scenarios

Domino.Doc and Domino Workflow ship with pre-configured Design elements to run two sample processes. These processes provide examples for an application of the integration features. They can be used as a quick introduction to the topic, as well as providing samples for using specific integration features. It has to be emphasized that the sample processes are not intended to be instant custom applications.

To use the samples, perform the sample environment installation described in the next section.

Setting up the sample environment

In order to run the sample processes, you need to install the Sample databases shipped with the Domino Workflow 2.1 (or higher) installation. Both Domino Workflow and the Domino.Doc environment have to be installed and completely set up.

You also need Administrator Access to both the Domino Workflow and the Domino.Doc environment.

Note As restrictions apply for locating the Domino.Doc Library on a server other than where the Domino Workflow databases are located, you should install all on the same server to run the samples.

Setting up the Domino Workflow Environment

If you want to use Web Clients, confirm that the Workflow Application is completely configured:

1. Open the Application Setup Document (View: Administration/1. Application Setup) in edit mode.

2. Open the “Database Setting” section and check the “Application” Settings.

   Make sure that “Servers IP Address” either contains the IP address of your Notes server or its host name. Make sure that the path setting contains the path to the application database relative to the Notes data directory. (You can use the Database replica ID of the sample database instead, if you remove the colon.)
3. Open the “Domino.Doc Integration” section in the lower part of the Application setup document.

   Some features used by the sample processes require agents to log into Domino.Doc using the Domino.Doc OLE API. Access Profiles allow you to store this type of access profile.

5. When the new document opens, enter “Sample Profile” as the profile name.

6. Choose low security as the access level.

7. Choose http as the login type.

8. Enter the login path to your Domino.Doc library.
   This login path is the same as the one that you use when using the Desktop Enabler such as “http://127.0.0.1/DomDoc/demolib.nsf”. Make sure that the path that you enter here works with your desktop enabler.

9. Enter a username and Web password
   You must not use an operational ID to specify these settings! The password information will be available to other users of the sample database as well. In an operational environment this information will be hidden from users.
   Make sure, that the ID and password, that you have assigned for this profile allows you to access your Domino.Doc library and the cabinet that we will be creating on the Domino.Doc side.

10. Close the Access Profile and save it.
    Now you are back in the Application Setup Document.

11. Use the refresh button underneath the Access Profile list.
    The “Sample Profile” should now be displayed in the list.
    If it does not display, your access control list for the application may not be properly set. Please make sure that you are using an ID that has been configured to act as Application Owner.

12. Move down to the “Default Access Profile” heading and enter the location of the Domino.Doc Library. You can use the location button to select the library.
13. Move down to “Settings for Automated Activity Search” and “Settings for Automated Activity Check” and select the “Sample Profile” for both settings.

We do not need to modify any settings in the “Settings for Automated Activity Archive” paragraph, as this feature is not being used in the sample processes.

14. Save and close the Application Setup document.

If the Application database is not set up correctly, an error message may pop up when saving the Application Setup Document: “Path and Replica of the Organization Directory database/Process Definition Database do not refer to the same database.” In this case, take the following steps:

15. Move up to the “Database Settings” section in the upper part of the document.

16. Make sure, the Organization Directory and Process Definition database settings use the same path and replica ID.

You can, for example, delete both path statements and save the document; on saving, it should find the correct path statements that belong to the replica IDs.

17. Switch to the view All Jobs/By Jobname and use the New Job Button.

The initiation Dialog opens and offers you a selection of available processes. This selection must contain the process “Web Site Publishing.” If this is not the case, then your Sample Databases are not configured correctly. Please read the Getting Started Guide and make sure that the Id that you are using is registered in the Organization Directory and is a member of the role Test person.

Setting up the Domino.Doc Environment:

Note Perform all the Setup steps at a Notes Client.

On the Domino.Doc side, the Document Types contain all the setup parameters necessary for using structured workflows. Domino.Doc ships with two Document Types pre-configured for structured workflows: “DWF Expense Report” and “DWF Client Correspondence.” Use this procedure to Workflow-enable these Document Types.

DWF Expense Report

1. Open the Domino.Doc Library database, switch to Administration and open the Document Types view.

2. Open the Document Type DWF Expense Report and switch to edit mode.
3. Move to the section **Workflow Option** at the bottom of the form. Check the following pre-configured settings and correct them as necessary:

- **Location of Application Database**: The replica ID should match with the Replica ID of the Sample Application Database.

  **Note** You can select an Application database using the keyword field button. However, the selection button will work only if the Notes server that you are working on has an up-to-date database catalog.

- **Interactive Initiation**: The setting **Can users initiate a new job interactively?** should be set to No.

- **Event-based Initiation**: The setting **Create a new job on the following events** should be set to On first document check-in.

- **Event-based Initiation**: The setting **Which process is used for event-based initiation?** has to be set to Expense Report (Domino.Doc integration) You can use the selection dialog to select it from the list of available processes.

- **Shared Parameter**: The setting **As what type of document are the reference to Domino.Doc documents added?** should be set to As Main documents.

- **The** **Which profile fields are to be transferred to the reference document?** should be set to All fields.

**DWF Client Correspondence**

Use this procedure to set up the Client Correspondence Document Type.

1. Open the Domino.Doc Library database, switch to Administration and open the Document Types view.

2. Open the Document Type **DWF Client Correspondence** and switch to edit mode.

3. Move to the section **Workflow Option** at the bottom of the form. Check the following pre-configured settings and correct them as necessary:

- **Location of Application Database**: The replica ID should match with the Replica ID of the Sample Application Database.

  **Note** You can select an Application database using the keyword field button. However, the selection button will work only if the Notes server that you are working on has an up-to-date database catalog.

- **Interactive Initiation**: The setting **Can users initiate a new job interactively?** should be set to Yes.

- **Which processes are available for manual initiation?** should be set to All processes.
• **Event based Initiation**: The setting *Create a new job on the following events* should be set to *Never*.

• **Shared Parameter**: The setting *As what type of document are the reference to Domino.Doc documents added?* should be set to *As Main documents*.

To complete the sample environment, set up a sample file cabinet and allow the DWF Expense Report and DWF Client Correspondence to be used within it. You can create a new cabinet, or modify an existing one for this purpose. The User ID that you have assigned to the Domino.Doc Access Profile in the Workflow Application Database must have at least editor rights to this cabinet.

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**Expense report sample**

This sample illustrates how workflows can be automatically kicked off, and how a workflow process can point to a document that is still managed by Domino.Doc.

The sample process is built on the following scenario, in an organization that wants to handle expense reports using a structured workflow:

• If a new expense report is submitted, the secretary has to check its formal correctness. Until the report fulfills the required criteria it passes back and forth between the secretary and the employee.

• Once the expense report is formally correct, it is routed to the manager, who has to approve the expenses, deny them, or require the creator to rework them.

• Some expense reports may be billed to a customer depending on the reason for the expenses and the customer history. The decision whether an expense report is billed is made by the manager as well. Managers can get links to other expense reports previously billed to the customer for decision-support.

• In case the expenses are refunded, all relevant information must be passed to the accounting system.
Process implementation:
1. A user creates a expense report using a spreadsheet application, such as Lotus 1-2-3®. The report is checked into a Domino.Doc file cabinet. Its Document Type requires the user to define whether the expenses were caused by an internal project or a customer project, showing the customer and the project names.

2. On the first check-in event, a new Expense Report Handling process is automatically kicked off. At the first Activity the Secretary checks the formal correctness. For this activity a form has been designed that contains a list of requirements for formal correctness. It also contains the DD Connector subform that allows the user to view the original expense report or to open the document profile (for example, to review older versions).

3. Whether a rework loop is started, or the expenses are submitted to the manager, is based on conditional routing rules. They depend on field values that have been specified by the secretary as well as the project type that was assigned to the expense report by the creator.

4. If the expenses have to do with a customer project, an automated activity is triggered that uses the “DD Search Agent.” Before the workflow binder is passed on to the manager, a full-text search is conducted by a background agent, and the results added to the binder. The search locates other expense reports with the same customer name.

5. After the manager has approved the expenses they are further processed. This sample only uses dummy agents to illustrate this point. In a real-life scenario, data could be passed to the accounting system, relational database records could be updated, and so forth.

6. In case the expenses are rejected, an informational mail message is automatically send to the expense report creator.

Process test:
1. Set up your sample environment.

2. Check in a new document using the “DWF Expense Report” type. You can use any of the available clients for this. You may use any of the available Domino.Doc clients (ODMA, the Desktop Enabler, the Notes or Web client, or the OLE API).
3. The CheckIn Event automatically creates a document within the workflow application database. You can see this document in the view Administration/2. It will be displayed within this view until processed by the server agent “OS Domino Workflow Backgrounder.” This agent creates a new workflow job based on the information passed from Domino.Doc. Once the agent runs, a new workflow binder will be created according to the process definition. It will be available in the Inbox of the potential Activity Owners of the first activity (or in any of the “All Jobs” views).

4. If your ID is member of the group “Testperson,” then you can claim and finish all activities using this one user ID. If you use another ID, you may not have access to the workflow binder.

5. If you open the Main document of the workflow binder, you can see some display information from the original Domino.Doc document, such as its title and type. You can use the links in the same document to open the profile document of the Domino.Doc document, or to launch it directly for viewing.

6. If you switch over to Domino.Doc and open the original document, the Workflow tab is displayed. When you open the tab, it contains links to open the associated workflow documents and to review their status.

Depending on your choices when running an Expense Report job, a workflow binder may get to a status “Automation.” In this case it is waiting to be processed by the “OS Domino Workflow Backgrounder” agent. This agent will automatically trigger the DD Search agent that was assigned to the automated activity within the process design.

How to find out more about how this process was designed:

- Look at Workflow Options settings in the document type definition document of the DWF Expense Report form.
- Look at the form design of the forms that are being used in the Workflow Application, especially at the subform DD Connector.
- Look at the form Expense Approval. In the bottom part it contains the setup for the Automated Activity Search.
- Look the Rework activity to see how to refer to Expense Report Creator.
- Look at the formula for Manager of Expense Report Creator for the approve expenses Activity. Instead of using the static role “Secretary,” the “check formal correctness” activity could be assigned using some dynamics as well.
Web site publication sample

This sample process illustrates how a job can be initiated interactively from Domino.Doc. More importantly, it exemplifies a specific integration pattern:

- A document is stored in Domino.Doc.
- A workflow checks out this document and attaches it to a workflow document.
- The attachment is kept in the workflow system and all access rights are managed from the workflow.
- While the document is processed, it cannot be checked out by another Domino.Doc user.
- During the course of the workflow, new drafts and versions of the document are checked in to capture intermediate states.

The sample process is build on the following scenario:

- An organization has strict approval rules for content that is published to the corporate Web site.
- Every person can request documents to be published.
- The Webmaster first does a rough check, and may require the person to rework the original document.
- Webmasters may also order some legal advice on a specific item to be published.
- After the document has made it through this first stage, a “content” owner has to approve the document.
- The document may be published into different areas of the corporate Web site such as Marketing or Customer Support.
- Depending on this site category the responsible Managers have to give their approval.
- Finally, a lawyer has to check the document for any legal impacts that it might have.
- After the graphics are reworked to suit the corporate ID, the document is finally published.

As the original document may go through rework cycles at each of these steps, intermediate drafts and versions are archived.
Process implementation:

1. Documents are kept in Domino.Doc cabinets. If a user decides that one of these documents should be published, he opens the document profile, switches over to the Workflow tab, and clicks on the list of available processes. All structured processes that make sense for this document type, and that the user is allowed to start, are offered.

2. The user picks the “Web Publishing” process, initiates a new workflow job and is passed over to the first activity of the workflow. The user has to provide a reason for the publish request and define where the document will be published. The user can then finish the activity to submit the Publish request.

3. At the second activity an automated agent automatically checks out the original document from Domino.Doc and attaches the file to the workflow binder. Now the document is locked by the workflow. Other users cannot check out and edit the original document while it is being processed by the workflow.

4. After this phase, the Web Master review cycle is begun. Once the Web master is satisfied, another automated activity checks in the (modified) attachment to Domino.Doc as a draft, and checks it out again. Using this procedure, a snapshot of the document is saved within Domino.Doc, while the file is, however, still owned by the workflow.

5. This pattern is repeated for the other approval steps.

6. Finally the document is published to the Web site and checked into Domino.Doc as a new version. After this step, the document is again available for users to check out again.

How to test this process:

1. Set up your sample environment.

2. Open a document that was created using the “DWF Client Correspondence” Document type and switch to the Workflow tab.

3. Open the link to select from a list of available processes.

4. Select the “Web Publishing” process and initiate a new job. You are automatically passed into the workflow context.

5. Fill in all information required by the form and use the “Save & Complete” Action to complete the Activity.
The workflow binder that has been created is now in the status “Automation.” It is waiting for the “OS Domino Workflow Backgrounder” agent to be processed. This agent is scheduled to run automatically on the server where it triggers the “DD CheckOut and Attach” agent. Once this agent has processed the binder, it will be routed to the next activity waiting in the Inbox of the Web master. The main document now contains the original document as an attachment, and the original document is checked out.

How to find out more about how this process was designed:
- Look at the workflow options settings of the document type defined as DWF Client Correspondence.