



DocuPhase

System Integration Methods Guide

Version 6.1

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Introduction

This *DocuPhase System Integration Methods Guide* is intended to provide an overview of the many types of high-level integration techniques and capabilities which are available for use with the DocuPhase Platform.

It also provides a brief explanation of how the System Integration methods have evolved recently from legacy hardcoded approaches to modern techniques that address the needs of both Client-based and Browser-based user interfaces, SQL Databases and Network-Capable methods.

The purpose of this Guide is to better prepare you to understand your system integration options and assist you in developing an effective integration strategy for your DocuPhase Platform installation.

Application Integration Overview

The DocuPhase Platform components are highly-integrated so that each of the component modules work effectively together in various cooperative ways with the web-based DocuPhase UI module as its primary hub.

Similarly, DocuPhase is designed to work cooperatively within your business information processing and business processing environments through the use of high-level and effective system integration tools that can be used to make DocuPhase with its ECM and Workflow Product Suite an integrated and cooperating part of your business processing environment.

This Appendix provides an overview of the many types and levels of integration that are available with DocuPhase. A list of the available tools and capabilities for systems integration with DocuPhase organized by various categories of integration follows:

- **ODBC Database Lookup & Update:**
 - ScanDox
 - BarCoder
 - Data Exchange
- **Document File and Metadata Import:**
 - DocuPhase Import
 - DocuPhase FTP Import
 - Import Mapper
 - *Speed Loader
- **Document File and Metadata Export:**
 - DocuPhase Export
 - DocuPhase FTP Export
- **DocuPhase to Existing Application Window Integration:**
 - iLink: DocuPhase to Web-based Application Pages
 - iLink: DocuPhase to Client Windows Content
- **Application Programming Interfaces (API):**
 - *DocuPhase Command Line Interfaces
 - *SOA/SOAP Web-services URL Commands
 - *RESTful Web-services URL commands

*Note *: Asterisk (*) items are special integration capabilities that must be licensed for development and their technical documentation is restricted to licensed users.*

An overview of all of the above DocuPhase integration capabilities is presented in this Appendix to provide you with a complete picture of the many ways that the DocuPhase Platform components can be integrated as an integral and cooperative part of your existing and planned business and information processing environment.

Modern Integration Approaches

In recent years much has changed regarding the way different software applications and programs are integrated to work together smoothly and cooperatively.

- The advent of web-based applications, such as DocuPhase, that can be employed from virtually anywhere on a network or internet;
- The diverse range and scope of many software application systems today that are developed in-house or provided as software products;
- The complexity of modern systems that are costly to modify or do not permit modification demand higher-level and simpler methods for doing systems integration.
- Likewise, the existing IT demands on organizations constrain the amount of custom programming, custom modifications and software maintenance that is practical for client organizations to support.

Today, systems integration is primarily based on industry standards such ODBC, standard file formats, standard networking protocols, windows and browser standards plus web-services, etc. The design for the DocuPhase Platform is built upon these industry standards allowing most customer integration needs to be addressed without expensive and technical programming skills.

Even the use of the Application Programming Interfaces (APIs) can be accomplished with light programming or scripting that are language independent by using high-level web-services commands based on URL-formats that are necessary and best practices for integration with modern web-based applications such as DocuPhase.

The following topics provide you with an overview of the various types of system integration that can be efficiently combined to fit your organization's needs.

Effective Integration Strategy

DocuPhase Document Management and Progression-based Process Workflow Automation are a powerful and a horizontal business processing technology that can be effectively applied in different ways across many diverse departments, functional organizations and even the enterprise. As such, each of these diverse business infrastructures have existing software tools that will continue to be used and must work smoothly with the new DocuPhase Platform capabilities.

One can imagine many possible ways secure Repository and Workflow capabilities might be integrated with a free-hand to develop, modify and write computer programs. However, as discussed previously in the “Modern Integration Approaches” section, the older approaches that make direct API program-level function calls and require programming-level changes to existing software tools which are not practical over a network as well as for cost reasons; plus, they are often not possible when proprietary source code is not open for changes.

Fortunately, DocuPhase has developed an effective suite of highly integrated tools that support modern integration approaches without requiring programming-level modifications to pre-existing software.

DocuPhase has invested a great deal of engineering effort in order to create an easy to use and easy to implement interface for our DocuPhase Platform. DocuPhase Corporation identified early in its product design planning that integrating to third-party and key-line-of-business applications is critical to the overall success of the DocuPhase Platform in most implementations.

It is much easier and more powerful for end-users to have a “Get Invoice” or “Scan PO” button in the same accounting application that they have used for years, than to train employees how to use a completely new approach. When the user is looking at a specific account, it very helpful to have the ‘Account Number’ and/or additional information automatically provided to the DocuPhase Platform to perform its next operation for that user and the current account – Avoiding human transcription errors and effort.

The ability integrate by placing buttons and data capture features like this externally into pre-existing programs without modifying them makes DocuPhase integration tools very effective and practical.

Integration Methods

DocuPhase provides many ways to integrate document retrieval, scanning, barcode coversheet production, workflow and more into existing applications that may be a purchased software product or a home-grown solution.

Pre-Integrated Capabilities

- Microsoft Add-Ins for Outlook, Word, Excel and PowerPoint
- ScanDox provides scanned documents and digital file indexing and capture for direct or upload integration across a network with DocuPhase capture.
- Active Directory Integration of existing Users and Groups with DocuPhase Users and Groups via the DocuPhase ADIS product
- DocuPhase Analytics provides BI technology integrated into DocuPhase to analyze and report on DocuPhase and Progression operations as well as the facilities to integrate your organization's external business databases and data-warehouses.
- DocuPhase iForms provides electronic forms technology integrated into DocuPhase so that electronic forms may be designed and used from within DocuPhase as well as input into its Global iForm by anyone on the network you provide a link.
- mCapture of Photos from mobile devices such as an iPad, iPhone or Android can be captured, indexed and submitted, immediately or when an online connection is available, to DocuPhase.

Likewise, Microsoft Office Outlook, Word, Excel and PowerPoint have DocuPhase Add-Ins available that smoothly integrate these office products with DocuPhase and ScanDox.

No matter whether you have just Authored an Office document, loaded it or checked it out of DocuPhase to edit it, these Add-Ins make it easy to work with both Microsoft Office and DocuPhase and to place the new or edited document into DocuPhase under revision controls when configured.

Existing users in your business infrastructure are typically already defined under Microsoft Active Directory with established user-codes and passwords. These users can continue with work with the existing systems and be easily integrated as users of DocuPhase and Progression-based workflow with the DocuPhase ADIS (Active Directory Integrated Services) module.

The existing users may keep their same user identities, but not have extended capabilities and permissions to access DocuPhase ECM and Progression-based workflow, unless such permissions to DocuPhase products are granted.

SSL (Secure Sockets Level) authentication and encryption provides controls during the installation of DocuPhase solutions as well as for DocuPhase data and images traveling between the server and supported browsers on workstations, laptops and even mobile devices (i.e., Microsoft IE, Google's Chrome, Apple's Safari and Mozilla's Firefox).

Since the DocuPhase Product Line design provides a common umbrella of security and functional permissions that is tightly integrated into all of its modules, including

its integration tools, strong and consistent control over security and permissions is extended to these many and custom-defined integration points.

ODBC Database Lookup and Update

- ODBC Database Lookup & Update with:
 - ScanDox
 - mCapture
 - iForms
 - BarCoder
 - Data Exchange

For enhanced indexing purposes, ScanDox and BarCoder each have built-in ODBC data lookup and mapping capabilities that can be specified parametrically through their standard user interface.

Typically, these database operations are able to look-up and automatically supply data values from external databases to update DocuPhase document index fields. However, it is also possible for these ODBC data and mapping capabilities to update external databases with DocuPhase index field and computed data values.

These external databases typically contain some of your business-related or industry data that also applies to your ECM documents and workflow. These ODBC links are simple to define and maintain so that their integration helps provide consistency and synchronization between your Business and DocuPhase stored content and data.

iForms uses Java-Script Rules and snippets for database lookups and can be used to integrate flexibly with external databases, systems and interfaces such as the 'Google Maps API'.

DocuPhase provides *Data Exchange Services* as part of its base implementation to allow for enhanced indexing using external databases. Using this built-in feature of DocuPhase, key values can be specified in DocuPhase as "Look-up" fields and upon entry into the DocuPhase, the Look-up field is used as the basis of searches in database of other databases (i.e., any ODBC compliant database or data structures) and any other row member fields located by the key field can be mapped to fill DocuPhase index values.

Like Look-ups, Updates can also be applied to the external databases with the appropriate configuration and permissions.

Data Exchange runs as a service with an XML configuration file specifying the look-ups and data mappings.

Complex SQL commands can be specified between disparate data sources giving the users of DocuPhase extreme flexibility and power.

Multiple Indexing of Shared Documents

An additional advanced feature of Data Exchange Services is the Multi-Index Insert (MI2) tool which inserts multiple records for a single image based on a multi-row result from a specified Key value in an external database reference.

MI2 can be a powerful integration method for creating a design where a single document/image can be shared by many different owners with their own copy of its metadata indexes that are linked to the same image (i.e., annotations placed on behalf of any owner will be seen by all owners from their own index-record copy).

For example, MI2 could be applied where multiple hotels at different locations and brands were owners of a common contract or charter document – With MI2 each hotel would not need their own copy of the same contract document, they would each appear to have their own indexes for the contract in the DocuPhase database that points to the corresponding single and shared contract document/image.

Document File and Metadata Import

- Document File and Metadata Import:
 - DocuPhase Import
 - DocuPhase FTP Import
 - Import Mapper
 - *Speed Loader

In addition to one-time migration of document images and/or metadata, these tools can also be used for on-going import feeds into the DocuPhase document and content repository.

These tools provide methods for local and network wide transfer of imported content into DocuPhase.

Document File and Metadata Export

- Document File and Metadata Export
 - DocuPhase Export
 - DocuPhase FTP Export

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DocuPhase to Existing Application Window Integration

- DocuPhase to Existing Application Window Integration
 - iLink: DocuPhase to Web-based Application Pages
 - iLink: DocuPhase to Client Windows Content

iLink is a convenient integration tool. It allows the end-user to put functional document imaging buttons for document retrieval, scanning and barcode cover sheet production on third-party windows-based programs without programming or access to the program source code. Buttons are "Attached" via a DocuPhase iLink to programs and can use the data displayed by the third-party program to perform document management functions. This eliminates redundant or duplicate keying and maximizes the productivity of users of the third-party product.

In other words, data in one or more of your organization's windows programs can selectively supply data displayed in its window to fields in DocuPhase such as in its indexing form or search form allowing your existing application programs to work cooperatively with DocuPhase. Similarly, DocuPhase data can be configured to automatically fill input fields currently displayed in your existing application.

In as little as a few minutes with no IT staff involvement, sophisticated interfaces can be created that would have traditionally required months of project management, programming, testing and money.

With iLink, integration can be 'Drag and Drop' simple.

iLink also allows the definition of "Hot Key" functions. Hot Keys can be used with any application that supports Highlight and Copy. A Hot Key interface allows the end-user to simply highlight an item of interest such as an invoice, account or client number in any program and hit a hot key to use the highlighted data from the window to retrieve and display the related documents.

Application Programming Interfaces (API)

- Application Programming Interfaces (API)
 - *DocuPhase Command Line Interfaces
 - *SOA/SOAP Web-services URL Commands
 - *RESTful Web-services URL Commands

*Note *: Asterisk (*) items are special integration capabilities that must be licensed for development and their technical documentation is restricted to licensed users.*

The DocuPhase API is for users that have programming-level control over the programs that they want integrated. This includes software programs from cooperative program vendors or in-house developers.

Using the DocuPhase API Toolkit, document retrieval, scanning, barcode coversheet production and document insertion into DocuPhase can be easily controlled via externally developed programs or scripts. The API includes many methods to accomplish a given task depending on the level of integration desired and the final functionality required.


DocuPhase's basic API starts with a set of URL or command-line driven interfaces used by DocuPhase and its components.

DocuPhase together with *Data Exchange Services* that are provided as part of a standard DocuPhase implementation, are a combination that provides advanced integration capabilities with little or no programming effort.

These command-line interfaces also allow integration using simple macro or scripting capabilities found in many products. The URL and Command Line Interfaces include the following topics describing these integration methods and capabilities.

DocuPhase SOA URL Commands:

- Get a Document by Doc ID
- Return a Results list based on defined Application Name and Index Values
- Drag and Drop Doc ID Source for Drop Zone Target "Electronic Staple"
- All functions executed through this interface fully respect the security features of DocuPhase

 **Important Note:** *When using the iDatix API URL-commands, it is expected that the API-user's design will handle the formatting of special characters in the URL-command to achieve the intended results.*

The way our API is currently constructed, we do not validate the "string" provided in the URL-command. It's either executed and returns the intended results, or it is executed and fails, returning an error condition.

For example in cases such as a conflict that occurs by using the special character '#', the user needs to replace the '#' with "%23" (which is actually the web standard). The URL-command is either executed and returns matching records, or it is executed and fails to find matching records (or the intended results of the URL-command).

The iDatix API interface does not parse or translate the URL-command syntax to validate or correct it in any way.

Launch ScanDox:

- Launch Scanning with defined Application Name and Index Values

Launch BarCoder:

- Launch Barcoder with defined Application Name and Index Values to Print

Launch QuickIndexer:

- Launch Quick Indexer with defined Application Name and Index Values

Launch ScanDox:

- Launch Scanning with defined Application Name and Index Values

Import with Speed Loader:

- Inject content/files into DocuPhase specifying Application Name and Index Values

Import with DBImage Inserter:

- Based on a database record, create a PDF form overlay and insert it into DocuPhase (DES Plug-in)

Merge Image with Overlay:

- Merge an incoming image with a predefined source image (forms overlay with tiff image, DES Plug-in)

Data Exchange API Plug-ins:

- Data Exchange Services is a powerful processing engine in the DocuPhase suite used as a part of the upfront capture process. If as a user, you wish to have custom developed programming affect the capture process of the captured images or data, the DocuPhase API defines an interface to Data Exchange Services to create user defined plug-ins.
- API interface specifications and sample programs are provided with the purchase of the DocuPhase API Tool Kit. The DocuPhase API is licensed per implementation and is non-transferable. Thus, developers of DocuPhase add-ons must own their own API Toolkit and all implementation using the API interface must have a licensed API Toolkit.

DocuPhase WEB Services:

- DocuPhase provides an advanced SOA WEB Services interface to obtain documents and images from DocuPhase. Images can be retrieved by specifying a document ID, page number or page range and the format for the returned images.

This interface is powerful for implementing public facing WEB portals that MUST be browser independent. Additional licensing is required for Document Server WEB Services.

A future release of DocuPhase may add another approach called RESTful WEB Services to complement and improve on the current SOA WEB Services.

- Representational State Transfer (REST) is a method for integration using Hypertext Transfer Protocol (HTTP) networking specifications. Conforming to the REST specifications is casually referred to as being "RESTful".