Cloud migration guide for d.velop documents

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1. Cloud migration guide for d.velop documents

1.1. General information about this guide

This guide is intended for administrators who want to migrate a d.velop documents (on-premises) system to a d.velop documents (cloud) system.

In this manual, you will find general information about the prerequisites for the migration, the cloud migration process itself and the activities to be performed during the process.

We will support you with your migration by breaking the migration down into manageable phases and showing you the tools, resources and support options you will need for each step.

You can find frequently asked questions here: Frequently asked questions

You can also visit our digital learning platform, the d.velop academy, at https://academy.d-velop.de/.

1.1.1. General information for a cloud migration

Migrating an existing system to the cloud usually constitutes an extensive change project, both in terms of the technical components used as well as the habits and working methods of users.

The following information is important for migrating a d.velop documents system (on-premises):

- **Client**: When you switch to the cloud, only d.3one or d.velop documents will be available to you as an application interface. The user concept is different than for d.3 smart explorer. In addition, you can no longer use any customer-specific client adaptations (DXPs).
- **Migrating documents**: You can only migrate the documents and dossiers that are available in the source system. If error jobs occur in the transfer processes from the existing system, or if the documents are not available in the existing system due to other circumstances, rectify these problems before the migration. You can work with d.3 hostimp directories, d.cold directories and jobs, d.velop archivelink jobs, d.3 async jobs, etc.
- **Full text**: If the full texts of documents do not exist or the documents are not generated in the existing system, this information cannot be migrated. If you want to use full-text search in the cloud for documents from the existing system, you have two options:

  1. The full texts are generated in the existing system and then migrated. This will require additional time and effort, and possibly additional licenses. You can check the full texts in the existing system using a script. Use the script **ocr_checker.jpl**.
  2. During the migration process, the documents are created in the cloud as new documents. There are one-off costs for this processing in the cloud. It will also take additional time to create the documents.

1.1.2. Prerequisites for a cloud migration

Please note the following prerequisites for a cloud migration:

- You need d.3 server version 8 or higher. If you have an older version of d.3 server, you must first update this version.
- If you are using d.ecs storage manager, you need at least version 3 to use the export API.
- All users in your d.velop documents (on-premises) system have a unique e-mail address for logging into the cloud system.
- We recommend performing a UTF-8 migration in the source system to avoid migration errors and data inconsistencies.

- We recommend that you run the **fillEmptyHashValues** script in the source system before the cloud migration. The script generates missing hash values. By doing so, you make it possible to check the hash values during the migration. You can obtain the script from d.velop support.
- We recommend that you run the applications d.3 update checker, d.3 database checker and d.3 document checker in the source system and fix any errors found. The applications are part of the d.3 server tool. For additional information about d.3 server tools, seehttps://serviceportal.d-velop.de/en/products/applications/d3-server-tools.
- If you want to migrate a d.velop documents system, the document structure (document tree) migration for version 8 must first be completed.
- We recommend defining the deletion periods for document types. Delete documents whose deletion period has already expired or exclude these documents from the cloud migration. This will minimize the time required for the cloud migration.

1.1.3. Limitations and obstacles to a cloud migration

The following section provides an overview of the limitations and obstacles you may face when migrating d.velop documents to the cloud.

Limitations of a cloud migration

- As a rule, not all configurations, customizations, products and other settings of an on-premises system can be completely migrated to the cloud. You should therefore be open with customers that a cloud migration will result in changes. In the public cloud, for example, the options for repository configuration and the mapping of hooks vary. You can analyze the repository configuration with the d.velop cloud migration toolkit. This will provide you with a list of the obstacles for your specific case. You can purchase the d.velop cloud migration toolkit at the following link: https://store.d-velop.com/en/d.velop-cloud-migration-toolkit/90000003-en
- Currently, systems with more than 100 million documents cannot be operated in a public cloud. Migrated documents are an exception to this rule.
- It is generally not possible to access d.3 servers directly via D3FC in a public cloud. This includes, for example, validations against d.3 in d.capture batch (d.3 validate module), d.3 calls in d.cold and addressing the d.3 API in d.ecs forms. Direct access to the d.3 database is also not possible. The only way to access documents and dossiers in cloud systems is via the DMS API.
- d.3 web webservice is not available in the cloud and therefore can no longer be used. Alternatively, you can use the DMS API, which requires you to switch over to the REST API.
- JPL and Groovy hooks cannot be used in a public cloud. It is therefore necessary to switch over to webhooks or d.velop custom logics and d.velop business objects. You can find more information about working with hooks in the section How do I handle hooks in a cloud migration?
- As a rule, workflows from an on-premises system cannot be fully executed in the cloud. Workflows like these must be created in d.velop process studio based on a new workflow engine.
- Existing host import processes can still be mapped in the cloud using d.velop cloud uploader. However, more unusual functions such as database queries and logics (e.g. if statements) in JPL files cannot be used. You can find more information on mapping existing host import processes in the section How do I perform the host import in the cloud using d.velop cloud importer?
- Currently, d.velop documents systems with document structure encryption can be exported only with the dmsdocs export API. The dmsdocs export API is available from d.3 server from version 8.39.0. The standalone export API cannot export the encrypted documents. More information is available at the following link: https://help.d-velop.de/docs/en/pub/documents-repo-export-developer/1.0.0/using-the-api-functions/activating-the-api-for-on-premises. This means older encrypted systems cannot be migrated without an update to version 8.39.0 or higher beforehand. This is particularly the case with Human Resources archives.

In rare cases, these limitations may mean that customers cannot use a public cloud system. Given these circumstances, a private cloud system is an alternative that is free of such limitations. In these cases, contact d.velop Support.

Obstacles to a cloud migration

- At present, no more than 100 entries can be configured in multiple fields in the cloud. In on-premises systems, you can increase the maximum number of possible multiple field entries up to 2000. Documents with more than 100 entries therefore cannot be migrated. In this case, contact d.velop Support.
- Annotations can be added to documents that have permission in on-premises systems. These annotations are not available in the cloud.
- System fields (**SysValues**) that are no longer available in cloud systems can be used in on-premises systems. The system fields are used in e-mail archiving, for example.

1.2. General information about cloud migrations

The following section contains general information and instructions for migrating an existing system to the cloud.

1.2.1. Comparison of the interfaces: Migration API and DMS API

Overview

There are two interfaces with which documents can be transferred to a d.velop documents tenant. For a migration, we recommend using the migration API. The migration API is an interface that was developed specifically for migrating documents to the cloud and that is used by various migration tools, such as d.velop cloud migration. In rare cases, it makes sense to use the DMS API (with the SAP Migration Tool, for example) for migration. Below is a comparison of the two approaches.

Migration with the migration API (recommended)

The migration API was specially developed for migrations and is still being developed/expanded. That said, the migration API has already been used successfully in several live projects and is the recommended interface for migration projects. Below is a list of the key functions that are useful during migration projects:

- Via the migration API, you can transfer a wide variety of data to the cloud:
  - Original files and metadata
  - Notes
  - Full texts
  - Generated files (rendered files, dependent files)
  - System properties of documents and dossiers
  - and a range of other information.
- When migrating with the migration API, you can avoid having to create the dossier scheme, render documents and generate full text, and instead simply transfer this information. This avoids costs that would be incurred in a standard import process. Transferring this information also saves you considerable time compared to creating the information again in the cloud.
- You can import dossiers and carry over the existing manually or automatically created dossier links 1:1.
- The IDs of the documents and dossiers are retained.
- If errors occur when migrating the documents, you can simply repeat the document migration. You do not need to clean up the data first.
- The migration API is disabled in a tenant by default but can be enabled. For more information, see: link.

Import with the DMS API

The second interface for migrating documents to the cloud is the DMS API, which is also used by d.velop cloud uploader and the SAP Migration Tool. The DMS API is intended for the standardized import of individual documents and is not designed for the mass import of data. Migrating large volumes of data can result in long runtimes.

The following problems can occur when using the DMS API for migrations:

- The DMS API imports documents individually and does not allow for mass import. This requires significantly more time and drastically reduces the migration speed compared to the migration API.
- You can only deliver the original files and the business-related document properties via the DMS API. You cannot import notes, full texts, links, etc.
- You can only import the latest version of a document.
- Since you cannot import the dossiers, full texts and rendered documents, this information must be created again in the cloud. This results in increased time, effort and costs.
- Since the dossiers and the links to the documents and dossiers cannot be imported, the defined dossier scheme has to be recreated in the cloud. In the case of large quantities of documents, the background async job will take a lot of time to process.
- If errors occur during the document migration, parts of the migration may need to be repeated. In this case, time-consuming cleaning of the cloud system is necessary before the re-import can take place because documents cannot be overwritten.

Comparison of the interfaces

Functionality	Migration API	DMS API
Import original files	✓	✓
Import metadata	✓	✓
Import the import date	✓	✓
Import the original owner	✓	✗
Import dossiers	✓	✗
Import links	✓	✗
Import multiple document versions	✓	✗
Import the full text	✓	✗
Import notes	✓	✗
Import comments/visual annotations	✓	✗
Import dependent documents (e.g. renditions)	✓	✗
Retain the document ID	✓	✗
Re-import without cleaning	✓	✗
Import speed	~ 1-3 million documents per 24 h	~ 100,000 - 200,000 documents per 24 h

Conclusion

- The migration API is the preferred approach for migrating documents to a cloud system.
- You can use d.velop cloud uploader and the SAP Migration Tool (DMS API) in the following cases (not exhaustive):
  - You are importing only a few documents. Recommendation: Use the migration API for more than 100,000 documents.
  - You want to migrate only the latest version of a document.

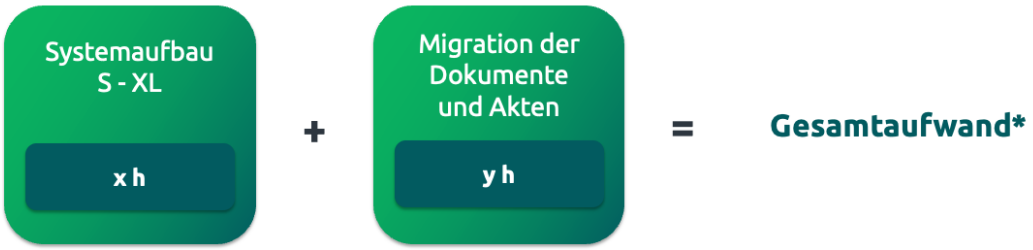
1.2.2. Standard service packages for cloud migration (setting up the system and migration)

Standard service packages have been created to give you an idea of the **approximate costs** of a cloud migration. These packages provide a **rough estimate** of the project hours required for a migration project, based on the complexity of the customer's system. The packages were created based on previous projects and experience and are constantly being revised and corrected.

> **Note**
> You can use the packages to draft a binding quotation.

How do I use the packages?

- d.velop provides a system check questionnaire to help you classify the customer's system. This questionnaire can be filled out by the customer's administrator, the partner managing the project or by d.velop Consulting (for a fee).
- Based on this information about the customer system, the "Cloud Customizing and Migration" team from the Private Economy Division can assign the project to the appropriate package. This then determines the expected project hours for this migration project.
- These hourly costs are in addition to the monthly SaaS subscription fees, which are calculated by Sales.
- For further information, please consult the documents below containing the general procedure for migration projects and a description of the prerequisites, limitations and obstacles.
  - General description of the cloud migration process: Download the Word file
  - Prerequisites, limitations and obstacles: Prerequisites for a cloud migration and limitations and obstacles to a cloud migration



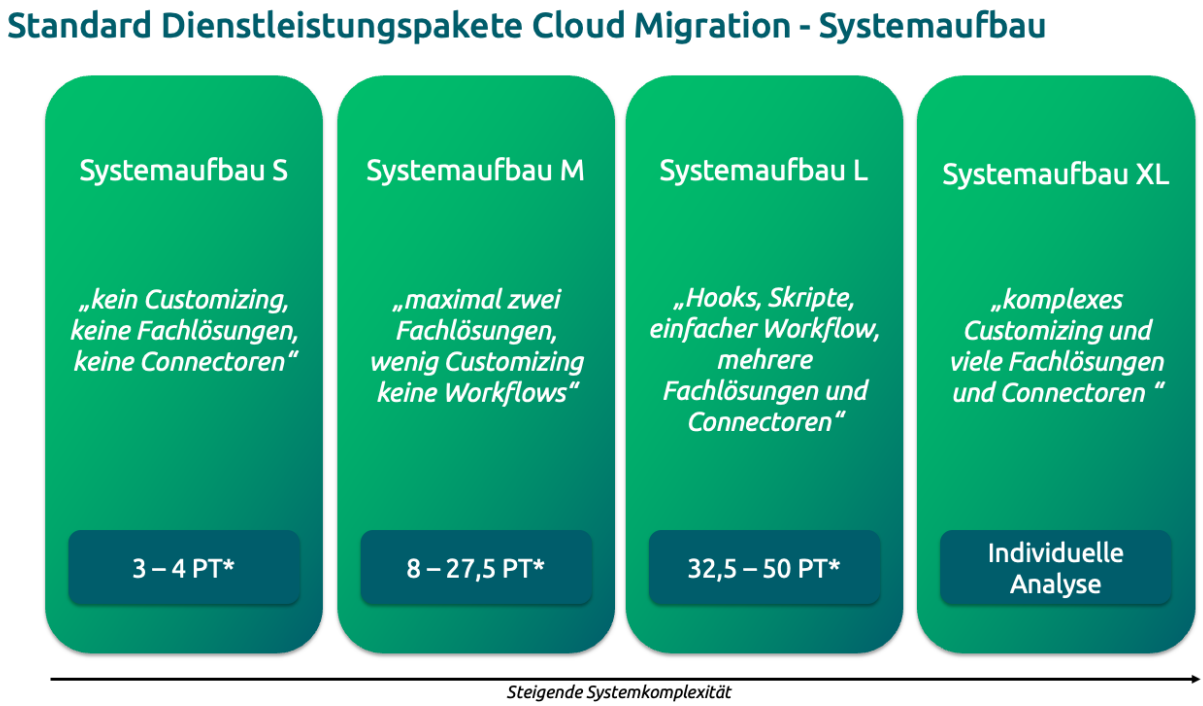
What do I need to keep in mind?

- The standard service packages are rough estimates based on previous information and experience. As the system has not been analyzed in detail, they cannot tell you whether all functions can be mapped.
- The estimated service package and the work required to migrate the system to the cloud will be validated in the initial phase of the migration project. Deviations from previous assumptions that occur over the course of the project will be communicated to you without delay.
- If a customer system is assigned the category XL (a system with high complexity), the system must be analyzed individually and a concept developed on how to proceed. Please contact the "Cloud Customizing and Migration" team from the Private Economy Division in this case.
- **Prerequisites, limitations and obstacles**
- Information that is **not** exported and migrated:
  - Document history entries
  - Workflow logs
- Information that is exported and migrated:
  - All versions of the documents (original files)
  - Dependent files for all document versions
  - Category (according to mapping used)
  - Business-related document properties, e.g. invoice number, invoice amount (according to mapping used)
  - Original date of import and end of retention period date
  - Original document ID
  - Person who originally created the document (according to mapping used)

- Person who originally edited the document (according to mapping used)
- Dossiers
- Links to other documents or dossiers, including metadata
- Other system-related document properties
  - e.g. file size (if available), file extension, hash values (if available), document status, comment fields, date the file was changed, date properties were changed, date of general change, file name
- Full text (if available)
- Notes, including metadata (if available)

Standard service packages (system setup)

Four packages (S, M, L, XL) are available for determining the service hours required for setting up the cloud system:



** The project hours are general estimates only and will be validated at the start of a migration project.*

System setup package S – in detail

Details

- Einfaches d.velop documents (d.3ecm) System
- Mindestens v8.x
- Keine Dokumentenverschlüsselung
- Volltextsuche, Rendition Service
- Dateibasierte Importprozesse (Hostimport)
- **Keine Fachlösungen oder Connectoren**** im Einsatz
- **Kein Customizing*****

Beispielsystem

- d.velop documents v8.1 System
- 15 Kategorien, 35 Eigenschaften, 5 Wertemengen
- Dateibasierte Importprozesse (Hostimport)

** The project hours are general estimates only and will be validated at the start of a migration project.*

*** Specialist solutions and connectors = contract management, mail archiving, d.3one in Microsoft Outlook, case management, digital signature, d.capture batch, d.capture dialog, d.cold processing, Salesforce connection, SAP connection, postbox/foxdox connector, Navision connection, d.3 web webservice.*

**** Customizing = hooks, external scripts, workflows, customer DXPs, customized d.3one apps, d.capture batch scripts.*

System setup package M – in detail

Details

- d.velop documents (d.3ecm) System
- Mindestens v8.x
- Keine Dokumentenverschlüsselung
- Volltextsuche, Rendition Service
- Dateibasierte Importprozesse (Hostimport)
- **Maximal 2 Fachlösungen oder Connectoren**** im Einsatz
- **Wenig Customizing*****

Beispielsystem

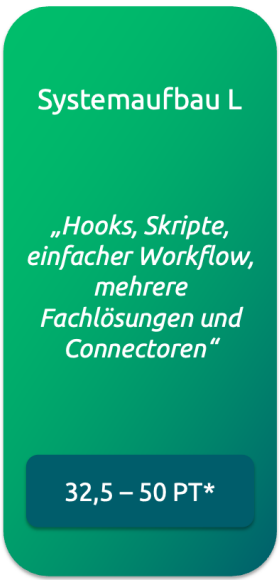
- d.velop documents v8.1 System
- Dateibasierte Importprozesse (Hostimport)
- SAP-Anbindung
- d.cold Verarbeitung
- Einfacher Hook mit Stammdatenvalidierung

** The project hours are general estimates only and will be validated at the start of a migration project.*

*** Specialist solutions and connectors = contract management, mail archiving, d.3one in Microsoft Outlook, case management, digital signature, d.capture batch, d.capture dialog, d.cold processing, Salesforce connection, SAP connection, postbox/foxdox connector, Navision connection, d.3 web webservice.*

*** Customizing = hooks, external scripts, workflows, customer DXPs, customized d.3one apps, d.capture batch scripts.*

System setup package L – in detail



Details

- d.velop documents (d.3ecm) System
- Mindestens v8.x
- Keine Dokumentenverschlüsselung
- Volltextsuche, Rendition Service
- Dateibasierte Importprozesse (Hostimport)
- **Mehrere Fachlösungen oder Connectoren**** im Einsatz
- **Diverses Customizing*****

Beispielsystem

- d.velop documents v8.1 System
- Dateibasierte Importprozesse (Hostimport)
- SAP-Anbindung, d.3one in Outlook, Mailpostfacharchivierung
- d.cold Verarbeitung, Vertragsmanagement
- Hook zur Eingabenvalidierung, dynamische Hook-Wertemengen
- Einfacher Workflow

** The project hours are general estimates only and will be validated at the start of a migration project.*

*** Specialist solutions and connectors = contract management, mail archiving, d.3one in Microsoft Outlook, case management, digital signature, d.capture batch, d.capture dialog, d.cold processing, Salesforce connection, SAP connection, postbox/foxdox connector, Navision connection, d.3 web webservice.*

*** Customizing = hooks, external scripts, workflows, customer DXPs, customized d.3one apps, d.capture batch scripts.*

System setup package XL – in detail

Details

- Komplexes d.velop documents (d.3ecm) System
- Mindestens v8.x
- Keine Dokumentenverschlüsselung
- Volltextsuche, Rendition Service
- Dateibasierte Importprozesse (Hostimport)
- **Viele Fachlösungen und Connectoren**** im Einsatz
- **Umfangreiches Customizing*****

Beispielsystem

- d.velop documents v8.1 System
- Dateibasierte Importprozesse, d.capture batch
- SAP-Anbindung, d.3one in Outlook, Mailpostfacharchivierung
- d.cold Verarbeitung, Vertragsmanagement, Digitale Signatur
- Hooks zur Validierung von Eingaben, dynamische Hook-Wertemengen, weitere Logiken Import und Suchverhalten
- Externe Skripte, Mehrere komplexe Workflows

** The project hours are general estimates only and will be validated at the start of a migration project.*

*** Specialist solutions and connectors = contract management, mail archiving, d.3one in Microsoft Outlook, case management, digital signature, d.capture batch, d.capture dialog, d.cold processing, Salesforce connection, SAP connection, postbox/foxdox connector, Navision connection, d.3 web webservice.*

*** Customizing = hooks, external scripts, workflows, customer DXPs, customized d.3one apps, d.capture batch scripts.*

Determining the migration project hours

The migration project hours are calculated based only on the number of documents and dossiers to be migrated. The greater the number of items to be migrated, the higher the number of potential migration errors, and thus the greater work required for planning, preparation, monitoring and follow-up.

Beschreibung der Tätigkeiten

1. Planung und Abstimmung des Migrationsvorgehens
2. Vorbereitung der Dokumentmigration
3. Testmigration der relevanten Dokumente und Akten
4. Produktivmigration der relevanten Dokumente und Akten
5. Bereitstellung eines Migrationsreports zur Nachvollziehbarkeit der Migration

** Project hours are determined based on the number of documents and dossiers. The actual hours may differ if errors occur repeatedly, if multiple migrations are performed or if multiple delta migrations are needed. The project hours are general estimates only and will be validated at the start of a migration project.*

What do I do if the customer has an XL system containing more than 50 million items to be migrated, or if the customer wants an exact statement of the project hours required to map their system in the cloud?

When the customer system is very complex and belongs to category XL, a rough estimate is not sufficient. If more than 50 million items (documents and dossiers) need to be migrated, the customer system and the migration must be quoted individually.

Once again, the system check questionnaire is used for this analysis, which may also take into account additional information from the on-premises system. The procedure is described in the sections Performing a system check and How do I perform a system check?.

The system check is a billable service that we provide and bill to our customers. The time required for this analysis can be determined and quoted to the customer based on the following packages:

Review process

The important thing to remember is that the packages and their associated project hours are not unchanging values. We expect that these packages will change as we gain more project experience, as migration tools develop and improve and as the source and target systems evolve. For this reason, we regularly validate the packages and the required project hours, compare them with our most recent project experience and update them as necessary. You should therefore always use the latest version on this page.

Summary

With the help of the service packages for system setup and the hours required for migrating documents and dossiers, you can determine the approximate project hours required for the migration project based on the number of items to be migrated and the system complexity (S, M, L, XL).

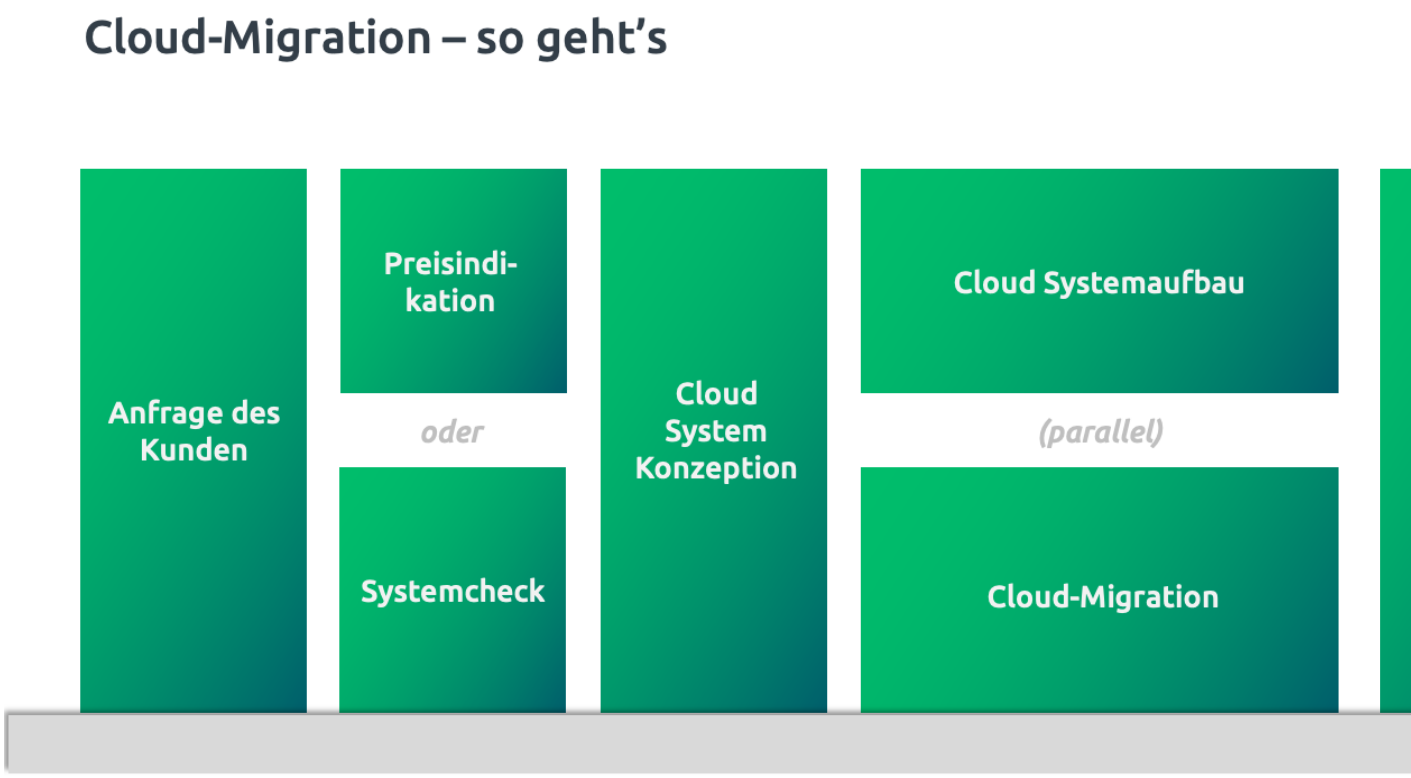
When added to the monthly SaaS subscription fees, this provides a quick and easy estimate of the cloud and migration costs.

In addition to the documents General description of the cloud migration process and Prerequisites, limitations and obstacles to a cloud migration, we provide further relevant information to support our Project Management, Consulting, Sales and Partner Management Departments as well as our partners.

1.3. Procedure of a migration project

This section describes how documents are migrated to the cloud as part of a migration project. The typical phases of a migration project are: request, system check, design, preparations, system setup, migration and go-live.

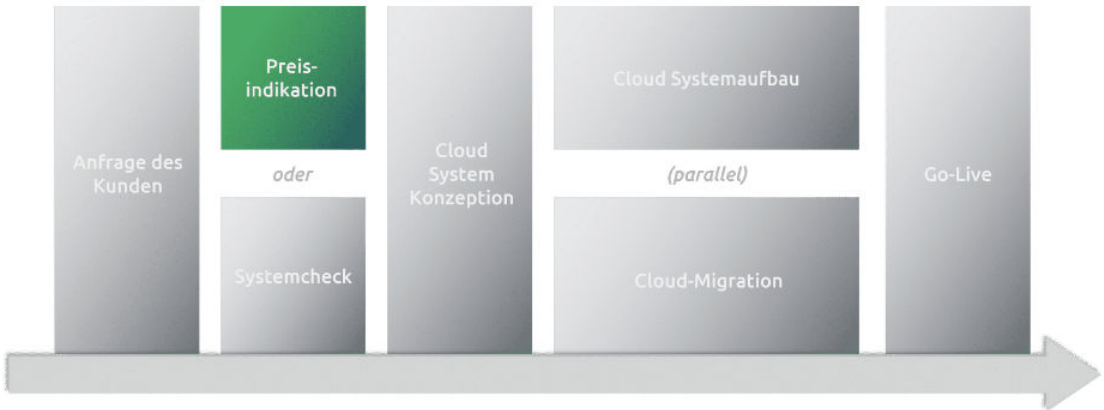
A migration project typically starts with a request from a customer interested in a cloud migration. We want to enable you to obtain a cost estimate based on a completed questionnaire about the system as early as possible. If the customer is still interested, we then usually perform a system check. During the system check, we record important framework parameters for existing products, processes and configurations, and we assess the feasibility of a cloud migration. If a migration is to take place, this is done within the framework of a project. These next phases are shown in the figure below.



The phases after the system check, which constitute the actual migration, are described in more detail later in this manual. The migration phases should not be seen as a strict procedure for a migration project, but rather as the typical phases of a project. Not every phase has to be performed in every project, and the order of the phases may differ. It is also possible to perform phases in parallel and to return to earlier phases.

1.3.1. Creating a cost estimate

When existing customers are interested in a cloud system and thus a cloud migration, the costs are often a primary consideration. That is why we have provided you with a way to create a cost estimate with little effort. This cost estimate is created based on standard service packages.



> **Note**
> A cost estimate is merely a rough estimate of the work required based on previous experience. As the system has not been analyzed in detail, it is not possible to say whether all functions can be mapped. For a detailed analysis and assessment, a system check must be performed. This is especially recommended for highly complex customer systems.
>
> The project hours required to migrate the system to the cloud will be validated in the initial phase of the migration project. If deviations occur from previous assumptions, inform the customer without delay.

Goals of this phase

- Create and provide a rough price estimate for the customer
- Identify basic obstacles and sources of complexity

Creating a cost estimate

1. Gather information about the customer system. The system check questionnaire is used to assign the customer's system to one of the packages. This questionnaire can be filled out by the customer's administrator, the partner managing the project or by d.velop Consulting (for a fee).
2. Perform the following steps to verify that the migration prerequisites are met and that the project is feasible:
   - Review the system information and check the prerequisites, limitations and obstacles.
     - If there are no named users, analyze user behavior using d.3 license checker. You can download d.3 license checker from the service portal: Link to d.3 server tools
     - If you are unsure about the feasibility of and/or the time required for mapping individual components of the system, perform a system check. The customer must commission this system check and the detailed analysis.
   - Analyze the repository configuration using the cloud migration toolkit. A guide can be found in the Knowledge Base.
   - Analyze the documents in the source system using the PowerShell script "Cloud Migration Check" so you can take any obstacles for a migration into account before it is commissioned. To receive the script, send a support ticket to d.velop and request the "Cloud Migration Check" script during a cloud migration. Have them redirect you to the "Cloud Migration" team.
   - Choose the migration approach (see: Comparison of migration approaches: Migration API and DMS API (d.velop cloud uploader/SAP Migration Tool))
     - You have the following options:
       - Migration by d.velop Consulting
       - Migration by d.velop migration partners
   - At this point, you should check whether the customer's desired date for project completion (if provided) fits with the information you currently have. If you can already see that the desired deadline is not achievable, immediately inform the customer.
3. Determining the required project hours:
   - Based on the information about the customer system, the "Cloud Customizing and Migration" team can assign the project to the appropriate package and calculate the expected project hours for the migration project.
   - If a customer system is assigned the category XL (high complexity), the system must be analyzed individually and a concept developed on how to proceed. Contact the "Cloud Customizing and Migration" team for the analysis.
4. Determine the SaaS subscription fees and convert the licenses to the cloud subscription model in Sales.
5. To the information you have, add additional information about the general procedure for migration projects and a description of the prerequisites, limitations and obstacles.

- General description of the cloud migration process: Style guide
- Prerequisites, limitations and obstacles

6. Create a comparison of the costs of the current on-premises system and the cloud system (monthly cloud costs plus one-time service costs). Compare them over a period of five years, for example, and prepare the comparison in an Excel table or similar. Previous migration projects and offers have shown that customers need a cost comparison like this in order to make a decision. Use the TCO calculator for cloud migrations as needed.

Additional links and information

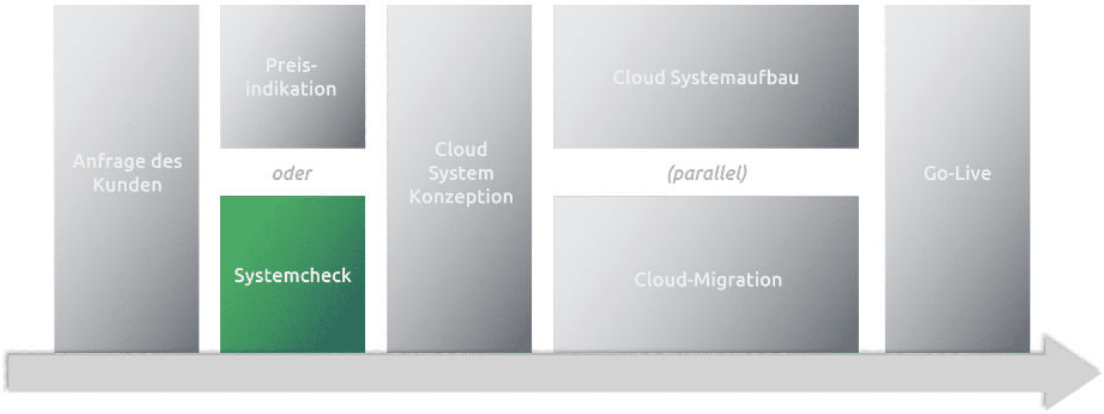
- System check questionnaire for collecting system information (only accessible to partners and internal staff): DE & EN
- Description of the migration procedure (only accessible to partners and internal staff): link.
- Cloud migration FAQ: link.
- Website on cloud migration with d.velop: link.
- TCO calculator for cloud migrations: link

1.3.2. Performing a system check

In addition to the cost estimate, existing customers who are interested in a cloud system and thus a cloud migration may elect to have a system check performed. The system check is especially recommended for highly complex customer systems or when the customer wants a detailed statement about the price and feasibility of the mapping.

During this system check, we analyze in detail the existing d.velop system, check whether the desired functions can be mapped, design the target cloud system and the migration approach, and illustrate possible limitations and obstacles to a migration. This information is then combined with an estimate of the required project hours and a presentation of the expected SaaS subscription fees.

The system check therefore constitutes an early analysis of a customer system and a conceptualization of how the migration will be implemented.



Note

A system check is optional and must be commissioned and paid for by the customer. However, large portions of the results may be reused in the design phase.

Goals of this phase

- Reduce project risk with a detailed analysis and feasibility assessment of system components.
- Create and provide a reliable quotation to the customer.
- Ensure that all possible limitations have been identified and communicated honestly to the customer.

- Avoid the creation of highly customized, difficult to operate and maintenance-intensive solutions in the cloud. This ensures that the customer will continue to enjoy the benefits of the cloud over the long term.

Performing a system check

1. Gather information about the customer system.
   - The system check questionnaire is used as the basis for the system check. This questionnaire can be filled out by the customer's administrator, the partner managing the project or by d.velop Consulting (for a fee).
   - You may need additional information about the system beyond what is contained in the questionnaire.
2. Check that the system components are suitable for the cloud and describe the mapping options.
   - With the information you collect, our Consulting staff can handle the next steps. Especially in projects with special issues, certain tasks will require more than one person.
   - Describe the current state of the system components in the results document.
   - Verify that the migration prerequisites are met and that the project is feasible:
     - Review the system information and check the prerequisites, limitations and obstacles.
     - Automatically collect further system information and determine possible obstacles using the "Cloud Migration Check" PowerShell script.
     - Analyze the repository configuration using the cloud migration toolkit. A guide can be found in the Knowledge Base.
   - Choose the migration approach (see: Comparison of migration approaches: Migration API vs. DMS API. Your options are:
     - Migration by d.velop Consulting
     - Migration by a migration partner
   - Compare the customer's requested project completion date with the information currently available to you. If you can already see that the desired deadline is not achievable, immediately inform the customer.
   - Describe the options for the new system, including possible limitations (target state). You can use this to explain the options to the customer, and you can reuse it in the concept that will be created in the results document.
3. Estimate the project hours required for implementation. Estimate the hours required for replicating the function(s) in the cloud for each system component analyzed.
4. Determine the SaaS subscription fees and convert the licenses to the cloud subscription model in Sales.
5. Summarize the results of the system check.
6. Collect the calculated project hours into a quotation (with the results of the system check attached).

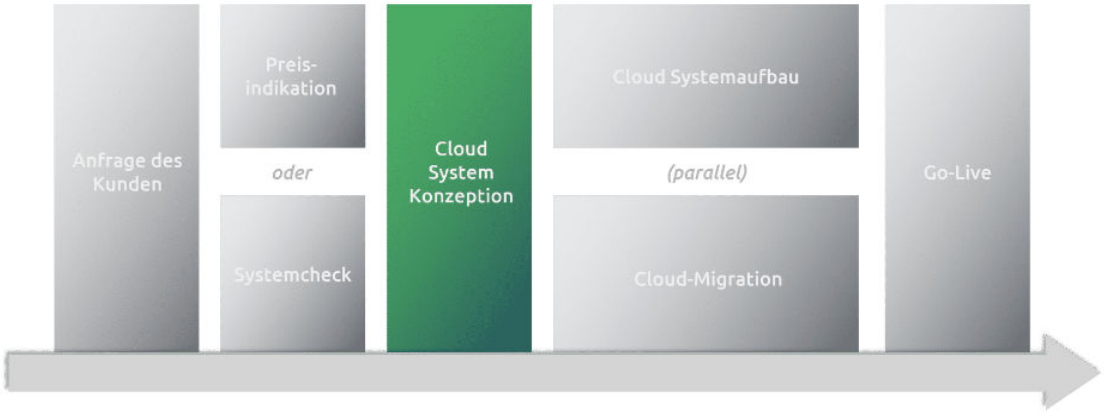
Additional links and information

- System check questionnaire for collecting system information (only accessible to partners and internal staff): DE & EN
- "Cloud Migration Check" PowerShell script: Send a support ticket to d.velop and request the "Cloud Migration Check" script. Have them redirect you to the "Cloud Migration" team.
- Description of the migration procedure (only accessible to partners and internal staff): link.
- E-learning: Switching from d.3 smart explorer to d.velop documents: link.
- Cloud migration FAQ: link.
- Website on cloud migration with d.velop: link.

1.3.3. Designing the cloud system and planning the cloud migration

The design of the cloud system represents the start of the migration project. All known requirements are presented during the design phase. The cloud system is then designed based on these requirements. During this phase, you determine which apps are needed to replicate the existing functions of the

on-premises system. You also present possible functional differences and limitations that may occur as a result of the cloud migration.



Goals of this phase

- Transparently present all known requirements and design a cloud system based on these requirements.
- Present possible functional differences and limitations involved with the cloud migration.
- Define, flesh out, and transparently present the timing and contents of the agreed sub-projects and work packages for a migration project. Proceed on an iterative basis if only a part of the project is planned here.
- Reduce project risk with a detailed analysis and feasibility assessment of system components.
- Ensure that all possible limitations have been identified and communicated honestly to the customer.
- Avoid the creation of highly customized, difficult to operate and maintenance-intensive solutions in the cloud so that the customer can continue to enjoy the benefits of the cloud over the long term.

Designing the cloud system and planning the cloud migration

Perform the following steps to design the cloud system and plan the cloud migration:

1. Clearly define the goal/results of the design phase with the customer:
   - record and consolidate all customer requirements
   - Create a prototype (this may constitute the start of the implementation phase already)
   - Define the tasks for the subproject in question (taking into consideration the other subprojects)
   - Set a deadline for the design and its approval by the customer
2. Determine whether the source system can be migrated to the cloud without large-scale changes, or whether functional changes need to be made during the migration project. Perform the following steps, depending on your particular case:
   - **Functional changes requested or necessary**:
     - Review the existing project documents relevant to the design (regardless of the project approach):
       - Tender documents
       - Design specification
       - Catalog of requirements
       - Contract documents
       - Compliance requirements
       - Other documents
     - Carry out design workshops.
       - System setup: repository configuration, processes, interfaces, Customizing, specialist solutions, products
       - Document migration: scope of the migration, document migration requirements, order and execution

    - Consolidate the results from the workshops with the details from the onboarding phase:
      - Are the requirements the same?
      - What are the differences?
      - What takes precedence and must be implemented?
    - Record in writing the design as conceived from the consolidated results of the previous project documents and the workshops (according to the project approach):
      - Functional specification
      - Backlog
      - Technical concept for the target system environment (cloud and on premises) and concept for migration execution (can also be copied over from the previous system check, if applicable)
      - Estimation of the project hours required to implement the function(s) in the cloud
  - **No functional changes requested/necessary**:
    - Have Consulting staff inspect the source system. Record the existing configurations, products and functions (also from the previous system check, if applicable).
    - Record the design in writing:
      - Describe the current state of the individual system components (based on the analyses and descriptions from the system check, if applicable)
      - Describe the options for the new system, including possible limitations (target state) to be presented clearly to the customer
      - Describe the document migration
      - Estimate the hours required for replicating the function(s) in the cloud for each system component analyzed
3. Verify that the migration prerequisites are met and that the project is feasible.
   - Review the system information and check the prerequisites, limitations and obstacles.
   - Analyze the repository configuration using the cloud migration toolkit. A guide can be found in the Knowledge Base.
4. Choose the migration approach. See: Comparison of migration approaches: Migration API and DMS API (d.velop cloud uploader/SAP Migration Tool). Your options are:
   - • Migration by d.velop Consulting
     - Migration by a migration partner
5. Compare the design with the order. Did you uncover new information in the design phase that will require additional work beyond what was stated in the order? If yes, disclose this information without delay so that the order can be renegotiated.
6. Have the design accepted by the customer. This should be documented with at least an e-mail confirmation from the customer (no specific form required), which should be stored in d.velop documents.
7. Carry out the detailed planning of the project structure for the design of the sub-projects:
   - Classic:
     - Phases
     - Milestones
   - Agile:
     - Initial iterations until the first increment is provided for testing
     - Dates for reviews and refining the backlog
8. Confirm and finalize the planning together with the customer.

Additional links and information

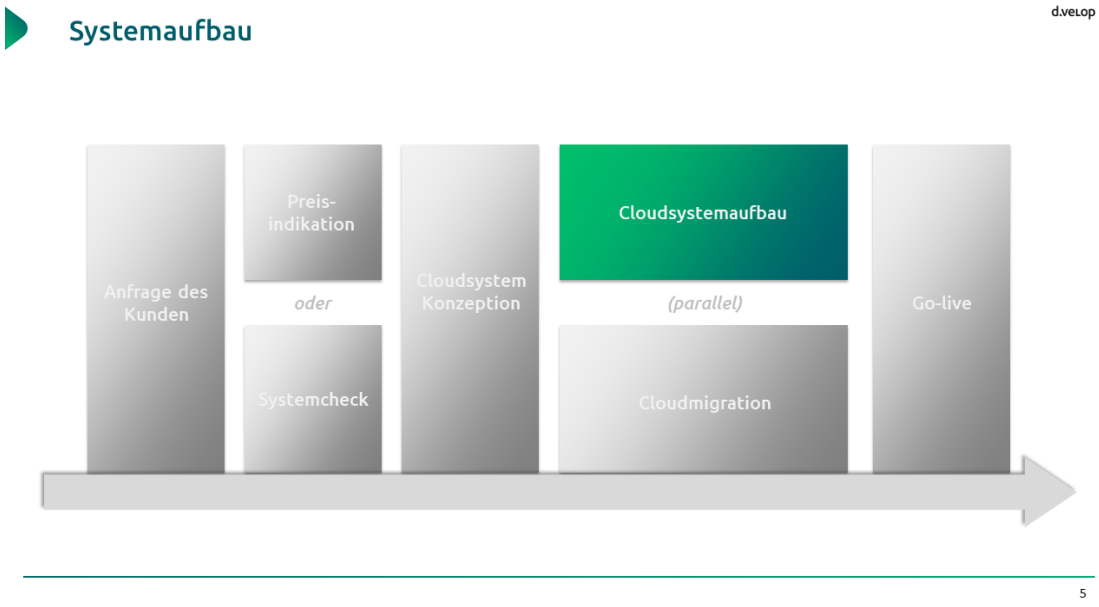
- Description of the migration procedure (only accessible to partners and internal staff): link.
- E-learning: Switching from d.3 smart explorer to d.velop documents: link
- Cloud migration FAQ: link.
- Website on cloud migration with d.velop: link

1.3.4. Setting up the cloud system

Introduction

Before you can migrate documents to the cloud, you have to set up and configure a cloud system with a basic installation. This configuration comprises the document types, properties, datasets and, if necessary, the dossier structures. You transfer the configuration of the existing system to the cloud with minor changes. You can start the migration with this configuration.

During the migration, you can perform additional configurations, such as the permissions concept and the groups, as well as processes, hooks, integrations in various systems and further Customizing. You can also implement staging in the cloud with multiple repositories. Often a live tenant and a test tenant are used for this purpose.



Goals of this phase

- Achieve the project goals in terms of results, work hours and time.
- Successfully set up and configure the cloud systems.
- Start the document migration as quickly as possible.

Preparing and setting up the system in the cloud

1. Basic system setup

> **Note**
> The first step is to perform the basic configuration so that you can get started with the data migration as soon as possible.

- If necessary: Create a test system and finish the basic configuration.
  - Confirm the tenant URL with the customer.
  - Ensure that one or more tenants have been purchased.
    - Public cloud: The customer completes the purchase.
    - Private cloud: d.velop AG's Managed Service Team creates the tenant.
  - Configure the permissions for the relevant project participants in the User Management App (UMA).
  - Carry out the basic configuration.

    - Public cloud: Transfer the repository configuration from the test system using a DMS configuration package.
    - Private cloud: Use the transport system to import the repository configuration from the test system.
  - Create the live system and perform the basic configuration.
    - Confirm the tenant URL with the customer.
    - Ensure that the customer has purchased one or more tenants.
    - Configure the permissions for the relevant project participants. Add the users to the **Tenant Admin** group in the User Management App (UMA).
    - Carry out the basic configuration.
      - Public cloud: Transfer the repository configuration from the test system using a DMS configuration package.
      - Private cloud: Use the transport system to import the repository configuration from the test system.
2. Start the document migration in parallel.
3. Set up additional configurations, processes and apps.
   - Set up the other system components for the test and live systems according to the design concept:
     - (Supplying) processes
     - Apps
     - System connections
     - Interfaces
     - Webhooks
     - Custom logics
     - Business objects
   - Configure dedicated components that will remain on the customer's (on-premises) system (e.g. d.velop cloud uploader, d.capture batch, d.cold).
4. Compare all requirements from the concept against what was actually implemented in the cloud system.
5. Carry out final tests. As a final step, the system is accepted by the customer.

Additional links and information

- Description of the migration process: link (only for partners and internal staff)
- Basic configuration of a cloud system for the document migration: link
- Connecting AD in the cloud: link , link
  - Single sign-on: link
- Preparing for the document migration: link
- Host import in the cloud with d.velop cloud uploader: link
- Using hooks in the cloud: link
- Running external scripts in the cloud: link
- Cloud migration FAQ: link (only for partners and internal staff)
- Website on cloud migration with d.velop: link

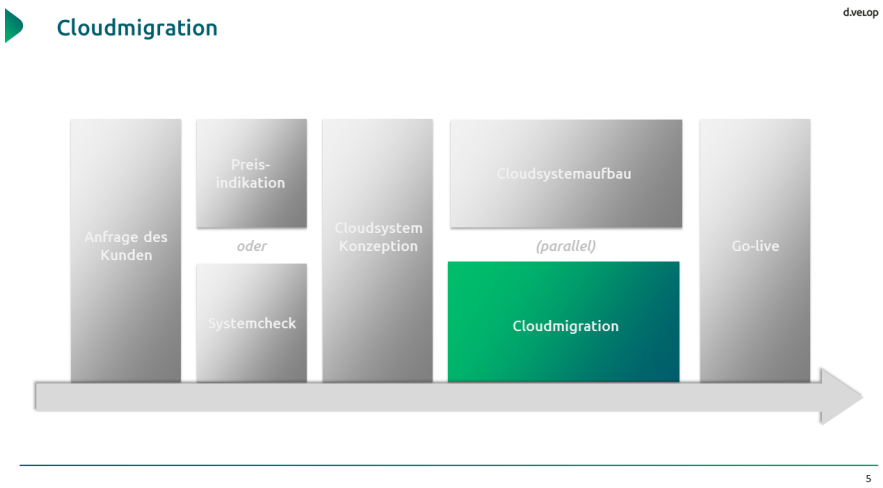
1.3.5. Performing the document migration:

Introduction

You can migrate documents once the basic cloud system has been configured. As an initial test and subsequent verification of the migration results, first perform a small test migration in which you migrate documents from the current existing system (on premises) into the test system. Do not begin the live migration into the new live system (cloud) until you have inspected the results, rectified any errors and had the migration accepted by the client. In the first step, identify which documents in the existing system need to be migrated. Not all documents and document types always need to be migrated. Using

appropriate applications, the relevant documents are exported from the existing system, transformed and then migrated to the cloud via a special migration interface of the target system. For the export, you need a hard disk that can be accessed by d.3 server and on which files can be stored during the process. We recommend starting with 50% of the total volume of documents.

The migration is based on mapping which determines which categories and associated properties of the source system are transferred to which categories and properties of the target system. As a rule, you can map the categories and properties 1:1.



Warning

During the migration of documents, there must be no manual write access to the documents in the target system. The corresponding permissions must be explicitly revoked! Guide: How do I revoke write permissions in an on-premises system to perform a migration without information differences (delta)?

Otherwise, data may be lost and delta migrations can no longer be carried out. Read access to the documents in the target system is allowed.

Goals of the phase

- Achieve the project goals in terms of results, work hours and time.
- Successfully migrate documents (export, transformation, import) from the source system to the cloud system.

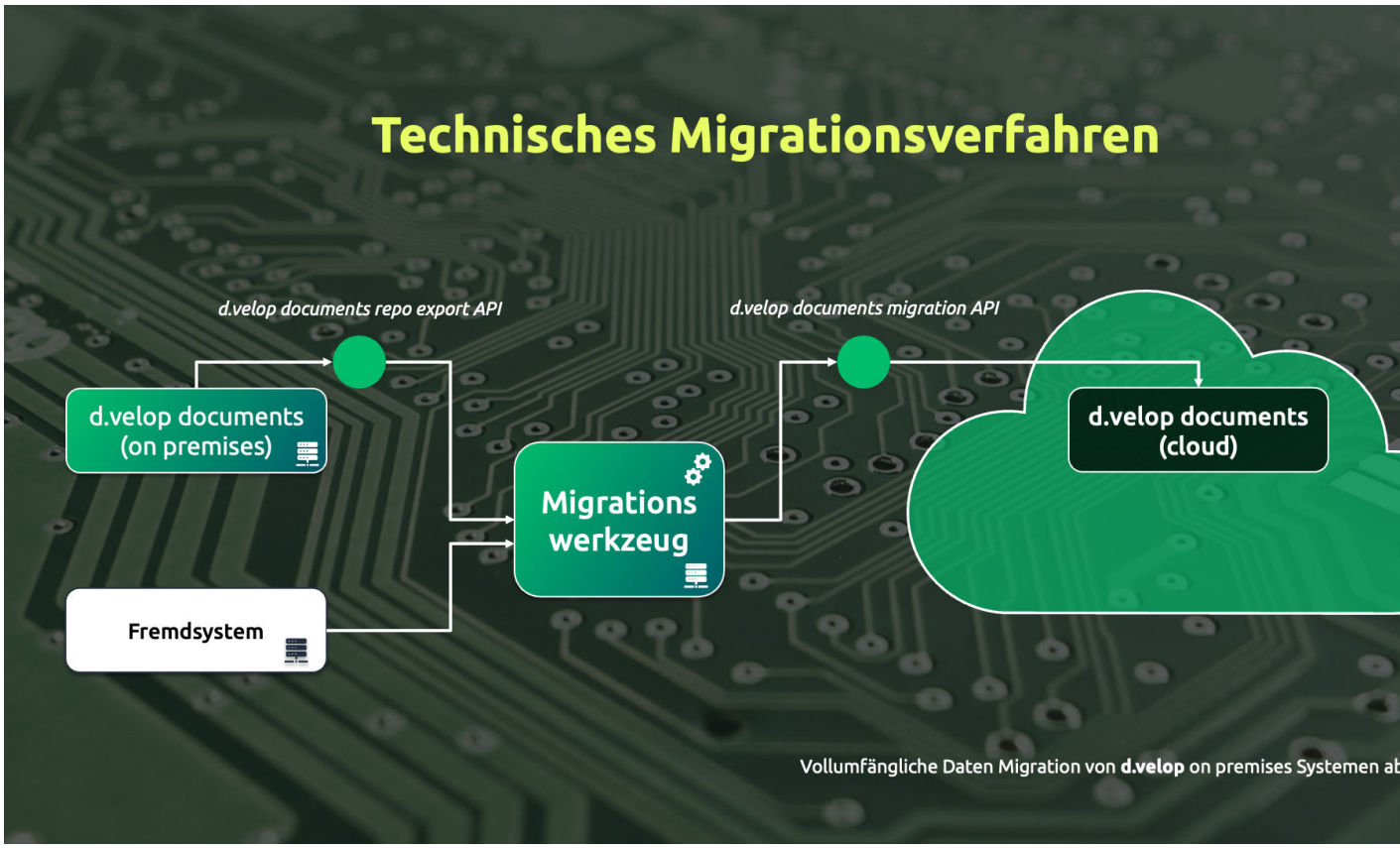
Conditions

- Only migrate documents that have not yet exceeded the retention period defined for their respective category. A retention period is defined for each category. Documents that have exceeded their category's time limit are not migrated.
- The client can also define additional filters to reduce the volume of documents to be migrated, for instance:
  - Only the categories x, y and z.
  - Only documents from the year 20xx and later.
- You can only migrate documents that are actually available in the system. If, for example, documents in delivery processes of the source system have an error status and have not been archived, these errors should be corrected before migration. The client is responsible for this clean-up, but we can provide support. This support is not part of a standard migration and must be explicitly commissioned separately.

- If document full texts have not been generated in the source system, the source text cannot be transferred to the cloud. A full-text search in the cloud for migrated documents is not supported. If a full-text search is required for migrated documents as well, there are two procedures. In both cases, generating the full text will take a certain amount of time, depending on the number of documents.
  - The full text is generated in the source system before a migration. This leads to additional project hours and license costs.
  - The full text is generated in the target system during the migration process when the documents are imported. This results in one-off rendition costs.
- As part of the migration, the hash value of the original files is checked to ensure that the documents arrive in the target system unchanged and complete. The documents retain their original document ID and other system properties such as the original import date.
- You can continue to work with the source system during the migration. Newly imported documents and changes to existing documents can be taken into account in subsequent delta migrations and transferred to the cloud system.
- During the migration, you can work read-only in the target system. Write access cannot be enabled because any changes could be overwritten in subsequent delta migrations.
- The duration of the migration depends on various factors, including the number of documents, document size, the customer's upload speed, storage speed and other factors, and can best be estimated based on the test migration.

Migrating documents and metadata

Technical migration procedure



This is how it works

1. Check the prerequisites and limitations of a migration.
2. Carry out the migration preparations.
3. Confirm the migration procedure and the cut-over planning with the customer.

- Explain which migrations will be performed (test, performance measurement, live, delta, etc.).
- Explain which documents and dossiers will be migrated from the source system. This information was described and agreed in the migration concept.

> **Warning**
> If only documents from a certain year onward are to be included, there may be dossiers linked to the selected documents that may have been created before this period. In this case, the dossiers to be migrated should be explicitly identified and migrated.

4. Run d.3 update checker, d.3 database checker and d.3 document checker (link) in the source system and apply the suggested corrections.
5. Enable the migration API.
   - Define the users and assign the necessary permissions: tenant admin, authorized for at least one document type.
   - Log in to the system with an appropriate user. Open the search or storage interface so that d.3 server recognizes the user.
   - Create an API key for the user.
   - Give the user permission to use the migration API. A guide can be found in our Knowledge Base: Enabling the d.velop documents migration API
   - Test the migration API with an API call.
6. Configure the export API, see How do I export documents and dossiers from an on-premises system using the export API?
7. Configure the migration process.
   - Configure the migration tool.
   - Configure the mapping for the categories and properties.
   - Configure the mapping of the users.

> **Warning**
> During the document migration, there can be no manual, write access to the migrated documents in the target system. The corresponding permissions must be explicitly revoked! Guide: How do I revoke write permissions in an on-premises system to perform a migration without information differences (delta)?

8. Document migrations
   - Optional: performance measurement
     - A performance measurement can be particularly useful when a large number of documents with a large storage volume are migrated. Determine the number of documents and dossiers to be migrated to the cloud system. Ideally, the quantity will be large enough for the migration to run continuously for one to three days. Log the start time, the number of documents and dossiers and the end time of the migration.
     - Extrapolate the duration of the live migration based on the measured performance.
     - Validate the calculated run time against the project schedule.
     - Identify blockers and performance impediments. Ensure that they are eliminated (e.g. storage speed, internet connection, database performance).
   - Test migration
     - Instruct the customer to make a representative selection of documents.
       - At least one document from each category should be included.
       - In addition, you should migrate several documents from categories that are relevant in the various interfaces (e.g. access from SAP) and in important company processes. Customers usually have a good idea of which categories are relevant in this respect.
       - The number of documents and dossiers migrated in the test migration depends heavily on the total volume, the project schedule and the number of categories.

        - For small migration volumes (~100k/~200k), all documents can be migrated in the test migration.
        - For large volumes, it may make sense to restrict the data to a single time range.
      - If possible, documents from all affected years should be migrated.
    - Carry out the export of the selected documents; see How do I export documents and dossiers from an on-premises system using the export API?
    - Carry out the transformation and import of the selected documents; see How do I perform the document migration using d.velop cloud migration?
    - Carry out the error analysis and error handling.
    - Provide the customer with the migration report so that they can track the migration status.
    - Have the customer accept the test migration.
  - Performance measurement and extrapolation for live migration
    - Document the export and import speeds and performance.
    - Validate the calculated run time against the project schedule.
    - Optional: Identify blockers and performance impediments. Ensure that they are eliminated (e.g. storage speed, internet connection, database performance).
  - Live migration
    - Carry out the export of the selected documents; see How do I export documents and dossiers from an on-premises system using the export API?
    - Carry out the transformation and import of the selected documents; see How do I perform the document migration using d.velop cloud migration?
    - Carry out the error analysis and error handling.
    - Provide the customer with the migration report so that they can track the migration status.
    - Have the customer accept the live migration.
  - Delta migration
    - Carry out the export of the selected documents; see How do I export documents and dossiers from an on-premises system using the export API?
    - Carry out the transformation and import of the selected documents; see How do I perform the document migration using d.velop cloud migration?
    - Carry out the error analysis and error handling.
    - Provide the customer with the migration report so that they can track the migration status.
    - Have the customer accept the delta migration.

Additional links and information

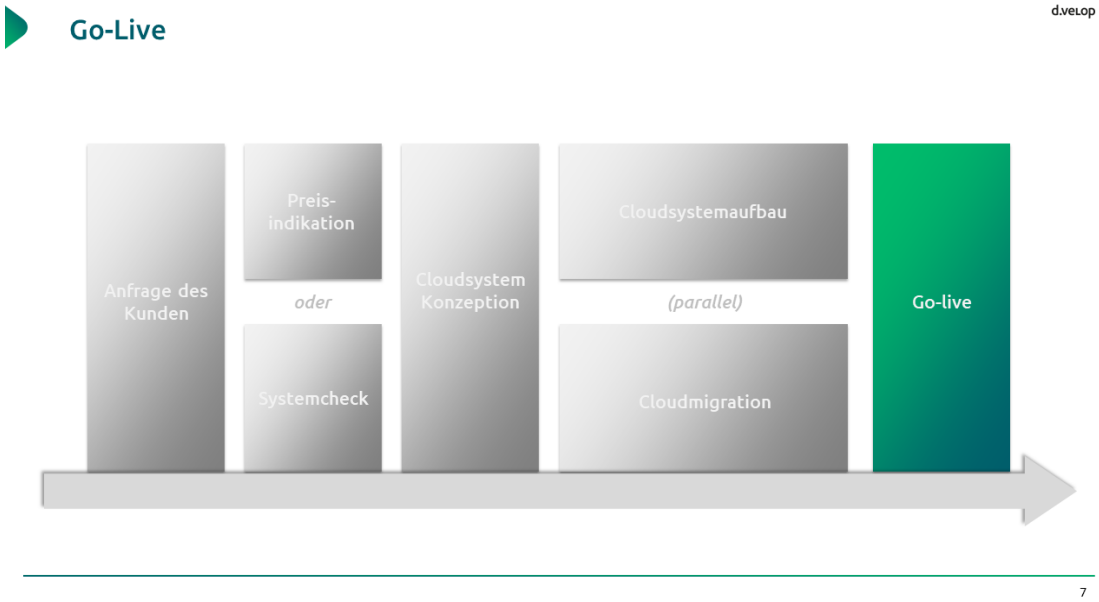
- Description of the migration process: link (only for partners and internal staff)
- Prerequisites and limitations of a cloud migration
- Preparing for the document migration: link
- How do I perform the document migration using d.velop cloud migration?
- “Cloud Migration Check” PowerShell script: Send a support ticket to d.velop and request the “Cloud Migration Check” script. Have them redirect you to the “Cloud Migration” team.
- Export API
  - Export API and export client download: link
  - Documentation for the export API and export client: link
  - Guide to exporting documents and dossiers: link
- Migration API
  - Enabling the migration API: link
- Checking the document migration for completeness: link
- Cloud migration FAQ: link (only for partners and internal staff)
- Website on cloud migration with d.velop: link

1.3.6. Finishing the migration project with the go-live

Introduction

The go-live date marks the end of the migration project and the start of live operation. On this date, the source system (on-premises) is switched off, all supplying and accessing processes are switched over to the cloud system and the last changes/newly imported documents are transferred to the cloud. This means that all the required documents from the existing system have been completely transferred to the cloud and users can now begin working in the new cloud system.

A migration report is created once the migration is complete. The report documents how many documents were migrated per category. The customer must keep this report as documentation of the project.



Goals of the phase

- Perform and ensure the success of all activities necessary for going live with the cloud system, and transfer the project to the post-project phase.
- Ensure that all required resources (including external service providers) are available during the hypercare phase after the go-live.
- Ensure that all necessary information on the project, such as documentation and access information, is available and up to date for the post-project phase.

Go-live

1. Review any open issues at an early stage to accelerate the go-live.
2. Check any contractual agreements regarding the go-live, including:
   - Compliance requirements
   - Revenue-relevant milestones
   - Service level agreement (SLA)
   - Dealing with defects that prevent acceptance
3. Ensure that the customer's system is ready for operation.
   - Is all the necessary documentation available and up to date?
   - Has adequate monitoring of the system been implemented?
4. Check the internal company information, e.g:
   - Documentation
   - Operating manuals

5. Identify and inform the relevant contact persons for the post-project phase.
   - Sales contact persons
   - Managed Service
   - Support
6. Ensure that all custom developments have been deployed in the live system.
   - Test the agreed functions using a test catalog.
   - Go-live approval is given by the project manager or consultant.
7. Plan the go-live.
   - Carry out the rollout/cut-over planning.
     - By business unit or tenant
     - By country
     - Big bang rollout
   - Plan the training hours with the customer.
   - Plan the timeline for the system go-live:
     - Agree on the time frame with the customer.
     - Plan downtime for the go-live or for connecting external systems.
     - Coordinate with the consultants, particularly regarding weekend work.
     - Schedule the distribution of software (e.g. Outlook add-in).
     - Create a go-live schedule.
     - Plan the hypercare phase after the go-live:
       - Ensure that the relevant staff have sufficient availability.
       - Ensure that the customer's contact persons are available.
       - Ensure that the suppliers are available.
       - Agree with the customer's project management team how to receive information from the key users in the event of anomalies (e.g. central e-mail address, phone, etc.).
8. Inform the users of the go-live (to be done by the customer):
   - When is the switchover scheduled?
   - What will change for users?
9. Inform the back office about the start of billing.
10. Create the project completion checklist.
11. Carry out the functional go-live on the deadline in coordination with the customer:
    - Stop the delivering processes to the source system and process the final imports.
    - Shut down the source system so that no further changes to documents or new imports can be made. (If necessary, also revoke the corresponding permissions.)
    - Carry out a final delta migration.
      - Perform the last delta export for the changes and new imports occurring from the time of the last export until the stopping of the source system; see How do I export documents and dossiers from an on-premises system using the export API?.
      - Transform the documents and import them into the target system.
      - Carry out the error analysis and error handling.
      - Provide the customer with the migration report so that they can track the migration status.
      - Perform the migration completeness check.
    - Check the document inventory in the target cloud system and obtain written confirmation from the customer that it is accurate.
    - Switch delivering systems and processes over to the cloud system.
    - Carry out further activities for starting up the system based on the cut-over plan.
    - Assign the user permissions (for editing and importing documents).
    - Provide the acceptance form for the customer to sign in good time.
12. Inform the users about the completion of the go-live (to be done by the customer).
13. Perform the post-work necessary for the migration.
    - Have the customer to dismantle the migration infrastructure.
    - Have the customer's auditor check the migration.

- Carry out the dismantling of the on-premises environment.
- Revoke the project participants' permissions to access the customer's cloud tenants.
- Revoke the permissions to use the migration API and delete the migration user and API keys.

14. Document the cloud system and back up the configurations.
15. Prepare the planning and official project sign-off according to the project completion checklist.
16. Obtain feedback on the migration from the perspective of the project participants using the following short survey: Cloud migration feedback for project participants
17. Conduct the customer satisfaction survey on the migration project: Cloud migration feedback for customers

Additional links and information

- Description of the migration process: link (only for partners and internal staff)
- Checking the document migration for completeness: link
- Survey for project feedback from the project participants: link
- Survey for determining the customer's satisfaction with the project: link
- Cloud migration FAQ: link (only for partners and internal staff)
- d.velop website on cloud migrations: link

1.4. Detailed guides

In this section you will find detailed guides and information about the necessary processes during a cloud migration.

1.4.1. How do I perform a system check?

Overview

This section will show you how to perform a system check. A system check enables you to do the following:

- Obtain an accurate overview of the source system.
- Identify possible blockers.
- Design a target system.
- Create an estimate of the project hours required for the cloud migration.

Prerequisites

Mandatory:

- You need access to the customer system: all live servers that run d.velop components or are related to d.3 (can also be done by the customer).
- You need access to the d.3 administration.
- You need access to the d.3 database (executing database queries).

If applicable:

- You need access to the d.cold configuration.
- You need access to the d.capture batch configuration.
- You need access to SAP archivelink.
- You need access to existing workflows.
- You need access to hooks and scripts.
- You need access to other components and configurations that would be affected by a cloud migration of the system.

Components required, with version

Component	Version
System check form (en & de)	Latest version
Customer's Microsoft Excel	-
Cloud migration toolkit	Latest version

This is how it works

Goal of the system check

The aim of the system check is to provide you with an overall picture of the customer's system and to determine the feasibility of a cloud migration. At the end of a system check, you should have an overview of the system architecture (current status), blockers or showstoppers, possible cloud scenarios (including a rating of whether a public cloud or private cloud might be more appropriate) and an indication of costs.

> **Warning**
> Keep a written record of the system check, all information about the system, as well as plans and findings during the process.

Procedure

1. **Collect system information and enter it in the system check questionnaire (en & de).**
   - You can provide the questionnaire (en & de) to the customer. Based on the descriptions in the form, the customer's administrators should be able to find the required information in the d.3 system and complete the questionnaire.
   - After receiving the completed questionnaire, including the attachments, check whether there are any ambiguities or incomplete information. If so, you should resolve these issues together with the customer.
   - Gather relevant document data to better estimate the work required for the document migration.
   - Use the "Cloud Migration Check" PowerShell script to query information on possible migration errors.
2. **Save all information and files relating to the customer system and the description of the system in its current state.** Save the following information and record a description of the current state of the system in a system check results document.

1.
   - The fully completed system check form
   - All CSV files for the "Cloud Migration Check" script
   - d.3 backup file (master data export)
   - Results from:
     - d.3 database checker
     - d.3 update checker
     - d.3 document checker
   - Screenshots of the components on the servers
   - All custom code files
     - Hooks (JPL & Groovy)
     - Scripts from the process manager
     - Scripts from Windows Task Scheduler
     - Other scripts and tools
   - d.cold configuration files
   - d.capture batch configuration file
   - Workflow export, including function/description of the workflow

- List of supplying and accessing external systems, including a description of the systems' functions.
- System health report, including screenshots of recurring errors in the log or d.3 async jobinspector.

2. **Create a diagram or sketch of the system in its current state.**
   - Create a sketch of the customer system (e.g. with Gliffy or Visio) to elucidate the system structure and to better understand the interrelationships.
   - The illustration should show all the servers and other IT systems that contribute to the delivery of the desired system functions. These include application servers, functional servers, storage, database servers, Active Directory (AD), clients, third-party systems and others.
   - Depict the following necessary information:
     - live servers, installed d.velop software, and relevant Customizing such as hooks or scripts.
     - Also include changes, for example, if other system environments such as test or development systems exist and there are differences compared to the live system.
     - Communication pathways, direction of the pathways and interfaces used (e.g. d.3 API/D3FC, d.3 web webservice, DMS API, etc.)
     - Clients, including mapped functions
     - Connected third-party systems
     - Other systems and processes that are relevant to the system but are not managed by the customer, for example (e.g. external service providers).
3. **Analyze the repository configuration.**
   - You cannot carry over all configurations of the repository to a cloud system. While there are few obstacles when configuring a private cloud environment because d.3 admin can be used, there are differences for the public cloud. You cannot use d.3 admin in a public cloud system; dms-config (webadmin) is available instead.
   - You can use the d.3 backup file (master data export) to analyze the repository configuration using the cloud migration toolkit. A guide can be found in our Knowledge Base: Repository configuration compatibility check
   - You can use the toolkit's warnings to classify the configuration and assess the feasibility of migrating to a multi-tenant cloud.
   - Analyze the CSV files of the "Cloud Migration Check" PowerShell script to determine the document quantity, volume, distribution, possible migration errors (size missing, file name missing), risks for the migration and other information about the document migration.
   - Save the results of the evaluation in an Excel export.
4. **Analyze the custom code (hooks and scripts).**
   - Hooks
     - You can continue using hooks in the cloud. In a public cloud, this is done using webhooks. In a private cloud, you can use Groovy hooks or webhooks with certain limitations.
     - You cannot carry over existing hooks 1:1. Therefore, check the transfer of each hook individually.
     - The analysis should be performed by a consultant with knowledge of hooks.
     - The following will help you with the analysis: How do I handle hooks in a cloud migration?
   - Scripts
     - In the cloud, you can continue to use scripts for regular activities. However, existing scripts may use interfaces and access points that are not available in a cloud system. For example, you cannot access the d.3 database directly. As an alternative, use the DMS API or another API of the system.
     - The following will help you with the analysis: How do I handle scripts in a cloud migration?
5. **Analyze d.capture batch.**
   - Analyze d.capture batch to assess the feasibility of migration.
   - Here are the most common strategies for working with d.capture batch:
     - d.capture batch and the configured batch classes are replaced by d.velop inbound suite as a pure cloud service. This means that d.capture batch is no longer required.
     - d.capture batch batch classes are replaced by other components and apps (e.g. d.velop invoices).

- d.capture batch continues to run on the customer server in combination with a cloud tenant. You can customize the batch classes so that a direct connection to the d.3 server is no longer required. The documents are imported via d.velop cloud uploader.
- The following will help you with the analysis: How do I work with d.capture batch during a cloud migration?

6. **Analyze d.cold.**
   - There is no alternative component for d.cold that runs exclusively in the cloud.
   - If the functions are still required, d.cold must remain on premises on the customer's server.
   - The following will help you with the analysis: How do I work with d.cold in a cloud migration?
7. **Analyze further system components.**
   - A customer system may contain other system components, such as workflows, SAP connections, contract management, e-mail archiving and others. There is currently no general analysis template for these other system components. Persons with expertise in the specific area should be brought in to examine these systems.
   - Consider the following key questions:
     - What is currently mapped? Which functions are configured?
     - How can the current state of the system and the current scope of functions be mapped with a cloud system?
       - Can the function be mapped in the cloud without an on-premises component having to remain with the customer?
       - Can the components be kept on-premises and still work together with the cloud?
       - Are there any lost or modified functions about which the customer must be informed?
   - At the end of each analysis, you should create an evaluation of the respective function or component; this analysis should answer the previous questions in writing and be understandable for the customer.
8. **Describe the migration scenarios (system structure).**
   - During a cloud migration, provide the following once the analysis of the source system is finished and the mappability has been assessed:
     - A written summary of the findings.
     - A draft of a cloud scenario that describes how the individual components, configurations and functions can be mapped in a cloud system.
   - In the first step, check the known limitations and blockers to a migration, see: Prerequisites, limitations and blockers. Note any limitations or blockers that apply to this customer system.
   - In the second step, check the system components (d.velop software):
     - For each component, check whether a component from the source system is available in the cloud system or can be replaced using an alternative.
     - If it cannot be mapped in the public cloud, this represents a blocker for the public cloud scenario.
       Write down: **Consequence: Loss of function or no migration**
   - From the previous analyses (hooks, scripts, d.cold, d.capture batch, workflows, etc.), record the challenges and the possible losses of function.
   - The challenges and possible blockers alone may result in a decision for or against cloud migration.
     - A public cloud is always the first choice.
     - Migrating to a public cloud may be possible in exceptional cases.

> **Note**
> Keep a written record of the system check, all information about the system, as well as plans and findings during the process.

     - Always keep a written record of the challenges, possible alternatives and the resulting consequences.
     - Also record the prerequisites in writing.

    - Coordinate the next steps with the Sales department and the customer. If you decide on a further analysis, the process can continue.
  - Create a sketch of the target system:
    - As with the sketch of the current system, use Gliffy, Visio or similar to create a sketch of the target system.
    - Describe which components will be replaced by which functions or apps in the cloud and which components may still need to remain on the customer's own servers.
9. **Describe the migration scenario (document migration).**
10. **Create an estimate of the required project hours.**
    - After drafting the possible cloud target system scenarios, also create an estimate of the tasks and hours required to achieve the scenario.
    - The following tasks are typical components of a cloud migration:
      - Design
      - Create one or more cloud tenants
      - Set up one or more cloud tenants
      - Carry over the repository configuration
      - Set up the permissions
      - Set up the AD connection
      - Carry over hooks
      - Carry over scripts
      - Set up the SAP connection
      - Set up the host import scenario
      - Carry over the d.cold functions
      - Carry over the d.capture batch functions
      - Set up contract management
      - Set up the incoming invoice processing scenario
      - Prepare for the document migration
      - Set up the migration mapping
      - Perform a test migration
      - Perform the live migration
      - Perform delta migrations
      - Finish the document migration, including reporting
      - Go-live assistance and hypercare phase
      - Train the users
      - Documentation
      - Project management tasks
11. **Finish the system check.**
    - Once you have recorded and analyzed the source system, you can answer the following questions:
      - What are the possible migration/cloud scenarios?
      - What are the challenges and prerequisites?
      - How might a target system look?
    - You can make the written analyses and concepts available to the customer or present them during a scheduled meeting.
    - Also make the findings available to the customer if blockers have been identified that make a migration project impossible at the current time. If necessary, also show a plan for how a path to the cloud could be achieved after preliminary restructuring projects.
    - The system check is now complete and you can initiate further tasks as part of the migration project.

Additional links and information

- **Recording system information**

  - System check questionnaire (en & de)
  - “Cloud Migration Check” PowerShell script: Send a support ticket to d.velop and request the “Cloud Migration Check” script. Have them redirect you to the “Cloud Migration” team.
  - Tool for evaluating a repository using pivot tables: “d.3 Auswertung Basis” (internal only)
- **Analyzing the repository configuration**
  - How do I analyze an on-premises repository configuration with the cloud migration toolkit?
- **How can hooks be mapped in the cloud?**
  - How do I handle hooks in a cloud migration?
- **Limitations and blockers to a cloud migration**
  - Prerequisites
  - Limitations and blockers

1.4.2. How do I handle hooks in a cloud migration?

Overview

This section tells you what you need to know when analyzing hooks in on-premises systems for transfer to the cloud.

Prerequisites

You require access to hook files.

This is how it works

You can continue using hooks in the cloud. In a private cloud, you can use Groovy hooks with limitations or webhooks. In a public cloud, this is done using webhooks.

Alternatively, you can also configure many scenarios using d.velop custom logics. Existing hooks cannot simply be carried over; rather they must be checked and transferred individually.

Ideally, the analysis will be carried out by Consulting employees who have the relevant hook knowledge.

Possible strategies for working with hooks:

- Do away with the hooks by configuring the Customizing scenario using d.velop custom logics and d.velop business objects
- Analyze and convert the hooks to webhooks

Keep the following in mind when analyzing the hooks:

- Are the hooks JPL or Groovy hooks?
- Are DLL, EXE or other files or applications executed? If yes, check their functions and mappability in the cloud.
- Are file operations used (write file, read file, etc.)? File operations are no longer possible. Check whether these file operations are necessary or whether alternatives exist.
- Are database queries executed? If yes, keep the following additional aspects in mind:
  - Which database tables are used and which information is collected? Can the information from the database query also be queried using the DMS API? Are there any limitations?
  - Are customer-specific database tables used that do not match the standard d.3 scheme? You can use custom database tables in d.velop business objects and call them using hooks.
- Which entry points to the rendition service are used? Rendition hooks can no longer be used in the cloud.
- Are dataset hooks used? If yes, could these dataset hooks be mapped with d.velop custom logics so that the hook is no longer needed?
- Are master data validations used (for example in the hook **insert_entry_10**)? If yes, could these master data validations be mapped with d.velop custom logics so that the hook is no longer needed?
- Are other systems accessed (SAP, NAV, etc.)? If yes, can these systems also be reached via the Internet?

- Are functions mapped that exist but are not currently used?
- Are functions mapped that are currently used but that would become obsolete after a cloud migration (e.g. contract management hooks)?
- Are there other functions that cannot be mapped in the cloud?

1.4.3. How do I handle scripts in a cloud migration?

Overview

This section will show you how to work with scripts during a cloud migration and what to keep in mind.

Prerequisites

- You must have knowledge of working with scripts.
- You must have knowledge of d.velop documents (cloud) and APIs.
- You must have access to the scripts in d.velop process manager or in Windows Task Scheduler.

Important information

There are various options for replacing scripts, which must be weighed up and evaluated for the specific case. That said, existing scripts usually cannot be executed unchanged, but rather must be adapted or replaced. The reason for this is that scripts in a cloud system can no longer directly access the d.3 server and its underlying API and database. Instead, scripts use the DMS API or other APIs of the cloud system in this scenario.

Possible strategies for working with scripts:

- Execute the unmodified script or convert it to the DMS API or other APIs
- Redevelop the script in the d.velop scripting app and trigger the script with an event (or use existing templates)
- Redevelop the script as part of a PowerShell script and execute it on the customer server

This is how it works

Check whether the existing script can still be executed and operated. It is important here whether it is a JPL, Groovy or other script.

Executing JPL scripts

JPL scripts can generally no longer be executed because the customer's execution environment is missing after a migration of the d.3 server.

Executing Groovy scripts

Groovy scripts can still be executed on the customer's execution evironment. Take note of which access operations are performed and how they can be replaced (e.g., via API calls to the new system).

Executing other scripts

Other scripts can still be run on the customer's execution environment. Take note of which access points are used and how they can be replaced (e.g., via API calls to the new system).

Checking the functions in the script

1. Check the functions contained in the script:
   - Are functions mapped that exist but are not currently used?
   - Are functions mapped that are currently used but that would become obsolete after a cloud migration?
   - Are database queries executed and do they access the d.3 database? Which information is collected? Can this database information also be queried using the DMS or another API of the cloud system, or are there limitations?

- Are there other functions (e.g. accesses to the d.3 API) that are currently used but cannot be mapped in the cloud?

2. If functions can no longer be executed, check whether the functions can be mapped using the d.velop scripting app. Please keep the following in mind:
   - Are DLL, EXE or other files or applications started? If yes, you can map the function of the EXE or DLL file in the script if necessary. If it cannot be mapped in the d.velop scripting app, the function must be executed on the customer's servers.
   - Are file operations used (write file, read file, etc.)? If yes, the script cannot be operated in the d.velop scripting app, and must instead be executed on the customer's servers.
   - Are customer-specific database tables used that do not match the standard d.3 scheme and cannot be carried over to the cloud? You can map custom database tables in d.velop business objects. If mapping in d.velop business objects is not an option or is not desired, local database tables must still be accessed on the customer's servers. Execution in the d.velop scripting app is not possible in this case.
   - Are other systems accessed (SAP, NAV, etc.) that can also be accessed from the Internet? If not, execution in the d.velop scripting app is not possible. In this case, the script must still be executed on the customer's servers.
3. If mapping in the d.velop scripting app is not possible or does not make sense, check whether the desired functions can be recreated using a PowerShell script. In this case, the PowerShell script is executed on the customer's server.

If the options mentioned are not feasible, the script cannot be mapped in a different way and cannot be changed. In this case, the script cannot be operated in a public cloud, meaning that a cloud migration is not possible.

1.4.4. How do I work with d.capture batch during a cloud migration?

Overview

This section will show you how to work with d.capture batch during a cloud migration and what to keep in mind.

Prerequisites

You require access to the d.capture batch installation or the d.capture batch export file (**.dcc**).

Important information

The feasibility of migrating d.capture batch must be analyzed and evaluated in advance, as this component is a potential obstacle to cloud migration.

Possible strategies for working with d.capture batch:

- Replace d.capture batch and the configured batch classes using d.velop inbound as a pure cloud service
- Replace d.capture batch batch classes by other components and apps (e.g. d.velop invoices)
- Continue to run d.capture batch on the customer's server in combination with a cloud tenant. Customize the batch classes so that a direct connection to the d.3 server is not required and import the documents using d.velop cloud uploader.

This is how it works

1. Check whether the functions of d.capture batch can be mapped in d.velop inbound. There may be batch classes that are no longer required. Ideally the customer would decide this. Otherwise, people who have appropriate knowledge of d.velop inbound and d.capture batch can also help to evaluate the mappability with d.velop inbound.
2. If d.velop inbound is not an option, check whether the batch classes can be replaced by other apps and components. In the context of invoice processing, for example, d.velop invoices is a suitable alternative.

3. If the customer does not want alternative mapping, analyze the batch classes with regard to the following modules:
   - **export to d.3** (**dcd3exp.dpm**): direct connection to the d.3 server for the import.
   - **validate via d.3** (**dcd3val.dpm**): direct connection to the d.3 server for the validation.
   - Script module (**dcscript.dpm**): custom script in which direct access to the d.3 server is possible.

If these modules are available, check whether this connection is required in the process in the event of a direct connection to the d.3 server. If necessary, you can replace the **export to d.3** module with an **export for hostimp** module and remove the **validate via d.3** module. With the **export for hostimp** module, the exported files are imported to the cloud via d.velop cloud uploader.

If a script module is available, people with appropriate knowledge of d.capture batch must check the contents of the script. You can also run the script on a d.3 system in the cloud without a connection to the d.3 server.

If the options mentioned are not feasible, d.capture batch cannot be mapped in a different way and cannot be changed. In this case, you cannot operate d.capture batch in a public cloud, meaning that a cloud migration is not possible.

1.4.5. How do I work with d.cold in a cloud migration?

Overview

This section will show you how to work with d.cold during a cloud migration and what to keep in mind.

Prerequisites

You require access to the d.cold installation.

Important information

There is currently no alternative component for d.cold that runs exclusively in the cloud. If the functions of d.cold are still required, d.cold remains as an on-premises installation on the customer's server.

Possible strategies for working with d.cold:

- Replace d.cold with other components and apps that can offer the desired functions (e.g. process SAP documents directly via d.velop archivelink without d.cold)
- Update the existing d.cold installation and execute it on the customer's server on premises

This is how it works

1. Check whether the functions of d.cold can be mapped with other components and apps. There may be process chains configured that are no longer required. This is for the customer to decide. Typically, d.cold can be replaced with d.velop archivelink for SAP processing.
2. If d.cold is not to be replaced completely, d.cold must continue to be operated. This ensures that the desired functions and processing steps are retained. In this case, the import takes place via d.velop cloud uploader. Please keep in mind:
   - We recommend that you update d.cold and switch to a job database.
   - Check whether there are files in the processing directories of the d.cold process chains in which unresolved errors have occurred. If so, you must plan troubleshooting into the migration project, to be performed by the customer or Consulting.
   - Also check whether there are d.cold process chains for processing SAP documents. Since such d.cold process chains can be an obstacle to migration, the d.cold process chains must be recorded and analyzed by SAP Consulting.
   - To upload to the cloud system, d.velop cloud uploader must be set up.

If the options mentioned are not feasible, d.cold cannot be mapped in a different way and cannot be changed. In this case, you cannot operate d.cold in a public cloud, meaning that a cloud migration is not possible.

1.4.6. How do I carry out the basic configuration of a public cloud system for the document migration?

Overview

This section will show you how to carry out the basic configuration of a public cloud system in order to migrate documents.

Prerequisites

- A cloud tenant with d.velop documents has been purchased and you have access to the cloud tenant.
- All users of the on-premises source system who edit or own the documents to be migrated have a unique e-mail address.
- A master data export from the customer's live on-premises source system has been carried out.

Necessary components

Component	Version
Cloud migration toolkit	Latest version

This is how it works

Purchase the d.velop cloud migration toolkit for the cloud tenant in the d.velop store: https://www.d-velop.com/cloud. Then carry out the following steps.

Carrying over the repository configuration

1. Perform a master data export to transfer the document types, properties and datasets from the source system and import them into the cloud migration toolkit. Further information on this largely automated process can be found at the following link: https://kb.d-velop.de/s/article/000002003
2. If you want to reconstruct the dossier scheme during the migration, transfer the dossier scheme configuration automatically or manually if necessary.
3. Define simple permissions for the categories in order to view migrated documents. You can create the future permissions structure in parallel with the migration.

Making users available in the cloud system

Make on-premises users available in the cloud migration toolkit:

- If all users are included in the master data export (d.3 backup), save the users for mapping by clicking **Apply** under **User migration**.
- If not all users are included in the master data export, for example, because an Active Directory (AD) is connected in the source system, you can use a database query in the source system to create a list of all users in the system. The list is saved in a CSV file and can be provided in the cloud migration toolkit. You can view the database query and the CSV file format in the help guide of the cloud migration toolkit under **How do I export the users to a CSV file?**

Make the existing on-premises users available in the cloud system:

- If AD is required, perform the AD connection to make the users available in the cloud system.
- If AD is not required, use the cloud migration toolkit to automatically transfer the users specified there to the User Management App. Under **User mappings**, you can also have all unmapped users created automatically in the system.

Additional links and information

If you want to transfer the repository configuration from a public cloud test system to a live public cloud system, you can use the package export in the **Configuration** feature under **Document and dossier structures**.

1.4.7. How do I prepare for the document migration?

Overview

The section will show you how to prepare for a document migration. You will learn the necessary steps and prerequisites.

Prerequisites

- A cloud tenant with d.velop documents has already been purchased and you have access to the tenant.
- You know the prerequisites for a cloud migration and the limitations. You have ensured that your system environment meets the prerequisites.
- You have finished the basic configuration of the cloud tenant (guide).

Necessary components

Component	Version
Cloud migration toolkit	None
d.velop documents repository export API	Latest version
Migration API (cloud)	None
d.3 server in the source system	8.x or higher

This is how it works

Preparing to configure the repository

Once you have ensured that the prerequisites are met, prepare to configure the repository with d.velop cloud migration toolkit.

To do this, upload the current d.3 backup file (master data, master data export). If not all users are contained in the backup file, you can provide the missing users in the toolkit using a CSV file.

> **Note**
> To avoid errors in the migration, all users in the system should be included in the mapping. Include all users, even those who are listed as editors or creators in documents, for example.

Mapping the users

Mappings are used to link the users from the source system to the users in the cloud.

1. In the toolkit, select **User and group management > Edit user mappings**.
2. Map the users from the source system to the corresponding cloud users. All documents whose owners or editors are on-premises users are mapped to the corresponding cloud users during the migration.
3. Save the user mappings.

If you cannot map a user from the source system to a cloud user, you can set up a fallback user in the cloud system. When carrying out mapping, you can enter this fallback user for the remaining users so that documents are migrated to the fallback user. This procedure may be necessary if there are users who were active in the source system in the past but have since left the organization, for example.

> **Note**
> We recommend mapping all users from the source system. Otherwise errors may occur during the document migration.

Creating a user to use the d.velop documents migration API

Define a user who is permitted to use the migration API. A guide can be found in the following KB article: https://kb.d-velop.de/s/article/000002002

Enabling the export API

Enable the export API (guide).

Additional links and information

- Purchasing the cloud migration toolkit
- d.velop documents repository export-API
- How do I export documents and dossiers from an on-premises system using the export API?

1.4.8. How do I enable the migration API?

You can enable the migration API using the d.velop cloud migration toolkit.

A guide can be found here: https://kb.d-velop.de/s/article/000002002

1.4.9. How do I export documents and dossiers from an on-premises system using the export API?

Overview

This section will show you how to export documents and dossiers from an on-premises system using the d.velop documents repo export API (export API).

The API documentation is available here: d.velop documents repo export API

Prerequisites

- The prerequisites for the export API are met.
- You have access to a user who has export permissions (d.3 server version 8.39.x or later) or d.3 administrator permissions (for older d.3 server versions).

> **Warning**
> You cannot use a system user for the export, e.g. **d3_admin**.

Necessary components

Component	Version
d.velop documents repo export API	Latest
d.velop documents repo exporter	Latest
d.3 server	8.x or higher

This is how it works

Preparing for the export

Before you can start the actual export, you first need to prepare your system environment.

1. Download d.3 server tools (with API and client). You can find the files on the corresponding page in the d.velop service portal.
2. Execute the setup for d.3 server tools.

Before starting the export, execute the following tools and carry out the recommended repairs.

- d.3 update checker
- d.3 database checker
- d.3 document checker

Starting the export API

In order to export documents and dossiers, you first have to start the export API.

For d.3 server version 8.39.0 (from 09/07/2023) and later, the API is already available in the on-premises system in the file **dms-docs.exe**. Manual starting is therefore not necessary in this case.

For all previous versions, launch the file **d.velop_documents_repo_export_API.exe** that was delivered with d.3 server tools (guide). You will find the file at the file path for the d.3 configuration (by default ../d3/d3server.prg/D3X).

> **Note**
> Please make sure that the user has the necessary permissions. Information on permissions can be found in the API documentation. The user must also be a d.3 user. An LDAP user is not sufficient.

We recommend entering the export API in d.velop process manager and starting the API from here. The call might look as follows: **C:\d3\d3server_tools\d.velop_documents_repo_export_API.exe -u dvelopExpo -c C:\d3\d3server.prg\D3T**

Alternatively you can start the API using the Windows command prompt (**cmd.exe**). The call might look as follows: **d.velop_documents_repo_export_API.exe -c C:\d3\d3server.prg\D3T -u dvelopExpo**

Configuring the export

You can configure the export using a JSON file that was included as a template (**d.velop_documents_repo_exporter.config.json**). You can define the parameters for the export. To keep the JSON file valid, make sure to enter at least the following:

- Base address at which the export API can be reached. You can find further information in the API documentation.
- Path to the export directory. You can find further information in the API documentation.
- User (and password) that will be used to perform the export and that started the export API. You can find further information in the API documentation.

Under **filter** you can also define which documents and dossiers will be exported. There are various filter options for categories, change date or document IDs. You can find further information in the API documentation.

Starting the export

You can carry out the export using the d.velop documents repo exporter client.

You can start the client using the Windows command prompt (**cmd.exe**) in the same way as the API. You can find the possible call parameters in the API documentation.

An example call might look as follows: **d.velop_documents_repo_exporter.exe --configFile d.velop_documents_repo_exporter.config.json**

Remedying possible errors

If errors occur despite your preparations, first check the logs and error messages. The export API logs errors in the d.3 log file. You can open the log file using d.velop logfile viewer (d.3 logview). In the **Source** column, enter the filter **DOCEXPO** to filter out the entries from the export API.

The d.velop documents repo exporter application records individual logs for jobs that are stored in the export directory. You can find further information on the logs in the API documentation.

1.4.10. How do I perform the document migration using d.velop cloud migration?

Overview

The section will show you how to perform a document migration from an on-premises system (source system) to d.velop documents cloud (target system) using d.velop cloud migration.

> **Warning**
> During the document migration, there must be no write access to the documents in the target system. You must explicitly revoke the write access.

Prerequisites

- A cloud tenant with d.velop documents has already been purchased and you have access to the tenant.
- You know the prerequisites for a cloud migration and the limitations. You have ensured that your system environment meets the prerequisites.
- The cloud migration toolkit is posted in the cloud tenant.
- The d.velop cloud migration tool is posted in the cloud tenant.
- You have finished the basic configuration of the cloud tenant (guide).
- You have prepared for the document migration (guide).
- You have had the export API of the cloud tenant enabled via a support ticket.
- You have access to a Windows PC or Windows server (e.g. d.3 Appserver) on which the d.velop cloud migration connector can be run.

Necessary components

Component	Version
Cloud migration toolkit	None
d.velop cloud migration	None
Migration API (cloud)	None
Export API (cloud)	None

Performing a document migration with d.velop cloud migration (d.velop documents on-premises)

> **Important**
> Before a document migration, the necessary preparations must be performed. You can find more information at How do I prepare for the document migration?.
>
> The preparation for a document migration includes, among other things, considering the Prerequisites and Limitations as well as enabling and granting access to the required interfaces (Export API and Migration API).

Uploading the d.3 backup file in the cloud migration toolkit

In order for the migration system to know what the source system looks like, a d.3 backup file is required as an export from the source system. You can obtain the file in d.3 Administration under **System Settings > Data Backup > Export**.

Upload the d.3 backup file to the Cloud Migration Toolkit.

Performing the category mapping

1. Select the source and target in d.velop cloud migration.
2. Map the source categories to the categories for the target system in d.velop cloud migration.
   - For 1:1 mappings, use the option **Apply automatic mapping**.
     a. Map the properties for each category.
     b. Complete the mapping for each category using the lock icon.

> **Note**
> Only completed categories are taken into account when migrating documents and dossiers.

Mapping the users and groups

1. Map the users and groups in the cloud migration toolkit. Provide any missing users with a CSV file in the toolkit.
2. Open the user and group mapping in d.velop cloud migration
3. Apply the mapping from the cloud migration toolkit.
4. Configure a default user to prevent migration errors.

> **Note**
> The default user is a user that is configured if a user field in the document metadata is empty but is required for the migration. For example, dossier links in older systems may not have any users but may still be required in the cloud. If a default user has been configured, the default user is used in this case.

Downloading and configuring d.velop cloud migration connector

1. Download the connector application on the **Download and connect** page.
2. Save the .exe file that is provided on a Windows server or client (see system requirements).
3. Start the exe file using the Windows command prompt (cmd.exe).
4. Using the following command enables the initial configuration: **CloudmigrationConnector.exe --configure**

You then configure the API key to access the target system, repository ID, base URI and export directory in this sequence.

Configuring the migration

You configure and perform the migration via the **Document migration** page in the target system. On this page, you can select the categories to be included for the migration. There are also other configuration options that you can activate at the push of a button.

1. **Categories**: Open the categories and select the categories that you want to migrate. Only categories that were marked as completed in the category mapping are displayed.
2. **Common settings**: Define the maximum number of processes to be used in parallel to upload the documents. Also specify the number of files per upload batch that will be migrated simultaneously in a batch per process.

> **Note**
> No general recommendation can be made regarding the choice of number of processes and batch size. A larger number of processes and a larger batch size usually result in a higher migration speed. However, other factors such as the utilization of local hardware or the available Internet bandwidth should also be considered when making your selection so that the customer's day-to-day business is not restricted by the migration.

3. **Validation options**: **Ignore hash values** or **Ignore missing D3 hash values** lets you ignore a missing filehash or D3Hash so that documents without these hash values can also be migrated.

> **Warning**
> When you activate the option, it cannot be guaranteed that a hash value check is performed. In any case, the specified file size is compared with the real file size.

4. **Transformation options**:
   The transformation options add and correct specifications, such as file size and name. This resolves migration errors.
   - **Add file size, if missing**: The file size is calculated and saved.
   - **Correct file size, if incorrect**: The file size is corrected and saved.
   - **Add file name, if missing**: If a file name property is missing, the file name of the metadata file is used.
   - **Correct version number**: Incorrect version numbers (file IDs) are corrected in the export before the migration.
   - **Correcting notes**: Blank spaces before and after notes are removed.
5. **Advanced settings**
   a. **Re-upload previously migrated documents**: Activate this option if you want to migrate all documents again, including successfully migrated documents (e.g. for delta migrations). By default, successfully migrated documents are not migrated again when the connector is restarted.
   b. **Applying structure rules**: Activate this option after migrating the structure rules. This adds links and creates new dossiers.

> **Note**
> The generation takes time and delays the completion of the project. Existing links are retained. If necessary, new files are created or linked so that existing and new links exist. Link or parent properties can also be empty. In this case, the configured structure rule cannot be executed. If dossiers are migrated from the source system and the dossier links are recreated, duplicate dossiers will appear in the target system. In this case, dossiers should not be migrated.

   c. **Create new full text and rendition**: If you activate this option, the creation of a PDF and a full-text index is started after a document is migrated.

> **Note**
> The generation takes time and delays the completion of the project. This results in considerable additional costs. If the full-text index is available in the source system, this index should be adopted and generation deactivated.

6. **Debug settings**
   a. **Test run without uploading**: This option deactivates uploading to the target system so that no migration is performed; only the validation of the exported documents.

b. **Create transformed metadata file**: Activate this option to analyse errors. A new file is created in the export directory for each document, in which the transformed metadata is saved as it is sent to the migration API.
c. **Debug Log**: Activates the debug log for the connector to perform advanced logging. This log lets you track errors more effectively.

Starting the migration

1. Go to the directory of the file **CloudmigrationConnector.exe** and execute the file.
2. Start the migration from the user interface. To do so, the connector must already be configured and started.

If the connector has been started, the console displays the message "Waiting for jobs..." at regular intervals. The d.velop cloud migration app in the target system is notified about the start. The following status should then be displayed on the user interface: **Connector ready**

You can stop the connector in the Windows command prompt using **CTRL+C**.

Monitoring the migration

You can also monitor the document migration on the **Document migration** page without accessing the on-premises system. The page displays the progress of the migration as a percentage and shows a table list for the migration job, grouped according to categories.

Completing the migration and reporting

Once the migration is complete, the report is available for download in d.velop cloud migration under **Migration Report**. The report only covers the current run.

In addition, the following files are included in a ZIP file to provide further information about the migration:

- List of documents with migration errors: **migration_error_documents.csv**
- List of successfully migrated documents: **migration_successfull_documents.csv**
- List of documents imported and ignored according to the migration configuration: **migration_ignore_documents.csv**
- Subfolder for each migration run performed. The name is incremented starting from 1. For each migration run, the following files that document the configuration selected for the migration run are created.
  - Configuration settings for the migration: **settings.csv**
  - Category and property mapping used: **category_mapping.csv**
  - User and group mapping used: **user_mapping.csv**

The document status is shown in the lists **migration_error_documents.csv**, **migration_successfull_documents.csv** and **migration_ignore_documents.csv**. The following statuses are possible:

- 0: Unknown
- 1: Transformed but not uploaded (e.g. for documents that were not uploaded but have been prepared for uploading)
- 2: Uploaded
- 3: Upload error
- 4: Error during transformation (e.g. when assigning the category)
- 5: Validation error before uploading (e.g. for metadata that does not match the binary file)
- 6: Error importing the file (e.g. for metadata files that do not correspond to the expected format)
- 7: Ignored (e.g. for unassigned categories)
- 8: Document has been uploaded and the correctness check, including metadata check, has been successfully completed

- 9: Correctness check failed (e.g. for uploaded documents for which there are differences in the metadata between the uploaded data and the data in the cloud)
- 10: Document has already been uploaded in a previous run

> **Note**
> Reports and other supporting documents relating to the migration serve to ensure the traceability of the migration carried out and must be kept by the customer as part of the procedural documentation.
>
> Download the migration run report and the attachments provided. Keep the files to ensure the traceability of the migration. If the migration is carried out for a customer, the files must be deployed to the customer so that the customer can verify that the migration has been carried out correctly.

Migration report

After completing one or more migrations, you can generate a complete report using the migration report interface. This function performs a comprehensive inventory check as follows:

- Existence check: Checks the availability of all uploaded documents in d.velop documents based on the document ID.
- Complete documentation: Creates a comprehensive overview of the status of all migrated data from all migration runs.
- Missing documents: Identifies documents that can no longer be found (e.g., due to deletion or automatic archiving).

> **Note**
> Only those documents that were previously made available by importing the export directories are listed. A comparison is made based on the migration database. No comparison is made between the source system and the target system.

The following files are provided:

- PDF report: Migration report on all migration runs as a protected PDF file
- ZIP archive containing the following CSV files:
  - All standard document lists (successfully migrated, faulty, and ignored documents)
  - **migration_missing_documents.csv**: List of documents that were originally migrated successfully but can no longer be found in the target system.

> **Note**
> Reports and other supporting documents relating to the migration serve to ensure the traceability of the migration carried out and must be kept by the customer as part of the procedural documentation.
>
> Download the migration run report and the attachments provided. Keep the files to ensure the traceability of the migration. If the migration is carried out for a customer, the files must be deployed to the customer so that the customer can verify that the migration has been carried out correctly.

Additional links and information

- Purchasing the cloud migration toolkit
- d.velop documents repository export-API

- How do I prepare for the document migration?
- How do I export documents and dossiers from an on-premises system using the export API?

1.4.11. Which IP addresses do I need to enable to be able to use the migration API?

Overview

In certain cases, you need the IP address that is used by the migration API in the d.velop cloud, e.g. to allow IP addresses through firewalls.

However, IP addresses can change. The IP addresses must be retrieved in the respective migration project. This section will show you how to ensure that the IP addresses can still be accessed.

Prerequisites

There are no special prerequisites.

Necessary components

There are no special components required.

This is how it works

You must enable two areas for the migration API:

- Access to the migration API
- Access to AWS S3 (for uploading files)

Granting access to the migration API and the cloud tenant

- Determine the current IP address of the d.velop cloud using the following page: Determining the current IP address
- Allow the determined IP address through the firewall so that the migration API can be reached. Port **443** is set for the migration API.
- We recommend that you also allow the cloud tenant's base address.

Granting access to AWS S3

- The IP addresses of AWS S3 can change. Determine the current IP address using the following page: Determining the current AWS S3 IP address
- Filter the list by region and services that are required to use the migration API:
  - Region: **eu-central-1**
  - Service: **S3**
- Use the application for filtering JSON files to filter the JSON files by service and region. Use the following filter: **.prefixes[] | select(.region=="eu-central-1") | select(.service=="S3") | .ip_prefix**

You can then provide the IP addresses for the cloud tenant and AWS S3 to customers so that they can allow the IP addresses through the firewall.

Additional links and information

- IP addresses for d.velop cloud
- IP addresses for AWS
- Application for filtering JSON files
- AWS guide for filtering IP address

1.4.12. How do I revoke write permissions in an on-premises system to perform a migration without information differences (delta)?

Overview

This section will show you how to revoke users' permissions to change documents and dossiers in a customer system. This will help you avoid information differences in the migration (delta). Such differences can arise if users make changes to documents during the migration, for example. These documents may then be imported into the cloud system without the latest changes. If you revoke users' permissions to change documents and dossiers, you will avoid such differences.

> **Note**
> Test this configuration in advance in a test system and confirm it with the customer. Revoking the above-mentioned permissions severely restricts the use of the system.

Prerequisites

- You require access to d.3 admin.
- You require d.3 administrator permissions.

Necessary components

Component	Version
d.3 admin	None

This is how it works

You can revoke the write permissions for all categories in the source system by creating a new document class in a permission profile. You have to create a document class independent of document type and a permission profile. Then assign the document class and the permission profile to the users.

1. Create a new document class independent of document type. Under **Creation date**, enter **-12/31/2023**, for example, so that the document class only applies to documents with a creation date up to December 31, 2023. Please note the date format for systems with language settings other than English.
2. Create a new permission profile with the following settings:
   - Add all document classes with the suffix **(K)** at the end. Specify for the document classes that all permissions will be ignored.
   - Add the previously created document class that is independent of document type. Explicitly deny the permission to change documents and dossiers (writing, status transfer, links) for the document class.
3. Test the permissions. To do this, you can assign the new permission profile to a user. If the permissions have been revoked correctly, you can continue.
4. Assign the permission profile to all users to revoke all users' permission to change documents and dossiers.
   - If AD is connected, assign the permission profile via IDP support or LDAP support.
   - Otherwise, you can assign the permission profile to all users by assigning all users to a group.

1.4.13. How do I perform the host import in the cloud with d.velop cloud uploader?

Overview

This section will show you how to use and configure d.velop cloud uploader as a replacement for d.3 hostimp.

Prerequisites

- A local Windows server (on the customer's premises) to run the application.
- An Internet connection (port **443**) to the cloud tenant in order to upload documents to the cloud.
- The API key of a user who is authorized to import the documents.
- The system requirements of d.velop cloud uploader must be met.

Necessary components

Component	Version
d.velop cloud uploader	Latest version

This is how it works

d.velop cloud uploader serves as a counterpart to d.3 hostimp for the d.velop cloud. It enables you to monitor directories from which delivered file pairs (original file and metadata file, e.g. JPL or UPD) are imported into the d.velop documents tenant via the DMS API. Further information can be found in the administration manual of d.velop cloud uploader.

Installing d.velop cloud uploader

Please note the following when installing d.velop cloud uploader:

- The application must be operated on an on-premises server of the customer.
- The application requires access to the directories to be monitored (local, network drive, etc.).
- Further information can be found in the documentation of d.velop cloud uploader.

Configuring d.velop cloud uploader

You can configure d.velop cloud uploader using the **appsettings.json** file. You will find the file in the installation directory. In the file, adjust the general configuration (base address, repository ID, API key, etc.).

> **Note**
> Particularly in test phases or if errors are occurring frequently, it may make sense to increase the interval at which the application attempts to upload errors again. In these cases, adjust the parameter **ResetFailedUploadsInterval**. Otherwise, the application will be repeatedly held up by the same errors and new documents will be delayed or not imported at all.

1. Configure the **SourceCategoryMappings** parameter in the file. Use this parameter to define the categories or document types to be included. The following example will explain the structure. Values such as **ADK** are used for identification. This is followed by the ID of the category in the tenant.

```
"GlobalMappings": {
    "SourceCategoryMappings": {
        "AAUF": "98689511-658d-4831-92b6-4683f46a1c30",
        "Auftragsakte": "98689511-658d-4831-92b6-4683f46a1c30",
        "ADK": "323797f3-3cc7-410e-8950-68df7805b5ff",
        "ADK-Daten": "323797f3-3cc7-410e-8950-68df7805b5ff"
    }
}
```

2. Define the directories that are to be monitored.
   - **Example 1**: To specify that TIF, PDF and EML files are to be processed with JPL metadata files:

```
"MonitoredDirectories": [
   {
```

```
        "FolderPath": "D:\\d3work\\import\\D3T",
        "RetryFailedUploads": true,
        "FileExtensions": [".tif", ".pdf", ".eml"],
        "MetadataFileExtension": "jpl",
        "SourceCategoryProperties": ["dokuart"]
    }
]
```

- **Example 2**: To define the processing of UPD files:

```
 "MonitoredDirectories": [
    {
        "FolderPath": "\\\\d3t\\import\\UPD",
        "FileExtensions": [".upd"],
        "MetadataFileExtension": "upd",
        "SourceCategoryProperties": ["o_dokuart", "n_dokuart"]
    }
]
```

3. Configure the files for the mappings.
   - Save mappings for categories and properties in files with the extension **.mapping** in the following subdirectory: <installation directory>\GlobalMappings
   - We recommend creating a separate **.mapping** file for each category. In this category, the database fields, document type and system properties of the JPL or UPD file are mapped to the corresponding ID of the cloud system.
   - The following example shows how the mapping is structured for a public cloud environment:
   - ```
     {
        "98689511-658d-4831-92b6-4683f46a1c30": {    // <-- ID of the cloud category
           "PropertyMappings": {

        //System properties mappings
              "zeich_nr": "property_document_number",
              "o_zeich_nr": "property_document_number",
              "var_nr": "property_variant_number",
              "o_var_nr": "property_variant_number",
              "text[1]": "property_remark1",
              "text[2]": "property_remark2",
              "text[3]": "property_remark3",
              "text[4]": "property_remark4",

        //Properties mapping (on-premises to cloud ID)
              "dok_dat_feld[7]": "dee97adc-ddff-453a-8e68-719aa1e6010c",
              "n_dok_dat_feld_7": "dee97adc-ddff-453a-8e68-719aa1e6010c",
              "dok_dat_feld[8]": "8e87e464-85d9-489f-b3df-728046c24a77",
              "n_dok_dat_feld_8": "8e87e464-85d9-489f-b3df-728046c24a77",
              "dok_dat_feld[35]": "159a136b-a0ba-464c-a465-e38cd2300467",
              "n_dok_dat_feld_35": "159a136b-a0ba-464c-a465-e38cd2300467",
              "dok_dat_feld[44]": "87e580d8-eef2-4252-82cb-ebe7665f1cbb",
              "n_dok_dat_feld_44": "87e580d8-eef2-4252-82cb-ebe7665f1cbb"
           }
        }
     }
     ```

Additional links and information

- Download page for the application
     ```

- **Working with a "default.ini" file**: If a **default.ini** file exists in the on-premises system, you can configure constants in the **appsettings.json** file of d.velop cloud uploader, for example to set a default value (**PropertyConstants**).
- **Receiving and transmitting confirmation files to SAP after successful import**: You can find a description of the **DATEI_IMPORT_QUITTUNG** parameter in the documentation. You can enter the corresponding output file path in the JPL file. After the successful import, a confirmation file with the new document ID in the file is transferred to the relevant directory.

1.4.14. How do I carry out a completeness check after a document migration?

Overview

This section will show you how to carry out a completeness check after finishing a document migration. The focus here is on comparing the document IDs and the total number of documents in the cloud system with the documents from the source system. You should not compare all the properties of a document or dossier. Perform the comparison using random sampling during the test migration or when defining the mapping.

Completeness check in a multi-stage process

- Several components are involved in the migration process, each of which involves its own steps. For each step, the process is monitored by the tools used. The export API must be able to recognize whether errors have occurred and, if so, which ones.
- During a migration with the migration API, the migration tools log the following information:
  - Which documents and dossiers were imported from the source system?
  - Which documents were uploaded to the cloud system via the migration API?
- When a migration upload is finished, the migration API returns a success or error message for each document provided. If errors are returned by the API, you must correct the errors and re-upload the documents in question. The status messages must be evaluated by the migration tool for each document and each dossier. You can use the status messages for the completeness check in the migration process. You must also use the migration tool to provide reporting so that the migration can be tracked.
- It is not possible to access the d.velop documents database in the cloud system and check the database after a migration.
- It is important to carry out a completeness check across components in order to validate the entire process, including its interfaces.

Prerequisites

- The migration is being or has been carried out using the migration API (with d.velop cloud migration, for example) and the original document IDs are retained.
- The export API is enabled and authorized in the cloud.

This is how it works

1. Determine the queries in the source system for the document IDs that are to be exported. Save the document IDs in CSV files.
   - SQL query with filter for a category:

     ```
     SELECT p.doku_id
     FROM phys_datei AS p
     WHERE p.dokuart = 'DRECH';
     ```

   - Add a filter for the parameter **OVERALL_PROC_DATE** (modification date of a document):

     ```
      SELECT p.doku_id
     FROM phys_datei AS p
     ```

```
WHERE p.dokuart = 'DRECH'
AND OVERALL_PROC_DATE > '2018-12-31 23:59:59';
```

2. Determine the document IDs from the target system.
   - Use the reports from d.velop cloud migration to determine the document IDs.
   - After you have created a migration report, in addition to the report, you also receive document lists as CSV files for download. These can be used to identify the documents found in the cloud system.
3. Compare the source and destination (e.g. in a database table).
4. Identify the differences, evaluate the causes and eliminate the gaps in the migration process.

Additional links and information

- Enabling the export API in the cloud: Enabling the API for the cloud

1.5. Frequently asked questions

You can find answers to frequently asked questions in this section.

1.5.1. How long will the document migration take?

We cannot specify a general duration for document migrations. The duration is influenced by many different factors. These include:

- The number of documents and dossiers to be migrated.
- The data volume and the file size of the individual files.
- The speed of the source system's storage system.
- The capacity utilization of the source system (CPU, RAM, hard disk speed).
- The resources (CPU, RAM, hard disk speed) that can be made available to the export and migration tool.
- The Internet speed.
- The speed and capacity utilization of the source system database.
- The capacity utilization of the cloud system.

In previous migration projects, it was usually possible to migrate at least 1 million documents in 24 hours. In our experience, performance has always been limited by the source system and not the cloud system.

Carry out a test migration with the corresponding performance measurement systems to extrapolate the migration duration.

1.5.2. Can I also migrate a legacy system (earlier than version 8.x)?

No, you cannot migrate legacy systems directly. Older versions prior to version 8.x must be updated before migration.

1.5.3. How many project hours are required for a migration?

The project hours required for a migration varies with the complexity of the source system and the number of documents and categories to be migrated. Create a cost estimate for a rough estimate of the project hours.

The standard service packages for cloud migration also provide you with an overview.

1.5.4. Can I also migrate systems from third-party providers?

You can also migrate from a third-party system to the d.velop cloud. Please use the migration tool of d.velop AG for this purpose. More information can be obtained regarding migration from a third-party system.

For the export from the source system into the required format, d.velop AG relies on partnerships with various migration partners who have experience with migrating common third-party systems or

who undertake service projects for special third-party systems. More information about the format are available atstructure of the export directory.

1.5.5. How do I migrate the repository configuration?

You can migrate the repository configuration of a d.velop documents on-premises system to the cloud using the cloud migration toolkit. A guide can be found in our Knowledge Base: Repository migration guide

1.5.6. How can I make it easier for users to switch over from d.3 smart explorer to d.velop documents?

Migration to the cloud usually also means switching to the d.velop documents Web client. With d.velop documents, new interfaces, new operating concepts and new functions are available. The following e-learning course on introducing and getting started with d.velop documents can make the changeover easier for users: E-learning: Mastering the changeover to the Web client

1.5.7. How do I map hooks in the cloud system?

Hooks can be replaced in the cloud using webhooks or various alternative apps such as d.velop custom logics or d.velop scripting in d.velop process studio.

For more information, see: How do I handle hooks in a cloud migration?

1.5.8. How do I handle external scripts?

You can find a guide here: How do I handle scripts in a cloud migration?

1.5.9. How do I map the host import process in the cloud?

Existing host import processes of a source system can be carried out in the cloud with the help of d.velop cloud uploader.

A guide can be found here: How do I perform the host import in the cloud with d.velop cloud uploader?

1.5.10. What should I keep in mind when migrating e-mails whose attachments have been replaced by links?

The e-mail attachments are replaced by links that could become invalid after a migration. After a migration to a cloud system, the document ID usually remains the same, but the base address and the repository ID of the system change. The addresses or IDs are part of the link to the attachment.

Adjust the link of each e-mail so that the link leads to the correct attachment in d.velop documents. Alternatively, you can correct the link when calling it up (e.g. via nginx) so that the correct document is found.

1.5.11. How do I make sure that all documents have been migrated?

You can carry out the completeness check using the migration tool. Check the status codes of the migration interface after each upload and log and rectify errors. For more information, see: How do I carry out a completeness check after a document migration?

1.5.12. Can I migrate only parts of my system to the cloud?

Yes, that is no problem. You can use a filter to select which documents are to be migrated. For system components you can use a hybrid setting, for example, to ensure that certain apps are purchased from the cloud.

1.5.13. Which documents are migrated?

Only migrate documents that have not yet exceeded the retention period defined for their respective category. A retention period is defined for each category. Documents that have exceeded their category's time limit can not be migrated. You can also define additional filters to reduce the number of documents to be migrated.

Examples:

- “Only the document types x, y and z”
- “Only documents from the year 20xx and later.”

1.5.14. Can I work in the target system during the migration?

During the migration, you can access the target system in read-only mode. However, you do not have write access. Changes to the target system could be overwritten during delta migrations.

1.5.15. How do you ensure that documents remain unchanged when migrated?

When documents are exported from the source system, existing hash values are also exported. When the documents are imported, the files are hashed to ensure that the files have not been changed during the process. In addition, after the documents are uploaded, the metadata, including the hash values, are downloaded again and compared with the uploaded metadata. This eliminates the possibility of interface errors. If the hash values are missing in the source system, for example in the case of old documents, generate the hash values before a migration.

1.5.16. Can the on-premises system continue to be used during the migration, or should I expect downtime?

You can continue to use the on-premises system as before during the migration. Based on the export, you can recognize updated and newly imported documents and include them in a delta migration to complete the migration.

1.6. Additional information sources and imprint

If you want to deepen your knowledge of d.velop software, visit the d.velop academy digital learning platform at https://dvelopacademy.keelearning.de/.

Our E-learning modules let you develop a more in-depth knowledge and specialist expertise at your own speed. A huge number of E-learning modules are free for you to access without registering beforehand.

Visit our Knowledge Base on the d.velop service portal. In the Knowledge Base, you can find all our latest solutions, answers to frequently asked questions and how-to topics for specific tasks. You can find the Knowledge Base at the following address: https://kb.d-velop.de/

Find the central imprint at https://www.d-velop.com/imprint.