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HRMTS Proxy Web Service

Export data from cloud to local ERP-Systems.

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HR MANAGER TALENT SOLUTIONS

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HRMTS Proxy Web Service

Terminology

HRMTS – HR Manager Talent Solutions.

HR-System – Solutions offered by HRMTS, such as "Talent Recruiter".

Proxy WS – HRMTS Proxy Web Service.

Customer – Company or organization subscribing the HR-System.

ERP-System – Third-party Enterprise Resource Planning system such as SAP, Public 360, ESA etc.

Introduction

There is often a need to export various documents (or other data) from the HR-System operating in the cloud to ERP-Systems on Customer's premises. These ERP-Systems are usually installed locally on Customer's Intranet, and are not accessible from the Internet due to security reasons. As a result of this fact, there is no way for the HR-System to, automatically or manually, export any data from the cloud to these ERP-Systems.
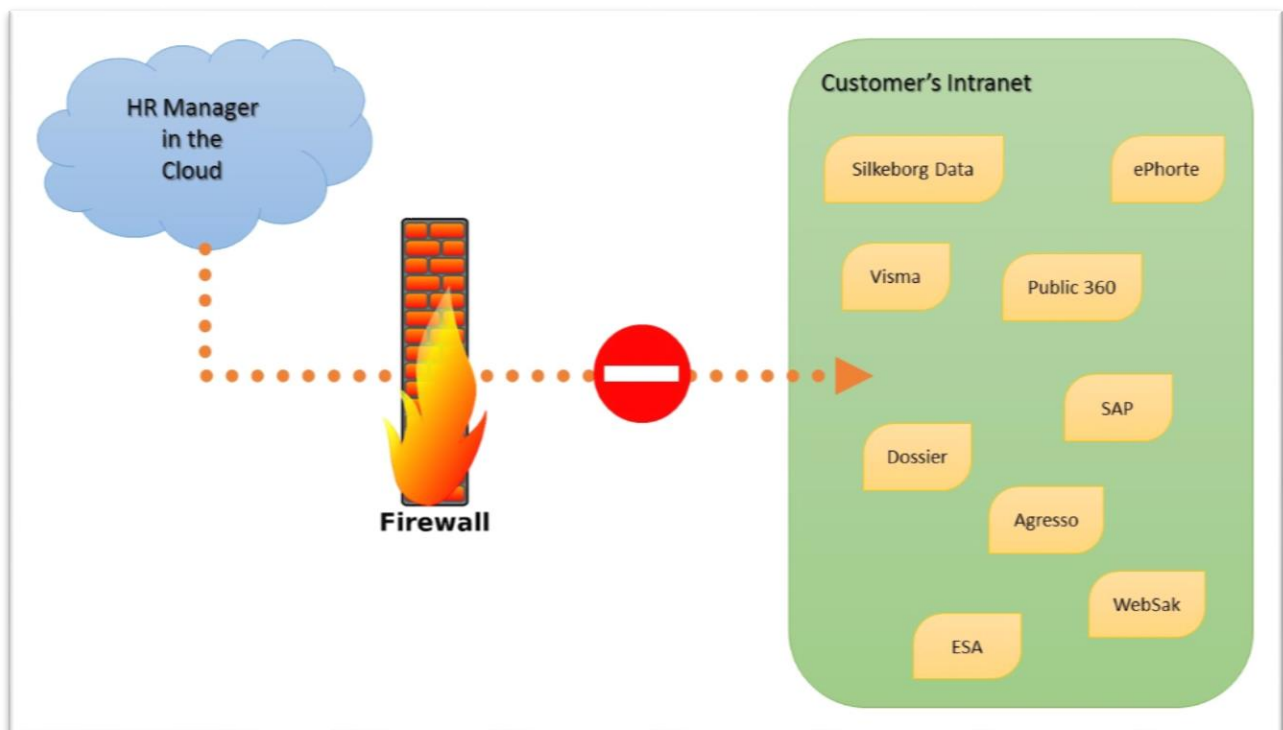
There are various web services available in the HR-System that the Customer can call to fetch (import) different data. The Customer can choose to consume these web services to read the data, transform it, and then forward it to local ERP-Systems. Implementation of such a consumer and transformation middleware requires technical and programming resources that are not always, or readily, available for most Customers. This also leaves the Customer with responsibility of maintenance of the consumer and transformation middleware toward an ever-evolving HR-System.

HRMTS offers a solution to this challenge that makes it possible to export data from the HR-System in the cloud to Customer's on premise ERP-Systems in a secure and automated manner, without the need for the Customers to implement or maintain any consumer or middleware.

The Proxy Web Service

HRMTS has created a Proxy WS, which is a small and light-weight web service that can be installed on Customer's DMZ (Demilitarized Zone – part of Customer's network that is exposed toward the Internet). Proxy WS is designed to receive data from the HR-System in the cloud in a secure manner, transform it to the correct format, and pass securely it over to the ERP-System. Using Proxy WS, the data now flows from the HR-System in the cloud, through the DMZ and over to the ERP-System in a secure fashion, where the Customer is in full control of both input and output channels of the Proxy WS.
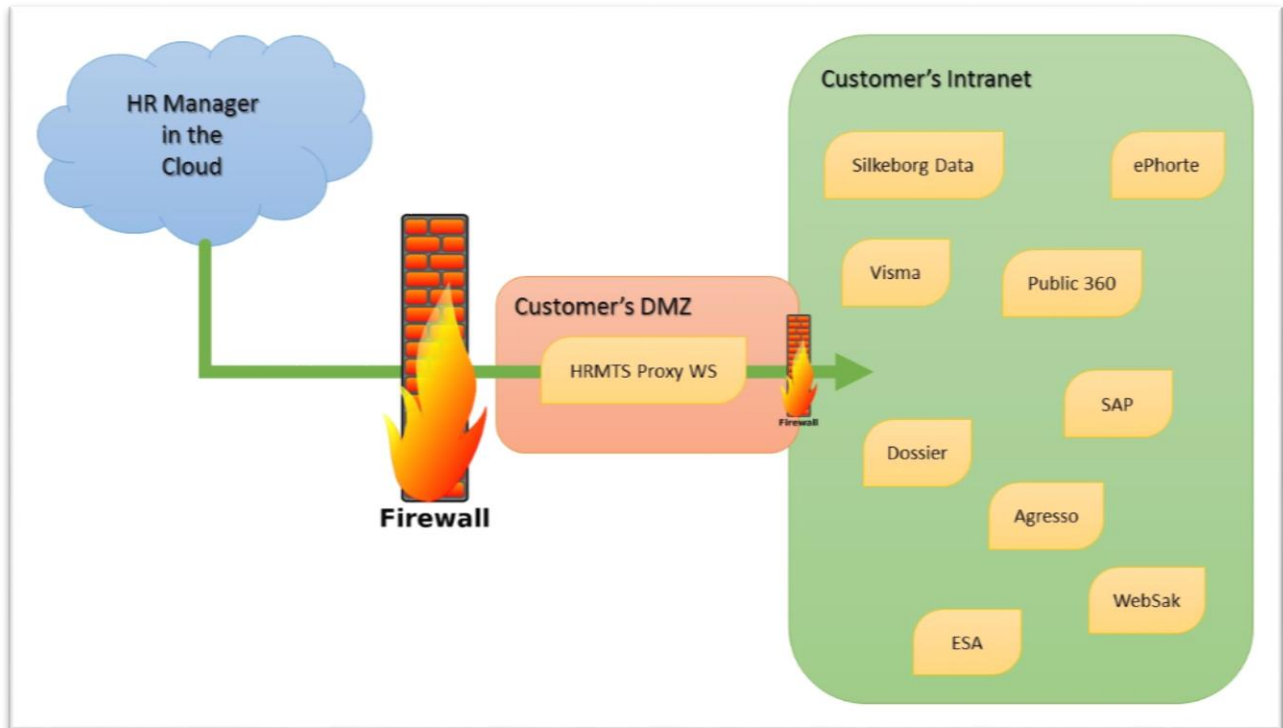
The Proxy WS is consume only. It means it never does anything on its own, unless it receives a data package from the HR-System in the cloud. The data from the HR-System is exported to Proxy WS with following security measures:

- All traffic goes over one pre-defined IP address.
- All traffic goes over SSL.
- In addition to secure HTTPS tunnel, the message itself is also secured.

To allow this traffic from the HR-System in the cloud to DMZ, the Customer needs to open traffic on the specified port from the pre-defined IP address. When desired, the Customer can close the point of entry in the DMZ to disable the Proxy WS.
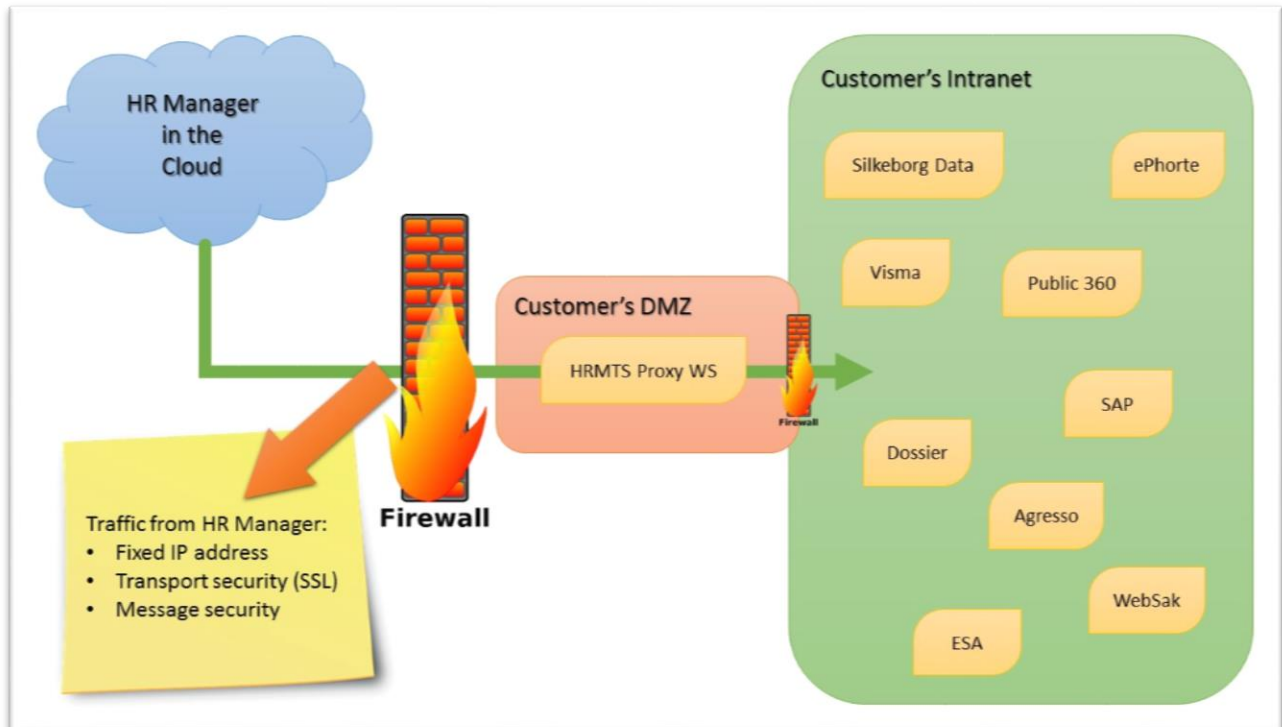
The Proxy WS runs on a light-weight virtual machine in the DMZ. As part of the entry point to Proxy WS, the virtual machine is configured with following:

- SSL certificate.
- A secret URL that the HR-System in the cloud can call to reach the Proxy WS.

The secret URL is basically a unique and hard-to-guess URL created in the DNS of the Customer, and looks something like this:

https://67f607a0-d130-4644-97d2-3f1270f0211d.customer.com/

Next, the Customer configures the desired access for the Proxy WS inside the DMZ so that it can pass data over to the ERP-System.
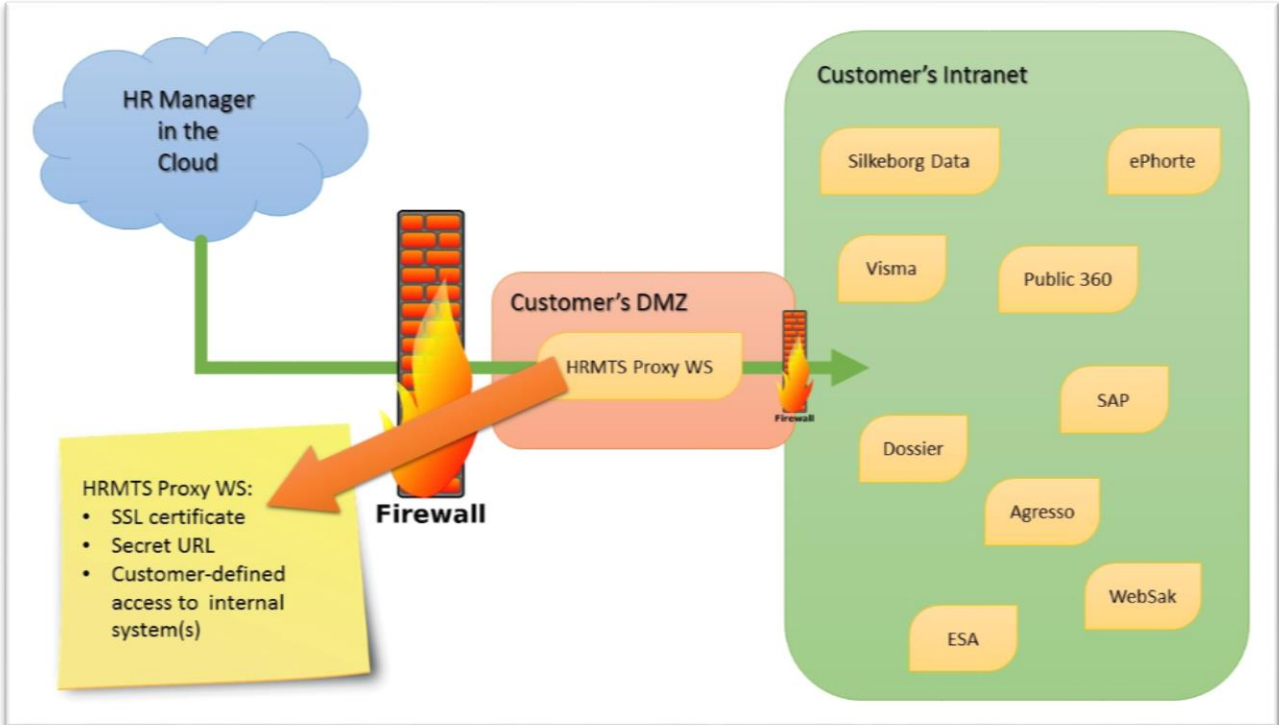
Data Export

The HR-System in the cloud exports data to the Proxy WS using two functions:

1. Archive Documents
2. Export Hired Candidate

Archive Documents

This function is used to export various documents from the HR-System to the ERP-System for archiving. The types of documents that can be archived using this function are as follows:

1. Project Creation
2. Project Protocol
3. Project Advertisement
4. Internal Note
5. Candidate Application
6. Candidate Note To
7. Candidate Note From
8. Candidate Public List (Norwegian «offentlige søkerliste»)
9. Candidate Extended List (Norwegian «utvidet søkerliste»)
10. Candidate Rejection List
11. Candidate Employment Contract

In addition to the documents, the HR-System also sends following meta data to the Proxy WS:

- Department meta data (where the position is created in the HR-System)
  - HR-System id
  - AD id (if added to the HR-System)
  - Name
  - Address
- Position meta data
  - HR-System id
  - Title
  - Short description
  - Start date
  - Application due date
- Recruitment leader meta data
  - HR-System id
  - AD id (if added to the HR-System)
  - Name
  - Email
- Candidate meta data (when document related to a candidate is exported)
  - HR-System id
  - Name

o　Email
　　　　o　Date of birth
　　　　o　Address
　　　　o　Phone

Archiving User

When archiving documents to (most) ERP-Systems, it is required to define on whose behalf the archiving is taking place. This is called the archiving user. There are two options available in the Proxy WS to set the archiving user.

1. Fixed user – Documents are archived on behalf of a fixed user.
2. Recruitment leader – Documents are archived on behalf of the recruitment leader in the HR-System.

Export Hired Candidate

This function is used to send details of hired candidates (new employee) from the HR-System to the ERP-System for personnel registration.

The HR-System sends following meta data to the Proxy WS when exporting a hired candidate:

- Candidate meta data (when document related to a candidate is exported)
　　　　o　HR-System id
　　　　o　Name
　　　　o　Email
　　　　o　Date of birth
　　　　o　Address
　　　　o　Phone
　　　　o　Documents / employment contract
　　　　o　Custom properties

Requirements

The Customer must provide the following in order for HRMTS to install and configure the Proxy WS on Customer's DMZ:

1. Windows Server 2012 R2 on DMZ.
   a. The server must have at least 8 GB RAM and 100 GB primary volume.
   b. The server can be virtual.
   c. The server can be shared.
2. Access to the server through VPN/RDP.
3. Administrator access on the local server (not domain).
4. Customer's SSL certificate. The Customer must install their SSL certificate on the server using MMC, on the Local Machine Store under "Web Hosting".
   a. During installation, <u>make sure that the certificate's private key is not marked as exportable</u>.
   b. Do not import the certificate using IIS, otherwise the certificate's private key will be marked as exportable.
5. Two URLs in the DNS based on a random GUID that point to the server. You may use http://www.guidgen.com/ or some other tool to generate a random GUID. Both URLs are the same, except one is prefixed with "dbg-" E.g.:
   a. https://67f607a0-d130-4644-97d2-3f1270f0211d.customer.com/ (Live)
   b. https://dbg-67f607a0-d130-4644-97d2-3f1270f0211d.customer.com/ (Test / Debug)
6. Allow inbound traffic on port **443** (SSL) from IP address **217.173.254.114**. This is the HR-System's default IP address for outbound communication.
7. Provisional access to the Internet from the server. HRMTS' technical staff will need it to download required tools and source code of Proxy WS.
8. Integration documentation for the ERP-System, as well as technical contact at the vendor of the ERP-System.
9. A domain user that the Proxy WS can use for look up users in the AD, impersonate when writing files to shared folders, authenticate to web service of the ERP-System and so forth. It will be coordinated with the Customer which exact permissions this domain user requires (depending on the ERP-System in use) so that the **Least Privilege** principle can be maintained.
   a. Make sure this user or its password do not expire, otherwise the integration will seize to function.

Installation, Configuration and Handover

HRMTS' technical staff will conduct following steps in order to install and configure the Proxy WS.

1. Preparation and Configuration and of the Server
2. Implementation and Configuration of the Proxy WS

Preparation and Configuration and of the Server

- Download and install latest version of Microsoft .NET framework.
- Download and install latest version of SQL Express with Management Tools (Free version)
- Download and install latest version of Visual Studio (HRMTS' license)
- Download and install latest version of Notepad++ (Free version)
    - Download and install XML tools plug-in for Notepad++ (Free version)
- Install Web Server role with required components.
- Create required folder structure on disk for Proxy WS.
- Download source code of the Proxy WS.
- Create following web sites in IIS (based in URLs provided by Customer)
    - https://67f…11d.customer.com/ (Live)
    - https://dbg-67f…11d.customer.com/ (Test / Debug)

Implementation and Configuration of the Proxy WS

The following are the phases of implementation and configuration of the Proxy WS.

Implementation

If Proxy WS does not already have support for a specified ERP-System, then it is implemented in this phase. This phase requires integration documentation of the ERP-System, and technical support from its vendor. Since the Customer is already using the ERP-System, they have a support agreement with the vendor through which both documentation and support can be received.

The Customer must make sure that they have license to use the integration module of the ERP system.

Configuration

In this phase, both Proxy WS and the ERP-System are configured for to work together. On one side, HRMTS' technical staff coordinates with the Customer to configure Proxy WS, while the technical staff of the ERP-System vendor coordinates with the Customer to configure the ERP-System for integration.

Acceptance Testing

Once both Proxy WS and the ERP-System are configured, the phase of acceptance testing starts. A test area is created in the HR-System from where data is exported to the Proxy WS. The Proxy WS transforms the data and delivers it to the ERP-System. The Customer monitors the data arrival in the ERP-System and gives feedback whether any adjustments are required.

Handover

Once the acceptance testing is complete, the Proxy WS is moved to production. HRMTS then removes all source code from the virtual server in DMZ along with any other temporary data. Any necessary information is handed over to the Customer. The Customer can now turn off the VPN/RDP access to the virtual server.

Additional Requirements for ERP-Systems

Each ERP-System has different requirements when it comes to passing data from the HR-System to it. The data must be transformed according the requirements of the ERP-System, and transferred through the interfaces available in the ERP-System.

WebSak from Acos

WebSak offers a web service interface through which recruitment documents can be archived.

Requirements

1. Domain user.
2. URL to WebSak web service.
3. Specific WebSak codes used by Customer.

Data Flow

HR-System		Proxy WS		ERP-System
Sends data to Proxy WS.	→			
		Transforms data to ERP-System format.		
		Calls ERP-System web service.	→	
				Archives documents in the ERP-System.
			←	Returns status to Proxy WS.
	←	Logs transaction and sends status to HR-System.		
Logs (and displays) status of the transaction.				

Use of Domain User

The domain user supplied by the Customer is used for following actions:

1. Authentication toward web service.
2. Lookup in AD for the specific attributes during archiving.

Special Notes

- WebSak requires two special codes for the archiving user – one for the user itself and one for user's department. It is based on these codes that the users in AD are connected to WebSak, and define the base of their permissions in WebSak. HRMTS has experienced that some Customers have these codes defines in AD under some custom attributes. During archiving, the Proxy WS looks up the archiving user in AD and reads these codes before sending data to WebSak. The

configuration of WebSak and where these codes are stored may vary from Customer to Customer. It will, therefore, be necessary to discuss these details with Customer's technical staff and agree to a solution, before configuration of Proxy WS.

Public 360 from Software Innovation

P360 offers a recruitment web service interface through which recruitment documents can be archived.

Requirements

1. Domain user.
2. URL to P360 web service.
3. Access to a shared folder.

Data Flow

HR-System		Proxy WS		ERP-System
Sends data to Proxy WS.	→			
		Transforms data to ERP-System format.		
		Writes document(s) to shared folder.		
		Calls ERP-System web service with path of the file(s).	→	
				Reads document(s) from the shared folder.
				Archives documents in the ERP-System.
			←	Returns status "True" or "False" to Proxy WS.
	←	Logs transaction and sends status to HR-System.		
Logs (and displays) status of the transaction.				

Use of Domain User

The domain user supplied by the Customer is used for following actions:

1. NTLM authentication toward web service.
2. Impersonation when writing files to the shared folder.
3. Lookup in AD for the user's AD-id if not already supplied in the HR-System.

Options

The Customer can choose from following main options for the configuration of Proxy WS:

1. Zip documents
   P360 web service creates one "Journal Post" per document. When archiving a candidate application, each attachment can result in a separate "Journal Post". Proxy WS offers an option

to zip all documents in an application to a single file before archiving so that the entire application is archived as a single "Journal Post".

Special Notes

- P360 web service only returns status "True" or "False" on its transactions. Therefore, it is not possible for Proxy WS to know (or report) what exactly went wrong. Therefore, the Customer's technical staff must look into logs from P360 to find out the exact reason.
- 99.9% of the time a transaction to P360 web service fails due to lack of proper permissions for the archiving user in P360. The Customer's technical staff must make sure to configure the respected users correctly in P360.
- P360 web service has a limited signature and can only accept following data from Proxy WS.
  - Id – Id of the case which is not the same id that is shown in the P360 UI.
  - Case description – Title of the case.
  - Case handler – AD id of the archiving user.
  - External contact – Name of the archiving user or candidate, depending on the document category.
  - Document category – Incoming or outgoing document.
  - Document title – Title of the document.
  - File path – Path of the document on the shared folder.
  - Reference number – HRMTS' document id.

ESA from Evry

ESA offers two web service interfaces through which recruitment documents can be archived:

1. ESAGEOInnsyn – used to view cases, journal posts and documents.
2. ESAGEOOppdatering – used to create and modify cases, journal posts and documents.

Requirements

1. Domain user.
2. URLs to ESA web service.
3. Username(s) and password(s) for web service authentication.
4. Specific ESA codes used by Customer.

Data Flow

HR-System		Proxy WS		ERP-System
Sends data to Proxy WS.	→			
		Transforms data to ERP-System format.		
		Calls ERP-System web service.	→	
				Archives documents in the ERP-System.
			←	Returns status to Proxy WS.
	←	Logs transaction and sends status to HR-System.		
Logs (and displays) status of the transaction.				

Use of Domain User

The domain user supplied by the Customer is used for following actions:

1. Lookup in AD for the user's AD-id if not already supplied in the HR-System.

ePhorte from Evry

ePhorte offers a file based interface through which recruitment documents can be archived.

Requirements

1. Domain user.
2. Access to a shared folder.
3. Specific ePhorte codes used by Customer.

Data Flow

HR-System		Proxy WS		ERP-System
Sends data to Proxy WS.	→			
		Transforms data to ERP-System format.		
		Calls ERP-System web service.	→	
				Archives documents in the ERP-System.
				No status is returned to Proxy WS.
	←	Logs transaction and sends status to HR-System.		
Logs (and displays) status of the transaction.				

Use of Domain User

The domain user supplied by the Customer is used for following actions:

1. Impersonation when writing files to the shared folder.
2. Lookup in AD for the user's AD-id if not already supplied in the HR-System.

Visma HR by Visma

Visma offers a file based interface through which new employees can be imported.

Requirements

1. Domain user.
2. Access to a shared folder.
3. Specific Visma codes used by Customer.

Data Flow

HR-System		Proxy WS		ERP-System
Sends data to Proxy WS.	→			
		Transforms data to ERP-System format.		
		Calls ERP-System web service.	→	
				Imports new employee to the ERP-System.
				No status is returned to Proxy WS.
	←	Logs transaction and sends status to HR-System.		
Logs (and displays) status of the transaction.				

Use of Domain User

The domain user supplied by the Customer is used for following actions:

1. Impersonation when writing files to the shared folder.
2. Lookup in AD for the user's AD-id if not already supplied in the HR-System.