Sage HRMS

Sage Employee Self Service
Advanced Customization Guide

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Overview

This section provides an overview of the Sage Employee Self Service (ESS) advanced customization interfaces, which includes authentication integration and data access.

Requirements

All interfaces available for advanced customization are currently installed by default on Sage Employee Self Service (ESS) servers. You will need a working server environment to use the documented interfaces. Refer to the *Sage Employee Self Service Installation and Setup Guide* for detailed system requirements.

Customization Interfaces

Employee Self Service contains various customization options that allow for changes to the look, feel, and functionality of the product through screens available from within the product or manipulation of files through third-party tools. Changes to items such as logos, graphics, menus, documents, colors, fonts, security, and workflow settings that do not require any programming are considered "simple" customization options. These are not covered in the current document.

To allow business partners and customers to extend the functionality of Sage Employee Self Service, we currently provide interfaces for "advanced" customization.

- The ESS single sign-on interface (SSOI) allows the integration of other existing or custom applications into the ESS application framework eliminating the need for self-service users to sign on to connected applications once they have been authenticated through ESS.

  A custom application can use SSOI methods to retrieve information about the Sage HRMS employee currently logged into ESS as well as information necessary to access the Sage HRMS and ESS databases currently used by ESS.

- With the information retrieved from SSOI, a third-party application can then use the .NET Data Access API to allow other applications to connect to Sage HRMS data from ESS servers. It supports ADO and ADO.NET read and write access to encrypted and unencrypted databases.

  A standard Microsoft SQL OLEDB provider can be used to access data stored in the ESS database as this database is either a Microsoft SQL Server 2005/2008 or SQL Server 2005/2008 Express Edition (SQL Express) database, depending on the options chosen during the ESS product installation.

- View Builder has been extended to include custom data created through Custom Details in Sage HRMS. A Data Sync Web Service enables external data source and third party applications to be integrated with Custom Details data in Sage HRMS via an XML file and a Custom Data Provider Interface can integrate directly into the View Builder, real-time, to retrieve and expose data available for views.

ESS Single-Sign-On Interface (SSOI)

Introduction

The ESS Single-Sign-On Interface (SSOI) is a web service that allows access to ESS information for other web applications that were invoked using custom URL references configured through the customization pages on the ESS administrator setup.

Requirements

The SSOI provides a way for other applications to retrieve Sage HRMS and Sage Employee Self Service data as well as some information associated with the user session. The SSOI is an integral part of Sage Employee Self Service.

Features

The SSOI provides the following information to a third-party application:

- **Employee logon**

  The user name (or "logon") that was used by the employee to access ESS. This information may be used to integrate authentication in ESS with authentication in a third-party application.

- **Suite Employee Key information**

  A third-party application can retrieve additional data related to the employee from both Sage HRMS and the SQL or SQL Express database used by ADS by using the "key information" (employee id and the company code) supplied by the SSOI. The key is derived from the information for the user that was logged on to ESS when the SSOI data was collected.

- **Connection strings**

  The SSOI provides methods to retrieve the connection strings used by ESS to connect to both Sage HRMS and the SQL or SQL Express database used by ADS. Credentials (user name and password) needed to access the database will not be returned for security reasons and will need to be supplied by the third-party application.

Using ESS SSOI

In order to use SSOI in your application, you need the ability to consume a Web service. The SSOI requires multiple steps or calls when leaving an ESS application and navigating to a third-party application to prevent abuse and avoid vulnerabilities in the hand-over process. Refer to the Pre-Installation section of the *ESS Installation and Setup Guide* for Information Security Recommendations for Public Access Workstations.

A diagram illustrating the flow of a typical SSOI hand-over sequence can be found below:
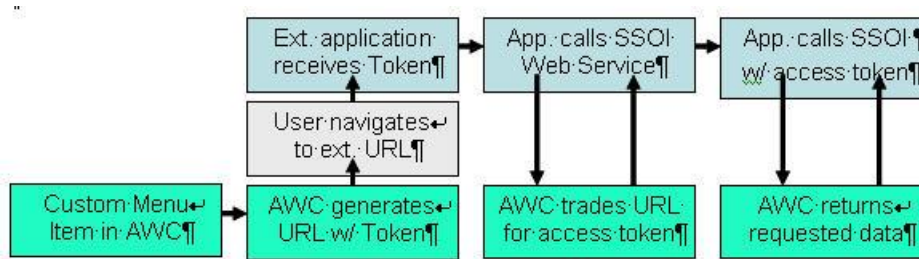
Please note that the top row in the diagram contains actions initiated by the third-party application, the center row contains user actions, and the bottom row shows ESS functions.

To use the single-sign-on feature, you first have to log on to ESS as the master user and set up external URLs with the single-sign-on feature enabled. These URLs can then be used to create custom ESS menu entries. When ESS generates the URLs that are used for the menu entries and it encounters an external URL where the SSOI feature is enabled, it appends a string in the form "URLToken=<*GUID*>" to the external URL. At this time information related to the current user will be stored by ESS in a cache.

When a user attempts to navigate to this URL, an HTTP(s) request to the third-party application follows. The third-party application can then retrieve the URL token and call the SSOI Web service to exchange this URL token for an "access token." Immediately after this step is completed, the URL token itself is no longer valid.

This is done to prevent, for example, another user or hacker who may be able to see or intercept the URL that is passed through the client from "re-using" the token. All subsequent calls only involve communications between the third-party application and ESS, but not the client. This also means that the aforementioned communication needs to take place over a "secure channel," either over a physically secured Intranet or using HTTPs so that the data transmitted cannot be easily intercepted.

Once the third-party application has the access token, it needs to be supplied on all subsequent calls that retrieve any ESS information through the SSOI.

Code Reference

The Web Service currently supports the methods listed below. The signatures are shown in C# syntax to improve readability. You may also request the following URL to browse the most current web service description:

http://<ESSServer>/selfservice/SSOI/AbraWorkForceConnSSI.asmx

[WebMethod]

```
public bool IsValidToken(string sURLToken)
```

This call allows you to verify whether the string argument passed into the call represents a currently valid URL token.

[WebMethod]

```
public string ProcessURLToken(string sURLToken)
```

You must call this method immediately after receiving the URLToken. This call will "exchange" the URL token that was passed though the client machine and return an access token that needs to be used for subsequent calls. This call immediately invalidates the URLToken to prevent abuse (for example, attempts to request the same URL again from another client).

[WebMethod]

```
public string GetEmpID(string sAccessToken)
```

This method returns the employee ID of the user who is or was logged on to ESS. The value returned corresponds to the employee ID field in Sage HRMS.

[WebMethod]

```
public string GetCompany(string sAccessToken)
```

This method returns the company code for the employee associated with the user who is or was logged on to ESS. The value returned corresponds to the company code of the employee record in Sage HRMS.

[WebMethod]

```
public string GetSuiteConnectionString(string sAccessToken)
```

A call to this method returns the connection string that ESS uses to connect to the Sage HRMS database in question. The connection string will not contain a user name or password. These must be appended by the third-party application before using this connection string in conjunction with the API.

[WebMethod]

```
public string GetSQLConnectionString(string sAccessToken)
```

A call to this method returns the connection string that ESS uses to connect to its internal SQL database. The connection string will not contain a user name or password. These must be appended by the third-party application before using this connection string in conjunction with SQL OLEDB.

[WebMethod]

```
public string GetReturnURL(string sAccessToken)
```

This method returns a URL that can be used to navigate back to the calling ESS application. Any existing sessions may have expired and the user may be required to log back into ESS.

[WebMethod]

```
public string GetLoginName(string sAccessToken)
```

This method returns the ESS logon / user name belonging to the ESS user who initiated the SSOI request at the time when the SSOI link was generated. Keep in mind that ESS users can change their logon credentials while they are logged on.

Additional Web methods and a COM wrapper may be made available in a subsequent version of SSOI.

.NET Data Access API Interface

Introduction

To provide access to Sage HRMS data for third-party applications, ESS includes a service called "Abra Data Service" (ADS). This service allows access to encrypted FoxPro databases using the credentials configured for ESS and also supplies third-party applications with additional virtual, computed key columns in the Sage HRMS database to allow reconciliation of the ESS and Sage HRMS data.

Sage offers an API for third-party applications using the Microsoft .NET framework. The new API allows for efficient access to both SQL and FoxPro data in Sage HRMS.

Note: Third-party add-ons for Sage ESS users have the option to go through ADS instead of the data access APIs.

Features

The API provides the following functionality:

- Common API for SQL and FoxPro queries

- Enables access to virtual key columns which provides efficient processing for SQL and FoxPro databases

- Accepts T-SQL style queries for both SQL Server and FoxPro to automatically translate FoxPro databases (for example string length literals, single-quote handling, case-sensitivity, date handling, and TRIM function conversion)

- Supports encryption when using an ADS provider with the new API

- Auto-parameterization of SQL queries. To enhance query execution times, the API automatically parameterizes SQL queries to allow re-use of SQL execution plans for queries that only differ in literal expressions.

- Utility functions such as simplified .NET data access

The new API does have some limitations. Not all SQL statements, especially SQL server functions, can be automatically translated to FoxPro and SQL. You can either avoid SQL-specific functions in your queries or create different commands for FoxPro and SQL server.

Using the API

The API has two different access methods as follows:

- Create an instance of the class AbraDataAdapter. You can initialize AbraDataAdapter with either an existing DataAdapter or using command and connection parameters, similar to an OleDbDataAdapter or SqlDataAdapter.

- Directly use the static utility functions of AbraDataAdapter. You can directly execute the utility function, for example **AbraDataAdapter.Execute(sCommand, sConnection)**, to obtain a DataSet.

Sage Employee Self Service .NET Data Access API Interface Definition

// Constructor

public AbraDataAdapter(IDbDataAdapter oAdapterIn)

public AbraDataAdapter(string selectCommandText, OleDbConnection selectConnection)

public AbraDataAdapter(string selectCommandText, SqlConnection selectConnection)

public AbraDataAdapter(string selectCommandText, string selectConnectionString)

public AbraDataAdapter(OleDbCommand selectCommand)

public AbraDataAdapter(SqlCommand selectCommand)

public AbraDataAdapter()

public AbraDataAdapter(bool bSQL)

// IDbDataAdapter

public IDbCommand UpdateCommand // get / set property

public IDbCommand SelectCommand // get / set property

public IDbCommand DeleteCommand // get / set property

public IDbCommand InsertCommand // get / set property

// IDataAdapter

public int Fill(DataSet dataSet)

public ITableMappingCollection TableMappings // get property

public System.Data.MissingSchemaAction MissingSchemaAction

// get / set property

public System.Data.MissingMappingAction MissingMappingAction
// get / set property

public IDataParameter[] GetFillParameters()

public DataTable[] FillSchema(DataSet dataSet, System.Data.SchemaType schemaType)

public int Update(DataSet dataSet)

// Easy-access static utility functions

public static object ExecuteScalar(IDbCommand oCmd)

public static object ExecuteScalar(string commandText, OleDbConnection connection)

public static object ExecuteScalar (string commandText, SqlConnection

public static object ExecuteScalar (string commandText, string sConnString)

public static int ExecuteNonQuery(IDbCommand oCmd)

public static int ExecuteNonQuery(string commandText, OleDbConnection connection)

public static int ExecuteNonQuery(string commandText, SqlConnection

public static int ExecuteNonQuery(string commandText, string sConnString)

public static DataSet Execute(string selectCommandText, string selectConnection)

public static DataSet Execute(string selectCommandText, OleDbConnection selectConnection)

public static DataSet Execute(string selectCommandText, SqlConnection selectConnection)

Exposing Custom Data in View Builder

View Builder, delivered with Sage Employee Self Service (ESS), provides the ability to deliver Sage Employee Analytics to Executives, Managers, and Employees. With the upcoming SQL release we have extended View Builder to view custom data created through Custom Details in Sage HRMS.

Any custom fields that are created in Custom Details are automatically exposed in View Builder. The figure below is an example of Custom Details data exposed in View Builder. All Custom Details data is available under a node called **Custom**.
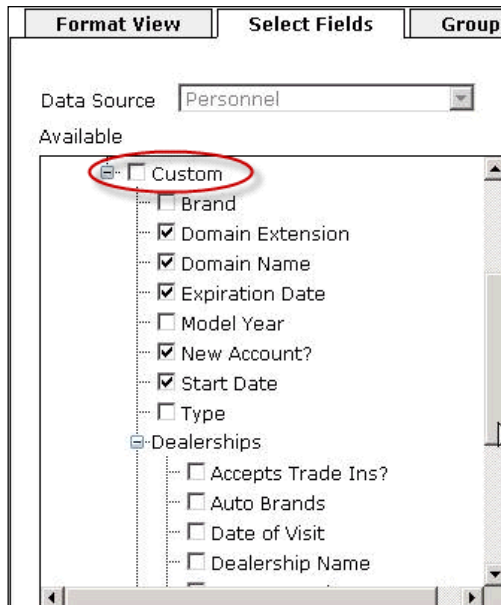
Custom data created in Custom Details can be accessed and used in View Builder in the same way as the current View Builder data is available. It can be used to select, view, filter, sort, etc. The next figures show an example of Custom Details data rendered in View Builder.

Custom Details Web Service/API

Another feature that has been added to Employee Self Service is the ability to populate Custom Details data by using a web service. This enables any external data source/third party application data to be integrated with Custom Details data in Sage HRMS. The web service is located in the ESS web path **http://<AppPath>/scripts/datasync.asmx**.
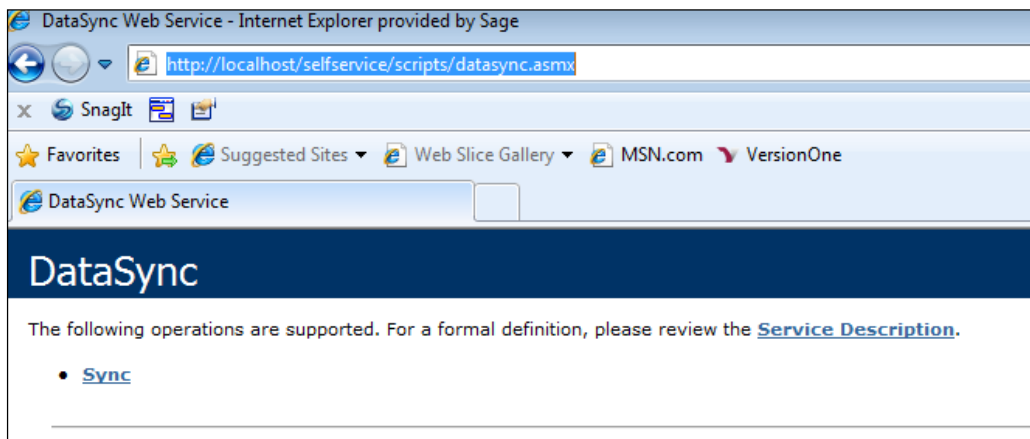
The **datasync.asmx** web service is made up of one supported operation: **Sync**.

The **Sync** operation has three parameters:

- **strXml**: This parameter is the xml string which contains the Custom Details data and data structure. The xml format will be discussed later in the document.

- **user** and **pwd**: The user name and password for data sync purposes is set on the ESS System Setup page (**System Administrator > System Settings > System Setup**):

The top of the following figure shows the area on the DataSync window where these parameters are entered.

XML Definition

As stated above, the Data Sync operation takes an xml string as the first input. The figure below is an example of a valid custom data xml string. The xml consists of three parts: General information, DataStructure, and Data, which will be discussed in more detail in the next sections. For the process to work, all parts must be sent in one xml file.

```xml
<?xml version="1.0" encoding="utf-8" ?>
<Root>
    <XMLSchemaVersion>1</XMLSchemaVersion>
    <ExternalSourceId>Aflac</ExternalSourceId>
    <DataFeedId>DuckBenefits</DataFeedId>
    <DataRelationship>2</DataRelationship>
    <Description>Aflac Services</Description>
    <DataStructure>
        <Field>
            <Title>Product Type</Title>
            <DatabaseField>PRODTYPE</DatabaseField>
            <DataType>C</DataType>
            <Length>30</Length>
            <DecimalPlaces>0</DecimalPlaces>
            <Required>Y</Required>
        </Field>
        <Field>
            <Title>Policy Name</Title>
            <DatabaseField>POLCNAME</DatabaseField>
            <DataType>C</DataType>
            <Length>40</Length>
            <DecimalPlaces>0</DecimalPlaces>
            <Required>Y</Required>
        </Field>
        <Field>
            <Title>New Policy?</Title>
            <DatabaseField>NUPOLICY</DatabaseField>
            <DataType>L</DataType>
            <Length>1</Length>
            <DecimalPlaces>0</DecimalPlaces>
            <Required>Y</Required>
        </Field>
        <Field>
            <Title>Enrollment Date</Title>
            <DatabaseField>ENRLDATE</DatabaseField>
            <DataType>D</DataType>
            <Length>8</Length>
            <DecimalPlaces>0</DecimalPlaces>
            <Required>N</Required>
        </Field>
    </DataStructure>
    <Data>
        <DataRow>
            <Value name="CompanyId">CRU</Value>
            <Value name="EmpNo">1</Value>
            <Value name="PRODTYPE">Supplemental</Value>
            <Value name="POLCNAME">Cancer/Specified Disease</Value>
            <Value name="NUPOLICY">Y</Value>
            <Value name="ENRLDATE">01/01/2011</Value>
        </DataRow>
        <DataRow>
            <Value name="CompanyId">CRU</Value>
            <Value name="EmpNo">1</Value>
            <Value name="PRODTYPE">Short Term</Value>
            <Value name="POLCNAME">Short Term Disability</Value>
            <Value name="NUPOLICY">N</Value>
            <Value name="ENRLDATE">01/01/2007</Value>
        </DataRow>
        <DataRow>
            <Value name="CompanyId">CRU</Value>
            <Value name="EmpNo">2</Value>
            <Value name="PRODTYPE">Supplemental</Value>
            <Value name="POLCNAME">Cancer/Specified Disease</Value>
            <Value name="NUPOLICY">N</Value>
            <Value name="ENRLDATE">01/01/2009</Value>
        </DataRow>
        <DataRow>
            <Value name="CompanyId">CRU</Value>
            <Value name="EmpNo">3</Value>
            <Value name="PRODTYPE">Hospitalization</Value>
            <Value name="POLCNAME">Hospital Care</Value>
            <Value name="NUPOLICY">1</Value>
            <Value name="ENRLDATE">01/01/2011</Value>
        </DataRow>
    </Data>
</Root>
```

XML General Information section

```
- <Root>
    <XMLSchemaVersion>1</XMLSchemaVersion>
    <ExternalSourceId>Aflac</ExternalSourceId>
    <DataFeedId>DuckBenefits</DataFeedId>
    <DataRelationship>2</DataRelationship>
    <Description>Aflac Services</Description>
  - <DataStructure>
```

1. **XMLSchemaVersion** (Type=Number Length=10 Required=Y Valid Values=Number): To support multiple versions of xml that can be sent to the web service, the xml must pass a version. This is necessary so the web service knows how to process the payload. Version one allows for bulk data insert/replace. This version does not support CRUD (Create/Update/Delete). The current version of the web service always bulk replaces the custom data on subsequent calls.

2. **ExternalSourceId** (Type=String Length=10 Required=Y Valid Values=Alpha numeric): This element is a unique identifier that identifies an external entity or third party application. For example, **Aflac** for an external entity or **BP third party app name** for a third party application.

   - **DataFeedId** (Type=String Length=14 Required=Y Valid Values=Alpha numeric): An ExternalSourceId can have multiple data feeds. The DataFeedId element allows for multiple feeds to be sent to Custom Details data in Abra HRMS. The combination of **ExternalSourceId + "_" + DataFeedId** uniquely identifies an external feed in Custom Details. In the example at the top of this page, the key is **Alfac_DuckBenefits**. When a key is established and has been used by customers, you should not change it.

   - **DataRelationship** (Type=Number Length=1 Required=Y Valid Values=1,2): Custom Details has the ability to store data as a **1 to 1** relationship, which is stored in the table **HRTKPERS**. It also has the ability to store **1 to many** relationships. In this case, each custom data feed generates a **TKMULnnn** table, where nnn is a sequential number assigned by the system. For **1 to 1** data feeds, the value for DataRelationship should be set to 1. For a **1 to many** feed, the value for DataRelationship should be set to 2.

   - **Description** (Type=String Length=50 Required=Y Valid Values=Alpha numeric): The Description element is used to show the custom data feed in a user friendly manner in View Builder.

XML Data structure section

```
<Description>Attuc Services</Description>
 - <DataStructure>
   - <Field>
       <Title>Product Type</Title>
       <DatabaseField>PRODTYPE</DatabaseField>
       <DataType>C</DataType>
       <Length>30</Length>
       <DecimalPlaces>0</DecimalPlaces>
       <Required>Y</Required>
     </Field>
   - <Field>
       <Title>Policy Name</Title>
       <DatabaseField>POLCNAME</DatabaseField>
       <DataType>C</DataType>
       <Length>40</Length>
       <DecimalPlaces>0</DecimalPlaces>
       <Required>Y</Required>
     </Field>
   - <Field>
       <Title>New Policy?</Title>
       <DatabaseField>NUPOLICY</DatabaseField>
       <DataType>L</DataType>
       <Length>1</Length>
       <DecimalPlaces>0</DecimalPlaces>
       <Required>Y</Required>
     </Field>
   - <Field>
       <Title>Enrollment Date</Title>
       <DatabaseField>ENRLDATE</DatabaseField>
       <DataType>D</DataType>
       <Length>8</Length>
       <DecimalPlaces>0</DecimalPlaces>
       <Required>N</Required>
     </Field>
   </DataStructure>
 - <Data>
```

The **DataStructure section** of the xml contains the Field properties, which are used to create the Custom Details data structures. The fields are used to alter the **HRTKPERS** table or the assigned **TKMULnnn** table, depending on the DataRelationship passed in.

1. **Title** (Type=String Length=20 Required=Y Valid Values=Alpha numeric): Each field must pass a title or description, which is used to display the column header.

2. **DatabaseField** (Type=String Length=8 Required=Y Valid Values=Alpha numeric): The DatabaseField element is used to name each column in the database. Each value must be unique within the xml string.

   - **DataType** (Type=String Length=1 Required=Y Valid Values=C,N,D,L): The field structure must pass the correct data type of the field. The valid values are described as:

     C = Character string (Abc123); any Ascii printable character

     N = Numeric (9999999.99999)

     D = Date (mm/dd/yyyy)

     L = Boolean (Y,N)

     Any values that are not valid generate an error report that is sent back to the external application.

   - **Length** (Type=Number Length=10 Required=Y Valid Values=Number): The maximum length of the field.

   - **DecimalPlaces** (Type=Number Length=10 Required=Y Valid Values=Number): The number of decimal places. This value is only relevant if the field is a number. Any other data type ignores this element.

   - **Required** (Type=String Length=1 Required=Y Valid Values=Y,N): The Required element determines if the value is required.

XML Data section

```
</DataStructure>
- <Data>
  - <DataRow>
      <Value name="CompanyId">CRU</Value>
      <Value name="EmpNo">1</Value>
      <Value name="PRODTYPE">Supplemental</Value>
      <Value name="POLCNAME">Cancer/Specified Disease</Value>
      <Value name="NUPOLICY">Y</Value>
      <Value name="ENRLDATE">01/01/2011</Value>
    </DataRow>
  - <DataRow>
      <Value name="CompanyId">CRU</Value>
      <Value name="EmpNo">1</Value>
      <Value name="PRODTYPE">Short Term</Value>
      <Value name="POLCNAME">Short Term Disability</Value>
      <Value name="NUPOLICY">N</Value>
      <Value name="ENRLDATE">01/01/2007</Value>
    </DataRow>
  - <DataRow>
      <Value name="CompanyId">CRU</Value>
      <Value name="EmpNo">2</Value>
      <Value name="PRODTYPE">Supplemental</Value>
      <Value name="POLCNAME">Cancer/Specified Disease</Value>
      <Value name="NUPOLICY">N</Value>
      <Value name="ENRLDATE">01/01/2009</Value>
    </DataRow>
  - <DataRow>
      <Value name="CompanyId">CRU</Value>
      <Value name="EmpNo">3</Value>
      <Value name="PRODTYPE">Hospitalization</Value>
      <Value name="POLCNAME">Hospital Care</Value>
      <Value name="NUPOLICY">1</Value>
      <Value name="ENRLDATE">01/01/2011</Value>
    </DataRow>
  </Data>
</Root>
```

The XML Data section contains DataRow elements. Each DataRow element contains child elements, which contain the data for each DataRow. Every DataRow element must have at a minimum two values: **CompanyId** and **EmpNo**. Without these elements, the data cannot be linked properly to Sage HRMS. Each name attribute on the value elements must match the DatabaseField name in the DataStructure section. If a named value does not match a DatabaseField name, that value is ignored and not processed.

Important! All the data rows must be sent **every** time. This is because the process completely deletes the prior data and replaces it with the new data feed.

Sample Application

A sample application, delivered with this release, calls the custom data web service. The sample application is located in a folder called **DatasyncUI** on the Desktop. The accompanying source code is located in a folder called **DatasyncUISource** on the Desktop.

Note: This is a sample application and should **not** be used for production purposes. It is distributed for the sole purpose of understanding how to implement this feature.
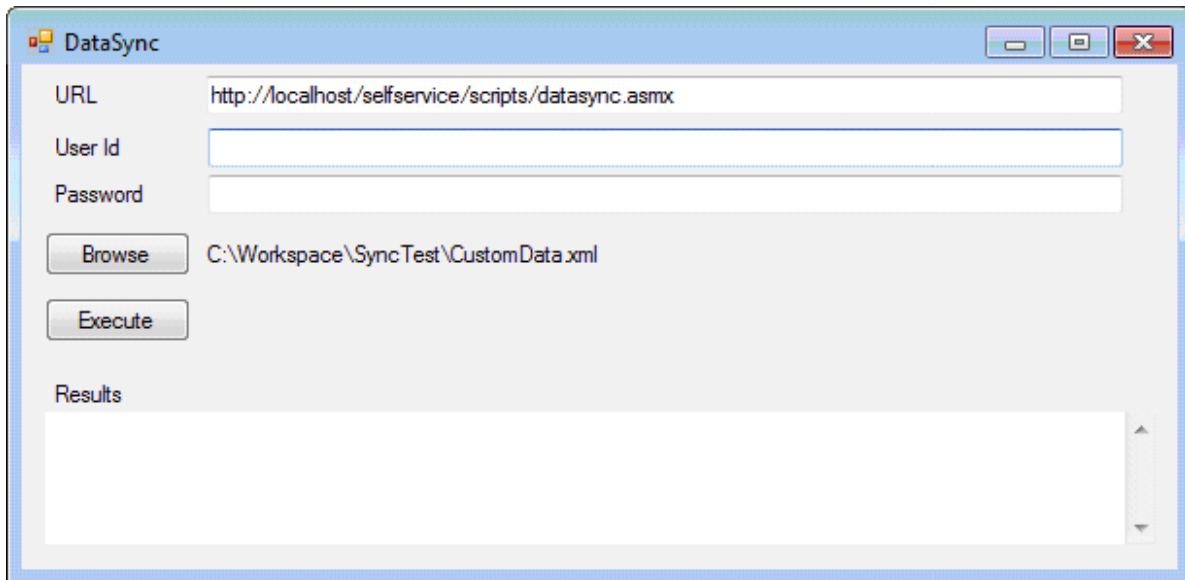
1. Point the URL to any location for the web service.

2. Enter a User Id and Password. These must match the user name and password set in ESS for the **Custom Data API User** (on the **System Setup > System Settings** page).

3. Browse to a valid **xml** file and click **Execute** to run the process.

4. The Results control displays the result of the web service call.

This sample application is a Windows-based application written in C# using Visual Studio 2010. The application code is shown below:

```csharp
private void btnExecute_Click(object sender, EventArgs e)
{
    webBrowser.Document.Body.InnerHtml = string.Empty;
    webBrowser.Document.Write("<HTML><BODY>Running</BODY></HTML>");

    XmlDocument xmlDoc = new XmlDocument();
    xmlDoc.Load(lblFilePath.Text);
    DataSync dataSync = new DataSync();

    dataSync.Url = tbURL.Text.Trim();
    ReturnValues rv = dataSync.Sync(xmlDoc.OuterXml, tbUserId.Text, tbPassword.Text);

    string documentText = string.Empty;

    if (rv.ReturnCode == Result.Ok)
    {
        documentText = "<HTML><BODY>Success!</BODY></HTML>";
    }
    else if (rv.ReturnCode == Result.FailedAuthorization)
    {
        documentText = "<HTML><BODY>Authorization Failed!</BODY></HTML>";
    }
    else if (rv.ReturnCode == Result.FailedXSDInit)
    {
        documentText = "<HTML><BODY>XSD Initialization Failed!</BODY></HTML>";
    }
    else if (rv.ReturnCode == Result.FailedXmlValidation)
    {
        XmlDocument resultInfo = new XmlDocument();
        resultInfo.LoadXml(rv.ResultInfo);
        XmlElement rootElement = resultInfo.DocumentElement;
        XmlNodeList messages = rootElement.SelectNodes("//Error");
        string message = "<HTML><BODY>" +
messages.Item(0).SelectSingleNode("ErrorDescription").SelectSingleNode("table").OuterXml +
"</BODY></HTML>";
        documentText = message;
    }
    else if (rv.ReturnCode == Result.Exception)
    {
        XmlDocument resultInfo = new XmlDocument();
        resultInfo.LoadXml(rv.ResultInfo);
        XmlElement rootElement = resultInfo.DocumentElement;
        XmlNodeList messages = rootElement.SelectNodes("//Error");
        MessageBox.Show(messages.Item(0).SelectSingleNode("ErrorDescription").InnerText);
    }
    else
    {
        documentText = "<HTML><BODY>Unkown Status!</BODY></HTML>";
    }

    webBrowser.Document.Body.InnerHtml = string.Empty;
    webBrowser.Document.Write(documentText);
    }
}
```

For flexibility, the test application's result control is a web browser control. This is because the error report returned from the web service is in HTML format.

In order to call the web service, a DataSync object has to be created. Then call the Sync method and pass in the xml and security information.

```
DataSync dataSync = new DataSync();

dataSync.Url = tbURL.Text.Trim();
ReturnValues rv = dataSync.Sync(xmlDoc.OuterXml, tbUserId.Text, tbPassword.Text);
```

The call is synchronous. When it returns, process the ReturnCode as shown below.

```
if (rv.ReturnCode == Result.Ok)
{
    documentText = "<HTML><BODY>Success!</BODY></HTML>";
}
else if (rv.ReturnCode == Result.FailedAuthorization)
{
    documentText = "<HTML><BODY>Authorization Failed!</BODY></HTML>";
}
else if (rv.ReturnCode == Result.FailedXSDInit)
{
    documentText = "<HTML><BODY>XSD Initialization Failed!</BODY></HTML>";
}
else if (rv.ReturnCode == Result.FailedXmlValidation)
{
    XmlDocument resultInfo = new XmlDocument();
    resultInfo.LoadXml(rv.ResultInfo);
    XmlElement rootElement = resultInfo.DocumentElement;
    XmlNodeList messages = rootElement.SelectNodes("//Error");
    string message = "<HTML><BODY>" +
messages.Item(0).SelectSingleNode("ErrorDescription").SelectSingleNode("table").OuterXml +
"</BODY></HTML>";
    documentText = message;
}
else if (rv.ReturnCode == Result.Exception)
{
    XmlDocument resultInfo = new XmlDocument();
    resultInfo.LoadXml(rv.ResultInfo);
    XmlElement rootElement = resultInfo.DocumentElement;
    XmlNodeList messages = rootElement.SelectNodes("//Error");
    MessageBox.Show(messages.Item(0).SelectSingleNode("ErrorDescription").InnerText);
}
else
{
    documentText = "<HTML><BODY>Unkown Status!</BODY></HTML>";
}
```

Real-time Custom Data Provider Interface

If syncing third-party data with the Custom Details is not sufficient, it is possible to plug directly into the View Builder by implementing a specific **.NET** interface inside of a Class Library assembly and placing that library in the **ESS Web\bin** directory. When an ESS session is first initialized after the login, it scans this directory for custom data provider implementations and will display additional properties it finds inside of the View Builder below the **Personnel\Custom** grouping.

Implementing the Custom Data Provider

- The Custom Data Provider implementation can expose employee-level custom data on a one-to-one or a one-to-many basis in the same way as the Custom Details Provider.

- The Custom Data Provider must be able to provide the metadata for all the custom properties of a given HRMS base entity (typically Personnel). This is what populates the View Builder tree. It also must be able to retrieve the property values for a specific employee when the view is rendered based on the primary key (Employee ID + Company Code).

- How and from where the data is retrieved is left up to the consumer of the Custom Data Provider. Note that for large result sets, the provider is invoked for every row, so performance may be impacted if some caching mechanism is not considered in place of numerous database queries.

To implement a Custom Data Provider, a .NET assembly must reference the **HRMS.Data.Custom.dll** already in the **ESS Web\bin** directory, and each provider class must implement the **HRMS.Data.Custom.IHRMSCustomDataProvider** interface. A sample provider is shown below to demonstrate how to model the two types of supported relationships to EmployeePersonnel and serve the data in View Builder.

```csharp
using HRMS.Data.Custom;
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace TestProvider
{
    public class Provider : IHRMSCustomDataProvider
    {
        private ICustomFieldMetaData _ShirtSize;
        private ICustomFieldMetaData _PerformanceReviewDate;
        private ICustomFieldMetaData _PerformanceReviewRating;

        private void InitMetaData(string className)
        {
            // Add a 1-to-1 property for T-Shirt Size
            _ShirtSize = new CustomFieldMetaData(this);
            _ShirtSize.BaseClass = className;
            _ShirtSize.CustomFieldDataType = typeof(string);
            _ShirtSize.CustomFieldName = "ShirtSize";
            _ShirtSize.CustomFieldDisplayName = "T-Shirt Size";
            _ShirtSize.DisplayOrder = 1;
```

```csharp
            // Add 2 one-to-many properties for Performance Reviews
            _PerformanceReviewDate = new CustomFieldMetaData(this);
            _PerformanceReviewDate.BaseClass = className;
            _PerformanceReviewDate.CustomFieldDataType = typeof(DateTime);
            _PerformanceReviewDate.CustomFieldName = "ReviewDate";
            _PerformanceReviewDate.CustomFieldDisplayName = "Performance Review Date";
            _PerformanceReviewDate.ParentEntityDisplayName = "Performance Reviews";
            _PerformanceReviewDate.DisplayOrder = 2;


            _PerformanceReviewRating = new CustomFieldMetaData(this);
            _PerformanceReviewRating.BaseClass = className;
            _PerformanceReviewRating.CustomFieldDataType = typeof(int);
            _PerformanceReviewRating.CustomFieldName = "ReviewRating";
            _PerformanceReviewRating.CustomFieldDisplayName = "Performance Review Rating";
            _PerformanceReviewRating.ParentEntityDisplayName = "Performance Reviews";
            _PerformanceReviewRating.DisplayOrder = 3;
        }

        public string Name
        {
            get { return "MyProvider"; }
        }

        public string DisplayName
        {
            get { return "My Basic Provider"; }
        }

        public List<ICustomFieldMetaData> GetMetaDataForClass(string className)
        {
            List<ICustomFieldMetaData> metaData = new List<ICustomFieldMetaData>();

            if (className == "HRMS.Ste.BusinessObjects.EmployeePersonnel")
            {
                InitMetaData(className);

                metaData.Add(_ShirtSize);
                metaData.Add(_PerformanceReviewDate);
                metaData.Add(_PerformanceReviewRating);
            }

            return metaData;
        }

        public CustomFieldDataCollection GetCustomData(string className, string pk)
        {
            CustomFieldDataCollection results = new CustomFieldDataCollection(this);

            if (className == "HRMS.Ste.BusinessObjects.EmployeePersonnel" && pk == "101      ZSI") //
"Donald Adams" in HRMS Sample Data
            {
            InitMetaData(className);
                // First add one-to-one property
                results.EmployeeLevelData = new List<ICustomFieldData>();
                ICustomFieldData shirtSizeData = new CustomFieldData();
                shirtSizeData.MetaData = _ShirtSize;
                shirtSizeData.DataValue = "XL";
                results.EmployeeLevelData.Add(shirtSizeData);

                // Add Multi-row data
                results.MultiRowData = new List<IMultiRowCustomData>();
                IMultiRowCustomData performanceReviewMultiData = new MultiRowCustomData();
                results.MultiRowData.Add(performanceReviewMultiData);
```

```csharp
                performanceReviewMultiData.GroupName = _PerformanceReviewDate.ParentEntity;
                performanceReviewMultiData.CustomData = new List<List<ICustomFieldData>>();

                // Now add the individual multi-row records, starting with the first performance
review
                List<ICustomFieldData> row1PerformanceReviewData = new List<ICustomFieldData>();
                performanceReviewMultiData.CustomData.Add(row1PerformanceReviewData);

                ICustomFieldData row1ReviewRating = new CustomFieldData();
                row1ReviewRating.MetaData = _PerformanceReviewRating;
                row1ReviewRating.DataValue = 4;
                row1PerformanceReviewData.Add(row1ReviewRating);

                ICustomFieldData row1ReviewDate = new CustomFieldData();
                row1ReviewDate.MetaData = _PerformanceReviewDate;
                row1ReviewDate.DataValue = new DateTime(2010, 2, 1);
                row1PerformanceReviewData.Add(row1ReviewDate);

                // Add the 2nd performance review
                List<ICustomFieldData> row2PerformanceReviewData = new List<ICustomFieldData>();
                performanceReviewMultiData.CustomData.Add(row2PerformanceReviewData);

                ICustomFieldData row2ReviewRating = new CustomFieldData();
                row2ReviewRating.MetaData = _PerformanceReviewRating;
                row2ReviewRating.DataValue = 5;
                row2PerformanceReviewData.Add(row2ReviewRating);

                ICustomFieldData row2ReviewDate = new CustomFieldData();
                row2ReviewDate.MetaData = _PerformanceReviewDate;
                row2ReviewDate.DataValue = new DateTime(2010, 3, 1);
                row2PerformanceReviewData.Add(row2ReviewDate);

            }

            return results;
        }

        public bool WriteCustomData(string className, string pk, CustomFieldDataCollection customData)
        {
            // Not currently implemented

            return true;
        }
    }
}
```

If the above code is compiled into an assembly and placed into the **ESS Web\bin** directory, the three additional custom properties (shirt size, performance review date, and performance review rating) will now be available inside of the View Builder grouped by the provider's **DisplayName** property as shown below:
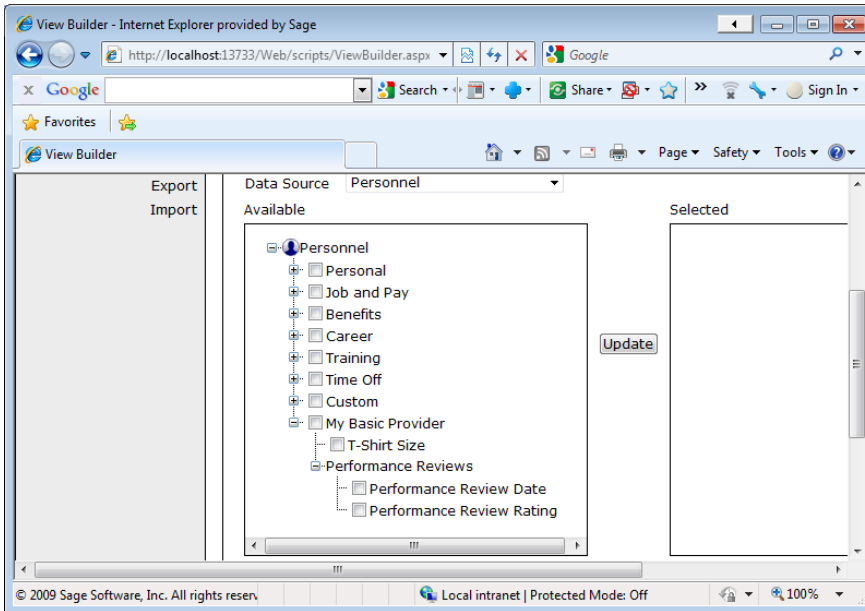
Selecting the three properties (along with the built-in properties for **First Name** and **Last Name**) will cause them to render in a similar manner as existing one-to-one and one-to-many properties as shown in the following figure.
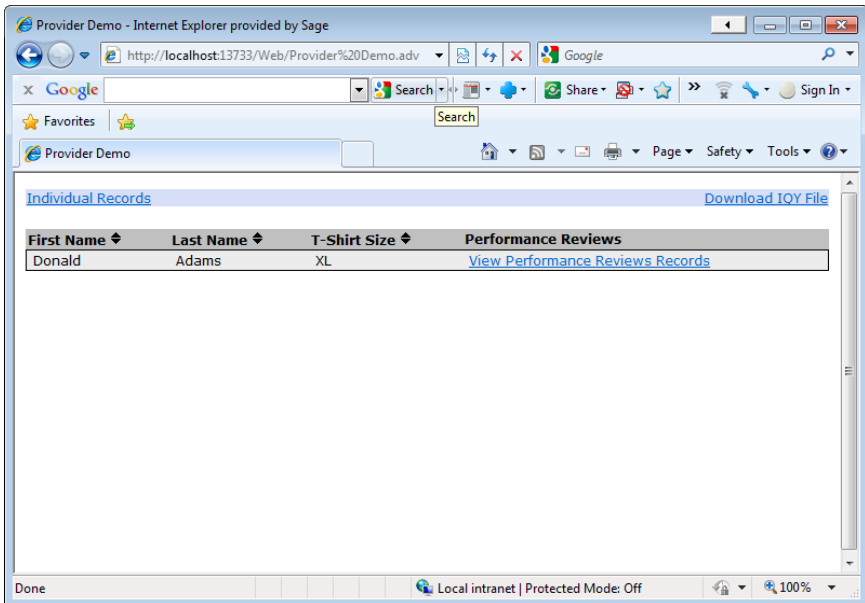
Sage HRMS Keys used by Sage Employee Self Service

Tables and Keys

This is a list of all the Sage HRMS tables that are used by Sage Employee Self Service. The values in each of these key columns must be unique.

When importing data from a third-party system to Sage HRMS, these key columns must be populated and no two records in these tables should have identical values. If there are any duplicate records, they must be removed so that Sage Employee Self Service can correctly read the data

Table	Alias	Key Columns
Attendance Benefit Plan Definition	HATPLAN	P_COMPANY - Company Code P_ID - Plan ID P_RULE - Rule Record
Employee Attendance Summary	HATSUM	T_COMPANY - Company Code T_EMPNO - Employee ID T_ID - Plan ID Code
Benefit Rate Setup	HBEDEF	D_COMPANY - Company Code D_ID - Rate Table Code D_RULE - Rule Record
Beneficiary Enrollments	HBENBEN	B_BENECODE - Benefit Plan Code B_BENEID - Insurance or Savings B_COMPANY - Company Code B_DEPID - Dependent ID Number B_EMPNO - Employee ID
Employee Benefit	HBENE	B_BENECODE - Benefit Code B_BENEID - Benefit Type Code (I/S/N/V) B_COMPANY - Company Code B_EMPNO - Employee ID B_CHGEFF - Change Effective Date
Benefit Plan Table	HBEPLAN	BT_BENEID - Benefit Type Code (I/S) BT_COMPANY - Company Code CODE - Benefit Code
Benefit Rate	HBERES	R_COMPANY - Company Code R_ID - Rate Table ID R_ORDER - Order
Dependent Benefits	HDEPBEN	D_BENECODE - Benefit Plan Code D_COMPANY - Company Code

Table	Alias	Key Columns
		D_DEPID - Dependent ID Number
		D_EMPNO - Employee ID
Employee Dependent	HDEPEND	D_COMPANY - Company Code
		D_EMPNO - Employee ID
		D_DEPID - Dependent ID Number
Employee Education History	HEDU	E_COMPANY - Company Code
		E_EMPNO - Employee ID
		E_GRADYR - Year of Graduation
		E_MAJOR - Major for Studies
Employee Emergency Contact	HEMERG	E_COMPANY - Company Code
		E_EMPNO - Employee ID
Employee Event	HEVENTS	E_CODE - Event Code
		E_COMPANY - Company Code
		E_EFFDATE - Effective Date
		E_EMPNO - Employee ID
Employee Notes	HRENOTES	N_COMPANY - Company Code
		N_DCOMMENT - Employee Note Entry Date
		N_EMPNO - Employee ID
		N_TYPE - Employee Note Type Code
Employee Personnel	HRPERSNL	P_COMPANY - Company Code
		P_EMPNO - Employee ID
HR and Payroll Code Table	HRTABLES	CODE – Code
		COMPANY - Company Code
		FRULE - Rule indicator
		FTABLE - Table ID
Employee Skill	HSKILLS	S_COMPANY - Company Code
		S_EMPNO - Employee ID
		S_SKILL - Skill Code
Employee Wellness	HWELL	W_COMPANY - Company Code
		W_EMPNO - Employee ID
Course Catalog	NCATCOUR	COMPANY - Company Code
		COURSE - Course Code
Instructor Catalog	NCATINST	COMPANY - Company Code
		INSTRCODE - Instructor Code
		P_COMPANY - Employer Code of Employee Record
		P_EMPNO - Employee ID of Employee Record
Training Location Catalog	NCATLOCA	COMPANY - Company Code
		LOCATION - Location Code
Class Information	NCLAINFO	COMPANY - Company Code
		COURSE - Course Code

Table	Alias	Key Columns
		STARTDATE - Date Class Begins
Employee Certifications	NEMPCERT	CERTCODE - Certification Code COMPANY - Company Code EMPNO - Employee ID
Employee Required Courses	NEMPREQU	COMPANY - Company Code COURSE - Course Code EMPNO - Employee ID
Benefit Rate Setup for Open Enrollment	OEBEDEF	D_COMPANY - Company Code D_ID - Rate Table Code D_RULE - Rule Record
Benefit Plan Table for Open Enrollment	OEBEPLAN	BT_BENEID - Benefit Type Code (I/S) BT_COMPANY - Company Code CODE - Benefit Code
Benefit Rate for Open Enrollment	OEBERES	R_COMPANY - Company Code R_ID - Rate Table ID R_ORDER - Order
Employee Current Check Header	PRCHECK	CHKNUMBER - Check Number COMPANY - Company Identifier EMPNO - Employee ID PAYGROUP - Employee Pay Group Code
Employee Check History Header	PRCKHIST	CHKNUMBER - Check Number COMPANY - Company Identifier EMPNO - Employee ID PAYGROUP - Employee Pay Group Code
Check Stub YTD Snapshot	PRCKYTD	CHKNUMBER - Check Number CODE - Earning or Deduction Code CODETYPE - Earning or Deduction Type Code COMPANY - Company Code EMPNO - Employee ID
Earnings / Voluntary Deductions Code	PRCODES	CODE - Earning/Deduction Code CODETYPE - Code Type (Deduction/Earning) COMPANY - Company Code FRULE - Rule Record
Employee Voluntary Deductions Register	PRDEDS	COMPANY - Company Identifier DEDCODE - Voluntary Deduction Code EMPNO - Employee ID TYPE - Record Type Code (H/A)
Employee Check History Detail	PRDEHIST	CHKNUMBER - Check Number CODE - Earning or Deduction Code

Table	Alias	Key Columns
		COMPANY - Employer ID DETAILTYPE - Detail Type Code EMPNO - Employee ID
Employee Current Check Detail	PRDETAIL	CHKNUMBER - Check Number CODE - Code (Ded/Earn/Tax) COMPANY - Company Identifier DETAILTYPE - Detail Type Code EMPNO - Employee ID
Employee Earnings Register	PREARN	COMPANY - Company Identifier EARNCODE - Earnings Code EMPNO - Employee ID TYPE - Record Type Code (H/A)
Employee Direct Deposit History	PRHDIRCT	BANKACCT - Bank Account Number BANKROUT - Bank Routing Number COMPANY - Company Identifier EMPNO - Employee ID DEPNUMBER - Direct Deposit Advice Number ACCTTYPE – Account Type
Employer Tax Code	PRTAXCDS	COMPANY - Company Identifier TAXCODE - Tax Code
Employee Tax Withholdings Register	PRTAXES	COMPANY - Company Identifier EMPNO - Employee ID TAXCODE - Tax Code TYPE - Record Type Code (H/A)
Employee Year End W-2s (2001 and after)	PRW22001	COMPANY - Employer's 3 Character Code EMPNO - Employee ID # PROCYEAR - W-2 Year
Employer Setup	SYEMPLOY	E_COMPANY - Company Code
Enterprise Setup	SYENTER	E_FEDTAXID - Federal Tax Identifier

Note: The **Precision** column contains the maximum number of digits in numeric fields. The **Scale** column contains the number of decimal places.

tAUDIT

Name	Type	Length	Precision	Scale	Nullable
AuditIdNo	int		10	0	no
ChangeForUserIdNo	int		10	0	no
PrimaryKeyColumn1Value	varchar	50			yes
PrimaryKeyColumn2Value	varchar	50			yes
ChangeByUserIdNo	int		10	0	no
AuditTypeIdNo	int		10	0	no
FunctionalAreaIdNo	int		10	0	no
BusinessObjectName	varchar	50			no
ColumnName	varchar	50			yes
OldValue	varchar	256			yes
NewValue	varchar	256			yes
AuditDateTime	datetime				no
AuditTimestamp	binary				no

tBENEFIT_ELECTION_OPTIONS

Name	Type	Length	Precision	Scale	Nullable
BenefitElectionOptionIdNo	int		10	0	no
BenefitElectionOption	varchar	30			no
BenefitElectionOptionPlanTypeIdNo	int		10	0	no
BenefitElectionOptionValue	varchar	50			yes
BenefitElectionOptionTimestamp	binary				no

tBENEFIT_ELECTION_PLAN_COVERED_DEPENDENTS

Name	Type	Length	Precision	Scale	Nullable
BenefitPlanCoveredDependentIdNo	int		10	0	no
BenefitPlanIdNo	int		10	0	yes
HrTablesLogicalPrimaryKey	varchar	21			no
BenefitPlanCoveredDependentTimestamp	binary				no

tBENEFIT_ELECTION_PLAN_ELECTION_OPTION_RATE_TABLE_OPTION

Name	Type	Length	Precision	Scale	Nullable
BenefitPlanElectionOptionRateTableOptionIdNo	int		10	0	no
BenefitPlanElectionOptionIdNo	int		10	0	no
hBeResLogicalPrimaryKey	varchar	45			no
BenefitPlanElectionRequirementIdNo	int		10	0	yes
BenefitElectionOptionIdNo	int		10	0	yes
BenefitPlanElectionOptionRateTableOptionTimestamp	binary				no

tBENEFIT_ELECTION_PLAN_ELECTION_OPTIONS

Name	Type	Length	Precision	Scale	Nullable
BenefitPlanElectionOptionIdNo	int		10	0	no
BenefitPlanElectionRequirementIdNo	int		10	0	yes
BenefitElectionOptionIdNo	int		10	0	yes
DependentElectionInd	Bit	1			
BenefitPlanElectionOptionsTimestamp	binary				no

tBENEFIT_ELECTION_PLAN_ELECTION_REQUIREMENTS

Name	Type	Length	Precision	Scale	Nullable
BenefitPlanElectionRequirementIdNo	int		10	0	no
BenefitPlanIdNo	int		10	0	no
CoveredPersonTypeIdNo	int		10	0	no
ElectionRequirementTypeIdNo	int		10	0	no
ElectionDescription	char	30			yes
hBeDefLogicalPrimaryKey	varchar	29			yes
ElectionRequirementStoreColumnIdNo	int		10	0	yes
ElectionValueRequiredInd	Bit	1			
BenefitPlanElectionRequirementsTimestamp	binary				no

tBENEFIT_ELECTION_PLAN_ELECTION_REQUIREMENTS

Name	Type	Length	Precision	Scale	Nullable
BenefitPlanElectionRequirementIdNo	int		10	0	no
BenefitPlanIdNo	int		10	0	no
CoveredPersonTypeIdNo	int		10	0	no
ElectionRequirementTypeIdNo	int		10	0	no
ElectionDescription	char	30			yes
hBeDefLogicalPrimaryKey	varchar	29			yes
ElectionRequirementStoreColumnIdNo	int		10	0	yes
ElectionValueRequiredInd	bit	1			
BenefitPlanElectionRequirementsTimestamp	binary				no

tBENEFIT_ELECTION_PLANS

Name	Type	Length	Precision	Scale	Nullable
BenefitPlanIdNo	int		10	0	no
hBePlanLogicalPrimaryKey	varchar	15			no
BenefitPlanStatusIdNo	int		10	0	no
PlanPhysicianRequiredInd	bit				no
PlanTypeIdNo	int		10	0	no
BenefitPlanGroupIdNo	int		10	0	no
CoverageOptionIdNo	int		10	0	no
OpenEnrollmentPlanDescription	varchar	150			yes
OpenEnrollmentCustomReference1IdNo	int		10	0	yes
OpenEnrollmentCustomReference2IdNo	int		10	0	yes
LifeEventsPlanDescription	varchar	150			yes
LifeEventsCustomReference1IdNo	int		10	0	yes
LifeEventsCustomReference2IdNo	int		10	0	yes
BeneficiaryOptionIdNo	int		10	0	
DependentsRequiredInd	bit	1			
BenefitPlanTimestamp	binary				no

tBENEFIT_ELECTION_PLAN_QUESTIONS

Name	Type	Length	Precision	Scale	Nullable
BenefitElectionPlanQuestionIdNo	Int				no
BenefitPlanIdNo	Int				no
BenefitElectionPlanQuestionOrder	UnsignedTinyInt				no
BenefitElectionPlanQuestion	Char	150			no
BenefitElectionPlanQuestionTypeIdNo	Int				no
BenefitElectionPlanQuestionValues	Char	200			yes
BenefitElectionPlanQuestionRequiredInd	Boolean				no
BenefitElectionPlanQuestionInactiveInd	Boolean				no
BenefitElectionPlanQuestionTimestamp	binary				no

tBENEFIT_ELIGIBILITY

Name	Type	Length	Precision	Scale	Nullable
BenefitEligibilityIdNo	int		10	0	no
hBePlanLogicalPrimaryKey	varchar	15			no
FirstOrganizationLevelKey	varchar	21			yes
SecondOrganizationLevelKey	varchar	21			yes
EmployeeStatusActiveInd	bit				no
EmployeeStatusTerminatedInd	bit				no

tBENEFIT_ELIGIBILITY

EmployeeStatusLOAInd	bit				no
SalariedInd	bit				no
HourlyInd	bit				no
ExemptInd	bit				no
NonexemptInd	bit				no
MinimumAge	tinyint		3	0	no
MinimumHoursPerWeek	tinyint		3	0	no
SourceDateIdNo	int		10	0	no
EligibilityUnitIdNo	int		10	0	no
NumberOfUnits	smallint		5	0	no
WaitPeriodDayIdNo	int		10	0	no
JobCodeAppliesInd	bit				no
BenefitEligibilityTimestamp	binary				no

tBENEFIT_ELIGIBILITY_COMPANIES

Name	Type	Length	Precision	Scale	Nullable
BenefitEligibilityCompanyIdNo	int		10	0	no
BenefitEligibilityIdNo	int		10	0	no
CompanyIdNo	int		10	0	no
BenefitEligibilityCompanyTimestamp	binary				no

tBENEFIT_ELIGIBILITY_COMPANY_ORGANIZATIONS

Name	Type	Length	Precision	Scale	Nullable
BenefitEligibilityCompanyIdNo	int		10	0	no
OrganizationLevelKey	varchar	21			no
OrganizationLevelNumber	tinyint		3	0	no
BenefitEligibilityCompanyOrganizationTimestamp	binary				no

tBENEFIT_ELIGIBILITY_EMPLOYEE_TYPES

Name	Type	Length	Precision	Scale	Nullable
BenefitEligibilityIdNo	int		10	0	no
EmployeeTypeKey	varchar	21			no
BenefitEligibilityEmployeeTypeTimestamp	binary				no

tBENEFIT_ELIGIBILITY_JOBS

Name	Type	Length	Precision	Scale	Nullable
BenefitEligibilityIdNo	int		10	0	no
JobCodeKey	varchar	21			no
BenefitEligibilityJobTimestamp	binary				no

tBENEFIT_OPEN_ENROLLMENT_BENEFIT_PLANS

Name	Type	Length	Precision	Scale	Nullable
BenefitOpenEnrollmentIdNo	int		10	0	no
BenefitPlanKey	varchar	15			no
BenefitOpenEnrollmentBenefitPlanTimestamp	binary				no

tBENEFIT_OPEN_ENROLLMENT_COMPANIES

Name	Type	Length	Precision	Scale	Nullable
BenefitOpenEnrollmentIdNo	int		10	0	no
CompanyIdNo	int		10	0	no
BenefitOpenEnrollmentCompanyTimestamp	binary				no

tBENEFIT_OPEN_ENROLLMENTS

Name	Type	Length	Precision	Scale	Nullable
BenefitOpenEnrollmentIdNo	int		10	0	no
OpenEnrollmentPeriodName	varchar	50			yes
OpenEnrollmentBeginDate	datetime				no
OpenEnrollmentEndDate	datetime				no
OpenEnrollmentPlanYearEffectiveDate	datetime				no
EmployeeStatusActiveInd	bit				no
EmployeeStatusLOAInd	bit				no
HRMSPlansUpdatedInd	bit				no
OpenEnrollmentContactName	varchar	50			yes
OpenEnrollmentContactEmail	varchar	50			yes
OpenEnrollmentContactPhone	varchar	20			yes
OpenEnrollmentWelcomeText	varchar	500			yes
OpenEnrollmentNotificationText	varchar	500			yes
CustomReference1IdNo	int		10	0	yes
CustomReference2IdNo	int		10	0	yes
CustomReference3IdNo	int		10	0	yes
CustomReference4IdNo	int		10	0	yes
BenefitOpenEnrollmentTimestamp	binary				no

tBENEFIT_PLAN_GROUPS

Name	Type	Length	Precision	Scale	Nullable
BenefitPlanGroupIdNo	int		10	0	no
BenefitPlanGroupName	varchar	30			no
BenefitPlanGroupRequiredGroupIdNo	int		10	0	yes
BenefitPlanGroupWaiverRequiredInd	bit				no
BenefitPlanGroupMultipleEnrollmentsInd	bit				no
BenefitPlanGroupText	varchar	1000			yes
CustomReference1IdNo	int		10	0	yes
CustomReference2IdNo	int		10	0	yes
BenefitPlanGroupTimestamp	binary				no

tBUSINESS_OBJECT_TRIGGERS

Name	Type	Length	Precision	Scale	Nullable
BusinessObjectTriggerIdNo	int		10	0	no
BusinessObjectName	varchar	60			no
BusinessObjectTriggerTypeIdNo	int		10	0	no
BusinessObjectTriggerAssemblyName	varchar	60			no
BusinessObjectTriggerClassName	varchar	120			no
BusinessObjectTriggerActiveInd	bit				no
BusinessObjectTriggerOrder	int		10	0	no
BusinessObjectTriggerTimestamp	binary				no

tCODE_TRANSLATIONS

Name	Type	Length	Precision	Scale	Nullable
CodeTranslationIdNo	int		10	0	no
CodeTranslationType	varchar	2			no
CodeTranslation	varchar	50			no
CodeTranslationTimestamp	binary				no

tCOMPANIES

Name	Type	Length	Precision	Scale	Nullable
CompanyIdNo	int		10	0	no
AbraSuiteCompanyCode	varchar	3			no
UsesEnterpriseFunctionalAreasInd	bit				no
DisplayEmployerContributionInd	bit				no
UpdateSmokerFieldInd	bit				no
NotificationEmailInd	bit				no
PerformanceReviewReminderDays	smallint		5	0	no
BirthdayReminderDays	smallint		5	0	no

tCOMPANIES					
EmploymentAnniversaryReminderDays	smallint		5	0	no
EmploymentAnniversaryReminderBaseDateIdNo	int		10	0	no
MessageCenterMailbox	varchar	50			yes
CompanyStylesheetIdNo	int		10	0	no
CompanyLogoIdNo	int		10	0	yes
DisplayCustomLogoOnAllPagesInd	bit				no
DisplayCustomLogoOnHomePageInd	bit				no
DisplaySalaryGradeInd	bit				no
TemplateRequisitionIdNo	int				yes
ViewOtherWorkEligibilty	bit	1			no
ViewAge18OrOlder	bit	1			no
ViewWorkPermit	bit	1			no
ViewGender	bit	1			no
ViewCitizenship	bit	1			no
CriminalChoice	int		10	0	no
ViewSSN	bit	1			no
CostDisplayMode	int				no
CompanyTimestamp	binary				no

tCOMPANY_FUNCTIONAL_AREA_DELEGATE_ROLES					
Name	**Type**	**Length**	**Precision**	**Scale**	**Nullable**
CompanyFunctionalAreaDelegateRoleIdNo	int		10	0	no
CompanyFunctionalAreaIdNo	int		10	0	no
RoleIdNo	int		10	0	no
ApproverRoleInd	bit				no
CompanyFunctionalAreaDelegateRoleOrder	tinyint		3	0	no
CompanyFunctionalAreaDelegateRoleTimestamp	binary				no

tCOMPANY_FUNCTIONAL_AREAS					
Name	**Type**	**Length**	**Precision**	**Scale**	**Nullable**
CompanyFunctionalAreaIdNo	int		10	0	no
CompanyIdNo	int		10	0	no
FunctionalAreaIdNo	int		10	0	no
CompanyFunctionalAreaWorkflowTypeIdNo	int		10	0	no
CompanyFunctionalAreaTimestamp	binary				no

tCOMPANY_TIME_OFF_PLAN_SETTINGS

Name	Type	Length	Precision	Scale	Nullable
CompanyTimeOffPlanSettingIdNo	int		10	0	no
CompanyIdNo	int		10	0	no
PlanLogicalPrimaryKey	varchar	100			no
PlanDescription	varchar	15			no
DefaultReasonCode	varchar	15			no
ExceedAvailableBalanceBy	int		10	0	no
CompanyTimeOffPlanSettingTimestamp	binary				no

tCOMPANY_TIME_OFF_SETTINGS

Name	Type	Length	Precision	Scale	Nullable
CompanyTimeOffSettingIdNo	int		10	0	no
CompanyIdNo	int		10	0	no
NotifyOnRequestDeletionInd	bit				no
DisplayCarryoverInd	bit				no
DisplayTimeOffHistoryFromDate	datetime				yes
UpdateTakenTimeOffModeIdNo	int		10	0	no
RequestsProcessedThroughDate	datetime				yes
DisplayTimeOffHistoryFromIdNo	int		10	0	no
RetainTimeOffHistoryFromDate	datetime				yes
CompanyTimeOffSettingTimestamp	binary				no

tCOMPANY_USER_DEFINED_FIELD_SETTINGS

Name	Type	Length	Precision	Scale	Nullable
CompanyUserDefinedFieldSettingIdNo	int		10	0	no
CompanyIdNo	int		10	0	no
HRUserDefinedField1Ind	bit				no
HRUserDefinedField2Ind	bit				no
HRUserDefinedField3Ind	bit				no
HRUserDefinedField4Ind	bit				no
PayrollUserDefinedField1Ind	bit				no
PayrollUserDefinedField2Ind	bit				no
PayrollUserDefinedField3Ind	bit				no
PayrollUserDefinedField4Ind	bit				no
CompanyUserDefinedFiledSettingTimestamp	binary				no

tCUSTOM_FILE_REFERENCES

Name	Type	Length	Precision	Scale	Nullable
CustomFileReferenceIdNo	int		10	0	no
CustomFileReferenceTypeIdNo	int		10	0	no

tCUSTOM_FILE_REFERENCES

CustomFileReferenceName	varchar	30			no
CustomFileReferenceDescription	varchar	60			yes
CustomFileReference	varchar	50			no
CustomFileReferenceTimestamp	binary				no

tCUSTOM_REFERENCES

Name	Type	Length	Precision	Scale	Nullable
CustomReferenceIdNo	int		10	0	no
CustomReferenceTypeIdNo	int		10	0	no
CustomReferenceName	varchar	30			no
CustomReferenceDescription	varchar	60			yes
CustomReference	varchar	2500			no
CustomReferenceSingleSignOnInd	bit				no
CustomReferenceTimestamp	binary				no

tDS_DATA_SHARE

Name	Type	Length	Precision	Scale	Nullable
DataShareId	int	4	10	0	no
DataShareMetadata	text	16	0	0	no
DataShareTimestamp	timestamp	8	0	0	no

tELECTION_REQUIREMENT_STORE_COLUMNS

Name	Type	Length	Precision	Scale	Nullable
ElectionRequirementStoreColumnIdNo	int		10	0	no
CoveredPersonTypeIdNo	int		10	0	no
StoreColumnName	char	20			no
ElectionRequirementStoreColumnTimestamp	binary				no
StoreColumnDescription	char	50			no
StoreColumnScale	tinyint		3	0	
StoreColumnPrecision	tinyint		3	0	
StoreColumnNumericInd	bit	1			
StoreColumnPropertyName	char	50			yes

tEMPLOYEE_LIFE_EVENTS

Name	Type	Length	Precision	Scale	Nullable
EmployeeLifeEventIdNo	int		10	0	no
LifeEventIdNo	int		10	0	yes
EmployeeLifeEventStatusIdNo	int		10	0	no
UserIdNo	int		10	0	yes
EmployeeLifeEventDate	smalldatetime				no
EmployeeLifeEventDateEntered	datetime				yes
EmployeeLifeEventTimestamp	binary				no

tEMPLOYEE_LIFE_EVENT_BENEFICIARIES

Name	Type	Length	Precision	Scale	Nullable
EmployeeLifeEventBeneficiaryIdNo	int		10	0	no
EmployeeLifeEventBenefitPlanIdNo	int		10	0	yes
hDependLogicalPrimaryKey	varchar	12			no
BeneficiaryType	char	1			no
DistributionPercentage	int		10	0	yes
EmployeeLifeEventBeneficiaryTimestamp	binary				no

tEMPLOYEE_LIFE EVENT_BENEFIT_PLANS

Name	Type	Length	Precision	Scale	Nullable
EmployeeLifeEventBenefitPlanIdNo	int		10	0	no
EmployeeLifeEventIdNo	int		10	0	yes
hBePlanLogicalPrimaryKey	varchar	15			no
EmployeeEnrolledInd	bit				no
EmployeeElectionRequirementIdNo	int		10	0	yes
EmployeeElectionOptionIdNo	int		10	0	yes
EmployeeElectionAmountPercent	decimal	9	14	2	yes
WaiveInd	bit				no
DeleteInd	bit				no
EmployeeCost	decimal	9	14	2	yes
EmployerContribution	decimal	9	14	2	yes
FrequencyDescription	nvarchar	50			yes
MonthlyCost	decimal		14	2	yes
EmployeeLifeEventBenefitPlanTimestamp	binary				no

tEMPLOYEE_LIFE_EVENT_BENEFIT_PLAN_ANSWERS

Name	Type	Length	Precision	Scale	Nullable
EmployeeLifeEventBenefitPlanIdNo	Int		10		no
BenefitElectionPlanQuestionIdNo	Int		10		no
EmployeeLifeEventBenefitPlanAnswer	Char	100			yes
EmployeeLifeEventBenefitPlanAnswerTimestamp	binary		8		no

tEMPLOYEE_LIFE_EVENT_DEPENDENTS

Name	Type	Length	Precision	Scale	Nullable
EmployeeLifeEventDependentIdNo	int		10	0	no
EmployeeLifeEventBenefitPlanIdNo	int		10	0	yes
DependentElectionRequirementIdNo	int		10	0	yes
DependentElectionOptionIdNo	int		10	0	yes
DependentElectionAmountPercent	decimal	9	14	2	yes
hDependLogicalPrimaryKey	varchar	12			no
EmployeeLifeEventDependent Timestamp	binary				no

tEMPLOYEE_OPEN_ENROLLMENT_BENEFICIARIES

Name	Type	Length	Precision	Scale	Nullable
EmployeeOpenEnrollmentBeneficiaryIdNo	int				no
EmployeeOpenEnrollmentBenefitPlanIdNo	int				yes
hDependLogicalPrimaryKey	varchar	12			no
BeneficiaryType	char	1			no
DistributionPercentage	int				yes
EmployeeOpenEnrollmentBeneficiaryTimestamp	binary				no

tEMPLOYEE_OPEN_ENROLLMENT_BENEFIT_PLANS

Name	Type	Length	Precision	Scale	Nullable
EmployeeOpenEnrollmentBenefitPlanIdNo	int		10	0	no
EmployeeOpenEnrollmentIdNo	int		10	0	yes
BenefitOpenEnrollmentIdNo	int		10	0	yes
hBePlanLogicalPrimaryKey	varchar	15			no
EmployeeEnrolledInd	bit				no
EmployeeElectionRequirementIdNo	int		10	0	yes
EmployeeElectionOptionIdNo	int		10	0	yes
EmployeeElectionAmountPercent	decimal	9	14	2	yes
WaiveInd	bit				no
DeleteInd	bit				no
EmployeeCost	decimal	9	14	2	yes
EmployerContribution	decimal	9	14	2	yes

tEMPLOYEE_OPEN_ENROLLMENT_BENEFIT_PLANS

MonthlyCost	decimal		14	2	yes
FrequencyDescription	nvarchar	50			yes
EmployeeOpenEnrollmentBenefitPlanTimestamp	binary				no

tEMPLOYEE_OPEN_ENROLLMENT_BENEFIT_PLAN_ANSWERS

Name	Type	Length	Precision	Scale	Nullable
EmployeeOpenEnrollmentBenefitPlanIdNo	Int		10		no
BenefitElectionPlanQuestionIdNo	Int		10		no
EmployeeOpenEnrollmentBenefitPlanAnswer	Char	100			yes
EmployeeOpenEnrollmentBenefitPlanAnswerTimestamp	binary		8		no

tEMPLOYEE_OPEN_ENROLLMENT_DEPENDENTS

Name	Type	Length	Precision	Scale	Nullable
EmployeeOpenEnrollmentDependentIdNo	int		10	0	no
EmployeeOpenEnrollmentBenefitPlanIdNo	int		10	0	yes
DependentElectionRequirementIdNo	int		10	0	yes
DependentElectionOptionIdNo	int		10	0	yes
DependentElectionAmountPercent	decimal	9	14	2	yes
hDependLogicalPrimaryKey	varchar	12			no
EmployeeOpenEnrollmentDependent Timestamp	binary				no

tEMPLOYEE_OPEN_ENROLLMENTS

Name	Type	Length	Precision	Scale	Nullable
EmployeeOpenEnrollmentIdNo	int		10	0	no
BenefitOpenEnrollmentIdNo	int		10	0	yes
UserIdNo	int		10	0	yes
EmployeeOpenEnrollmentStatusIdNo	int		10	0	yes
EmployeeApprovedDate	datetime				yes

tER_CODE_TRANSLATIONS

Name	Type	Length	Precision	Scale	Nullable
CodeTranslationIdNo	int		10		no
CodeTranslationType	varchar	2			no
CodeAlpha	varchar	50			yes
Ranking	int		10		yes
Country	varchar	10			yes
CodeTranslation	varchar	100			no
CodeTranslationTimestamp	binary				no

tER_CODE_TYPES

Name	Type	Length	Precision	Scale	Nullable
CodeType	varchar	2			no
CodeTypeDescription	varchar	50			no
UseCodeAlphaColumn	bit				no
CodeAlphaMaxLength	int		10		no
UseRankingColumn	bit	1			no
UseCountryColumn	bit	1			no
CodeDescriptionMaxLength	int		10		no
Country	varchar	10			no
IsSystem	bit	1			no
CodeTypeTimestamp	binary				no

tER_APPLICANT__NOTES

Name	Type	Length	Precision	Scale	Nullable
NoteIdNo	int		10		no
ApplicantIdNo	int		10		no
NoteDateTime	datetime				no
Notes	text				no
AuthorIdNo	int				no
FollowUpDate	datetime				yes
NoteTimestamp	timestamp				no

tER_APPLICANT_CONVICTION_NOTES

Name	Type	Length	Precision	Scale	Nullable
ApplicantIdNo	int				no
ConvictionNotes	text				yes
ConvictionNotesTimeStamp	binary				no

tER_APPLICANT_EMAIL_TRACKING

Name	Type	Length	Precision	Scale	Nullable
EmailTrackingIdNo	int				no
ApplicantIdNo	int				no
FromEmailAddress	nvarchar	100			yes
ToEmailAddress	nvarchar	100			yes
EmailSubject	nvarchar	100			yes
Description	text				no
EmailTrackingTimeStamp	binary				no

tER_APPLICANT__SKILLS

Name	Type	Length	Precision	Scale	Nullable
ApplicantSkillIdNo	int				no
ApplicantIdNo	int				no
SkillCodeIdNo	int				no
Years	decimal		14	5	yes
Comments	varchar	1000			no
SkillTimestamp	binary				no

tER_APPLICANT__TRACKING

Name	Type	Length	Precision	Scale	Nullable
TrackingIdNo	int				no
ApplicantIdNo	int				no
EventIdNo	int				no
TargetObjectOIDSerialization	varchar	255			no
Description	varchar	512			no
ChangedByName	varchar	64			no
TrackingDateTime	datetime				no
TrackingTimeStamp	binary				no

tER_APPLICANTS

Name	Type	Length	Precision	Scale	Nullable
ApplicantIdNo	int				no
UserIdNo	int				yes
LogonPassword	varchar	25			yes
SSN	varchar	11			yes
SIN	varchar	11			yes
FirstName	varchar	14			no
LastName	varchar	25			no
MiddleInitial	varchar	15			yes
Gender	varchar	1			yes
Address1	varchar	28			yes
Address2	varchar	28			yes
City	varchar	20			yes
StateIdNo	int				yes
Zip	varchar	10			yes
County	varchar	15			yes
HomePhoneNumber	varchar	13			no
WorkPhoneNumber	varchar	13			yes
WorkPhoneNumberExtension	varchar	10			yes
CellPhoneNumber	varchar	13			yes

tER_APPLICANTS					
FaxNumber	varchar	13			yes
Email	varchar	64			yes
CareerLevelIdNo	int				yes
EducationLevelIdNo	int				yes
CreationDate	datetime				no
RevisedDate	datetime				no
SalaryDesired	decimal		14	5	yes
Age18OrOlder	bit				no
ConvictedCriminal	bit				no
CitizenshipIdNo	int				yes
WorkPermit	bit				no
OtherWorkEligibility	varchar	255			yes
VietnamVet	bit				no
DisabledVet	bit				no
OtherProtectedVet	bit				no
MilitaryIdNo	int				yes
DateAvailable	datetime				yes
Aboriginal	bit				yes
AboriginalIdNo	int				yes
Minority	bit				yes
MinorityIdNo	int				yes
EthnicIdNo	int				yes
BankruptcyDeclared	bit				no
WillingToTakeDrugTest	bit				no
Disabled	bit				yes
DisabilityIdNo	int				yes
ArchiveInd	bit				no
CountryIdNo	int				yes
ArmedForcesServiceMedalVet	bit	1			no
CampaignVeteran	bit	1			no
EligibleToWork	bit	1			
ApplicantTimestamp	binary				no

tER_APPLICATIONS

Name	Type	Length	Precision	Scale	Nullable
AcceptDate	datetime				yes
ApplicantIdNo	int				no
ApplicationIdNo	int				no
ApplicationTimestamp	binary				no
BackgroundCheckIdNo	int				yes
CareerLevelIdNo	int				yes
CMAIdNo	int				yes
ContactAtWork	bit				no
CurrencyTypeIdNo	int				yes
DateReceived	datetime				yes
EmployeeStartDate	datetime				yes
OfferDate	datetime				yes
OfferPosition	varchar	100			yes
PayFrequencyIdNo	int				yes
QualificationIdNo	int		10	0	no
ReferralSourceIdNo	int				yes
ReferralUserIdNo	int				yes
ReferralYearsOfAcquaintance	varchar	15			yes
RejectDate	datetime				yes
RejectReasonIdNo	int				yes
Relocate	bit				no
RequisitionIdNo	int				yes
ResumeText	text				yes
SalaryOffered	decimal		14	5	yes
SalaryRequested	decimal		14	5	yes
StatusDate	datetime				yes
StatusIdNo	int				no
TestResult	varchar	32			yes
Travel	bit				no
TravelAmountIdNo	int				yes
YearsOfRelevantWorkExperience	decimal		14	5	yes

tER_APPLICATION_ANSWERS

Name	Type	Length	Precision	Scale	Nullable
ApplicationAnswersIdNo	int				no
ApplicationQuestionIdNo	int				no
AnswerText	varchar	1000			no
ApplicationAnswersTimestamp	binary				no

tER_APPLICATION_DOCUMENTS

Name	Type	Length	Precision	Scale	Nullable
ApplicationDocumentIdNo	int				no
ApplicationIdNo	int				no
Description	varchar	255			no
MimeType	varchar	255			no
Document	Image				no
ApplicationDocumentTimestamp	binary				no

tER_APPLICATION_EMPLOYMENT_TYPES

Name	Type	Length	Precision	Scale	Nullable
ApplicationIdNo	int				no
EmploymentTypeIdNo	int				no
ApplicationEmploymentTypeTimestamp	binary				no

tER_APPLICATION_NOTES

Name	Type	Length	Precision	Scale	Nullable
NoteIdNo	int				no
AuthorIdNo	int				no
ApplicationIdNo	int				no
NoteDateTime	datetime				yes
Note	nvarchar	4000			no
Subject	nvarchar	60			no
NoteTimestamp	binary				no

tER_APPLICATION_QUESTIONS

Name	Type	Length	Precision	Scale	Nullable
ApplicationQuestionIdNo	int				no
ApplicationIdNo	int				no
QuestionSeqNo	int				no
Question	varchar	255			no
QuestionType	int				no
QuestionTypeValues	varchar	1000			yes
Required	bit				no
Inactive	bit				no
IsGlobalQuestion	bit				no
ApplicationQuestionsTimestamp	binary				no

tER_APPLICATION_RESUME

Name	Type	Length	Precision	Scale	Nullable
ApplicationIdNo	int				no
Resume	test				no
ResumeTimeStemp	binary				no

tER_APPLICANT_CONVICTION_NOTES

Name	Type	Length	Precision	Scale	Nullable
ApplicantIdNo	Int	10			no
ConvictionNotes	Char	2147483647			yes
ConvictionNotesTimeStamp	binary	8			no

tER_APPLICANT_NOTES

Name	Type	Length	Precision	Scale	Nullable
NoteIdNo	Int	10			no
ApplicantIdNo	Int	10			no
NoteDateTime	Date	8			no
Notes	Char	2147483647			no
AuthorIdNo	Int	10			no
FollowUpDate	DateTime				yes
NoteTimestamp	binary	8			no

tER_APPLICANT_SKILLS

Name	Type	Length	Precision	Scale	Nullable
ApplicantSkillIdNo	Int	10			no
ApplicantIdNo	Int	10			no
SkillCodeIdNo	Int	10			no
Years	Numeric		14	5	yes
Comments	Char	1000			no
SkillTimestamp	binary	8			no

tER_APPLICANT_TRACKING

Name	Type	Length	Precision	Scale	Nullable
TrackingIdNo	Int	10			no
ApplicantIdNo	Int	10			no
EventIdNo	Int	10			no
TargetObjectOIDSerialization	Char	255			no
Description	Char	512			no
ChangedByName	Char	64			no
TrackingDateTime	DateTime				no

tER_APPLICANT_TRACKING

TrackingTimeStamp	binary	8			no

tER_DOCUMENT_DATA

Name	Type	Length	Precision	Scale	Nullable
DocumentIdNo	int				no
ApplicationIdNo	int				no
FirstName	varchar	50			yes
LastName	varchar	50			yes
MiddleName	varchar	50			yes
Address1	varchar	50			yes
Address2	varchar	50			yes
City	varchar	50			yes
State	varchar	50			yes
PostalCode	varchar	50			yes
County	varchar	50			yes
Country	varchar	50			yes
Email	varchar	100			yes
PositionTitle	varchar	50			yes
CompanyName	varchar	50			yes
Signature	varchar	1000			yes
DataDate	varchar	50			yes
DocumentDataTimestamp	binary				no

tER_DOCUMENTS

Name	Type	Length	Precision	Scale	Nullable
DocumentIdNo	int				no
TemplateIdNo	int				no
Version	int				no
SignatureBlockIdNo	int				yes
DocumentTimestamp	binary				no

tER_DOCUMENT_TEMPLATES

Name	Type	Length	Precision	Scale	Nullable
TemplateIdNo	int				no
Description	varchar	255			no
IsSystemTemplate	bit				no
DocumentTemplateTimestamp	binary				no

tER_DOCUMENT_TEMPLATE_VERSIONS

Name	Type	Length	Precision	Scale	Nullable
TemplateIdNo	int				no
Version	int				no
Document	binary	2147483647			no
DocumentTemplateVersionTimestamp	binary				no

tER_EDUCATION

Name	Type	Length	Precision	Scale	Nullable
EducationIdNo	int				no
ApplicantIdNo	int				no
DegreeIdNo	int				no
EducationLevelIdNo	int				yes
MajorIdNo	int				yes
GPA	decimal		14	5	yes
Graduate	bit				no
YearGraduated	int				yes
School	varchar	255			yes
Address	varchar	255			yes
NumberOfYears	decimal		14	5	yes
EducationTimestamp	binary				no

tER_INTERVIEW_SCHEDULES

Name	Type	Length	Precision	Scale	Nullable
InterviewScheduleIdNo	int				no
RequisitionIdNo	int				no
ApplicantIdNo	int				no
InterviewStatusIdNo	int				no
InterviewHostIdNo	int				no
InterviewTopic	varchar	50			no
InterviewStartDateTime	datetime				no
InterviewEndDateTime	datetime				no
InterviewLocationIdNo	int				yes
InterviewerIdNo	int				no
InterviewNotes	varchar	1000			yes
AttachResume	bit				no
AttachQuestionaire	bit				no
InterviewScheduleTimestamp	binary				no

tER_EMAIL_TEMPLATES

Name	Type	Length	Precision	Scale	Nullable
TemplateIdNo	int				no
TypeIdNo	int				no
Title	varchar	255			no
Subject	varchar	255			no
EmailBody	text				yes
RevisedDate	datetime				no
EmailTemplateTimestamp	binary				no

tER_JOB_LOCATIONS

Name	Type	Length	Precision	Scale	Nullable
JobLocationIdNo	int				no
Description	varchar	50			no
City	varchar	40			no
StateIdNo	int				no
Zip	varchar	10			no
CountryIdNo	int				no
JobLocationTimestamp	binary				no

tER_PREVIOUS_EMPLOYERS

Name	Type	Length	Precision	Scale	Nullable
PreviousEmployerIdNo	int				no
ApplicantIdNo	int				no
CurrentEmployer	bit				no
EmployerName	varchar	255			no
Address1	varchar	28			yes
Address2	varchar	28			yes
City	varchar	20			yes
StateIdNo	int				yes
Zip	varchar	10			yes
PhoneNumber	char	13			yes
EmployedFrom	datetime				yes
EmployedTo	datetime				yes
Salary	decimal		14	5	no
CurrencyIdNo	int				no
SalaryFrequencyIdNo	int				no
Supervisor	varchar	255			yes
ContactSupervisor	bit				no
JobTitle	varchar	255			yes
JobDuties	varchar	255			yes

tER_PREVIOUS_EMPLOYERS

ReasonForLeaving	varchar	255			yes
PreviousEmployerTimestamp	binary				no

tER_REPORT_CRITERIA

Name	Type	Length	Precision	Scale	Nullable
ReportIdNo	int				no
ReportCriteriaSeqNo	int				no
UserIdNo	int				no
ReportCriteriaName	varchar	30			no
ReportCriteriaValue	varchar	50			no
ReportCriteriaTimestamp	binary				no

tER_REQUISITION_ADDITIONAL_REQUIREMENTS

Name	Type	Length	Precision	Scale	Nullable
RequisitionIdNo	int				no
AdditionalRequirements	varchar	2147483647			yes
RequisitionAdditionalRequirementsTimeStamp	binary				no

tER_REQUISITION_APPROVERS

Name	Type	Length	Precision	Scale	Nullable
RequisitionIdNo	int				no
Sequence	int				no
UserIdNo	int				no
ActionIdNo	int				no
StatusIdNo	int				yes
IsGlobalApprover	bit				no
Comment	varchar	1000			yes
RequisitionApproverIdNo	int				no
RequisitionApproverTimeStamp	binary				no

tER_REQUISITION_COSTS

Name	Type	Length	Precision	Scale	Nullable
RequisitionCostIdNo	int				no
RequisitionIdNo	int				no
TypeIdNo	int				no
ServiceIdNo	int				yes
RequisitionCostDate	datetime				yes
BudgetedCost	decimal		14	5	yes
ActualCost	decimal		14	5	yes

tER_REQUISITION_COSTS

RequisitionCostTimestamp	binary				no

tER_REQUISITION_DOCUMENTS

Name	Type	Length	Precision	Scale	Nullable
RequisitionDocumentIdNo	int				no
RequisitionIdNo	int				no
Description	varchar	255			no
MimeType	varchar	255			no
Document	image				no
RequisitionDocumentTimestamp	binary				no

tER_REQUISITION_NOTES

Name	Type	Length	Precision	Scale	Null able
RequisitionNoteIdNo	int				no
RequisitionIdNo	int				no
NoteDateTime	datetime				no
Subject	varchar	255			yes
Notes	text				no
AuthorIdNo	int				no
RequisitionNoteTimestamp	binary				no

tER_REQUISITION_POSITIONS

Name	Type	Length	Precision	Scale	Null able
RequisitionIdNo	int				no
PositionSeqNo	int				no
StatusIdNo	int				no
DateFilled	datetime				yes
ClosedReasonIdNo	int				yes
DateClosed	datetime				yes
FilledByApplicantIdNo	int				yes
RequisitionPositionTimestamp	binary				no

tER_REQUISITION_QUESTIONS

Name	Type	Length	Precision	Scale	Nullable
RequisitionQuestionIdNo	int				no
RequisitionIdNo	int				no
QuestionSeqNo	int				no
Question	varchar	255			no

tER_REQUISITION_QUESTIONS

QuestionType	int				no
QuestionTypeValues	varchar	1000			yes
Required	bit				no
Inactive	bit				no
IsGlobalQuestion	bit				no
RequistionQuestionsTimestamp	binary				no

tER_REQUISITION_SKILLS

Name	Type	Length	Precision	Scale	Nullable
RequisitionIdNo	int				no
SkillIdNo	int				no
RequiredSkill	int				no
RequisitionSkillTimestamp	binary				no

tER_REQUISITION_TRACKING

Name	Type	Length	Precision	Scale	Nullable
TrackingIdNo	int				no
RequisitionIdNo	int				no
EventIdNo	int				no
TargetObjectOIDSerialization	varchar	255			no
Description	varchar	512			no
ChangedByName	varchar	64			no
TrackingDateTime	datetime				no
TrackingTimeStamp	binary				no

tER_REQUISITIONS

Name	Type	Length	Precision	Scale	Nullable
RequisitionIdNo	int				no
IsTemplate	bit				no
RequisitionID	varchar	20			no
RequisitionDescription	varchar	25			no
CompanyIdNo	int				no
StatusIdNo	int				no
ReasonIdNo	int				no
ExposureIdNo	int				no
DateCreated	datetime				yes
DateOfOpening	datetime				yes
DateClosed	datetime				yes
ClosedReasonIdNo	int				yes
ApplicationDeadline	datetime				yes

tER_REQUISITIONS

RecruiterIdNo	int				no
HiringManagerIdNo	int				no
SupervisorIdNo	int				yes
JobSearchKeywords	varchar	255			yes
MinYearsExperienceFrom	decimal		14	5	yes
MinYearsExperienceTo	decimal		14	5	yes
MinDegreeIdNo	int				yes
MinMajorIdNo	int				yes
PreferredYearsExperienceFrom	decimal		14	5	yes
PreferredYearsExperienceTo	decimal		14	5	yes
PreferredDegreeIdNo	int				yes
PreferredMajorIdNo	int				yes
JobLocationIdNo	int				yes
JobCategoryIdNo	int				yes
JobCode	varchar	50			no
JobCodeDescription	varchar	255			yes
JobCodeEmployeeTypeCode	varchar	50			yes
JobCodeEmployeeTypeCodeDescription	varchar	255			yes
JobCodeEEOClassCode	varchar	50			yes
JobCodeEEOClassCodeDescription	varchar	255			yes
JobCodeEEOGCode	varchar	50			yes
JobCodeEEOGCodeDescription	varchar	255			yes
JobCodeNOCCode	varchar	50			yes
JobCodeNOCCodeDescription	varchar	255			yes
JobCodeSalaryGradeCode	varchar	50			yes
JobCodeSalaryGradeCodeDescription	varchar	255			yes
JobCodeMinSalary	decimal		14	5	yes
JobCodeMidSalary	decimal		14	5	yes
JobCodeMaxSalary	decimal		14	5	yes
JobCodeSummary	varchar	255			yes
JobCodeRequirements	varchar	255			yes
TargetedSalary	decimal		14	5	yes
TargetedSalaryCurrencyIdNo	int				yes
ShiftIdNo	int				yes
EmploymentTypeIdNo	int				yes
BudgetedPosition	bit				no
BudgetedCostToFill	decimal		14	5	yes
PostRequisition	bit				no
JobBoardIdNo	int				no
PostingDate	datetime				yes
BackgroundCheck	bit				no

tER_REQUISITIONS

CMAIdNo	int				yes
IndustrialSectorIdNo	int				yes
TestIdNo	int				yes
EEOReporting	bit				yes
EEReporting	bit				yes
StatusDate	datetime				yes
DirectIndirectIdNo	int				yes
RequisitionTimestamp	binary				no

tER_SIGNATURE_BLOCKS

Name	Type	Length	Precision	Scale	Nullable
SignatureBlockIdNo	int				no
Description	varchar	40			no
SignatureBlock	varchar	1000			no
SignatureBlockTimestamp	binary				no

tER_TESTS

Name	Type	Length	Precision	Scale	Nullable
TestIdNo	int				no
Type	varchar	255			no
Name	varchar	255			no
Description	varchar	1000			yes
PassingPercentage	decimal		14	5	yes
NumberCorrect	decimal		10	0	yes
TestTimestamp	binary				no

tFUNCTIONAL_AREA_MENU_ITEMS

Name	Type	Length	Precision	Scale	Nullable
FunctionalAreaIdNo	int		10	0	no
MenuItemIdNo	int		10	0	no
FunctionalAreaMenuItemTimestamp	binary				no

tFUNCTIONAL_AREA_WORKFLOW_TYPE_EXCEPTIONS

Name	Type	Length	Precision	Scale	Nullable
FunctionalAreaIdNo	int		10	0	no
FunctionalAreaWorkflowTypeIdNo	int		10	0	no
FunctionalAreaWorkflowTypeExceptionTimestamp	binary				no

tFUNCTIONAL_AREAS

Name	Type	Length	Precision	Scale	Nullable
FunctionalAreaIdNo	int		10	0	no
FunctionalAreaName	varchar	35			no
FunctionalAreaViewOnlyInd	bit				no
FunctionalAreaAuditInd	bit				no
FunctionalAreaESSProductIdNo	int		10	0	no
FunctionalAreaSuiteProductIdNo	int		10	0	no
FunctionalAreaTreeIndicatorIDNo	Int				no
FunctionalAreaTimestamp	binary				no

tLIFE_EVENT_PLAN_GROUPS

Name	Type	Length	Precision	Scale	Nullable
LifeEventPlanGroupIdNo	int		10	0	no
EnrollInd	bit				no
ChangePlansInd	bit				no
ChangeCurrentPlanElectionsInd	bit				no
ChangeBeneficiariesInd	bit				no
LifeEventIdNo	int		10	0	yes
BenefitPlanGroupIdNo	int		10	0	yes
LifeEventPlanGroupTimestamp	binary				no

tLIFE_EVENTS

Name	Type	Length	Precision	Scale	Nullable
LifeEventIdNo	int		10	0	no
Description	char	50			no
EventType	int		10	0	no
NumberOfDays	int		10	0	no
BenefitEffectiveOn	int		10	0	no
PersonalPageInd	bit				no
AddressPageInd	bit				no
DependentBeneficiaryPageInd	bit				no
EnrollmentPageInd	bit				no
ExitPageInd	bit				no
WelcomePageText	varchar	500			yes
CustomReference1IdNo	int		10	0	yes
CustomReference2IdNo	int		10	0	yes
CustomReference3IdNo	int		10	0	yes
CustomReference4IdNo	int		10	0	yes
LifeEventTimestamp	binary				no

tMENU_HIERARCHY

Name	Type	Length	Precision	Scale	Nullable
MenuItemIdNo	int		10	0	no
ParentMenuItemIdNo	int		10	0	no
MenuItemOrder	smallint		5	0	no
MenuHierarchyTimestamp	binary				no

tMENU_ITEM_CUSTOM_REFERENCES

Name	Type	Length	Precision	Scale	Nullable
MenuItemCustomReferenceIdNo	int		10	0	no
MenuItemIdNo	int		10	0	no
CompanyIdNo	int		10	0	no
CustomReferenceIdNo	int		10	0	no
MenuItemCustomReferenceTimestamp	binary				no

tMENU_ITEM_LINKS

Name	Type	Length	Precision	Scale	Nullable
MenuItemIdNo	int		10	0	no
MenuItemLinkIdNo	int		10	0	no
MenuItemLinkOrder	tinyint		3	0	no
MenuItemLinkTargetWindowIdNo	int		10	0	no
MenuItemLinkTimestamp	binary				no

tMENU_ITEMS

Name	Type	Length	Precision	Scale	Nullable
MenuItemIdNo	int		10	0	no
MenuItemName	varchar	50			no
MenuItemURL	varchar	150			yes
MenuItemHelpURL	varchar	50			yes
MenuItemSuiteProductIdNo	int		10	0	yes
MenuItemGraphicFilename	varchar	50			yes
MenuItemTargetWindowIdNo	int		10	0	no
MenuItemCustomReferenceIdNo	int		10	0	yes
MenuItemTimestamp	binary				no

tNOTIFICATIONS

Name	Type	Length	Precision	Scale	Nullable
NotificationIdNo	int		10	0	no
NotificationTypeIdNo	int		10	0	no
FunctionalAreaIdNo	int		10	0	yes

tNOTIFICATIONS

MenuItemIdNo	int		10	0	yes
MessageCenterOverridePrefix	varchar		35		
NotificationStatusIdNo	int		10	0	yes
NotificationCreationDate	datetime				no
NotificationCompanyIdNo	int		10	0	yes
NotificationCreatingUserIdNo	int		10	0	yes
NotificationReminderEmployeeKey	varchar	12			yes
NotificationReminderTypeIdNo	int		10	0	yes
NotificationReceivingUserIdNo	int		10	0	yes
NotificationReceivingRoleIdNo	int		10	0	yes
NotificationActedOnDate	datetime				yes
NotificationActedOnUserIdNo	int		10	0	yes
NotificationMessage	varchar	1000			no
NotificationApprovalMessage	varchar	1000			yes
NotificationApprovalEmailMessage	varchar	1000			yes
NotificationRequestIdNo	int		10	0	yes
NotificationApprovalNotificationIdNo	int		10	0	yes
NotificationTimestamp	binary				no

tREGISTRATION

Name	Type	Length	Precision	Scale	Nullable
RegistrationIdNo	int		10	0	no
CustomerNo	varchar	25			yes
CompanyName	varchar	50			yes
Salutation	varchar	5			yes
FirstName	varchar	25			yes
LastName	varchar	25			yes
Title	varchar	50			yes
PhoneNumber	varchar	25			yes
EmailAddress	varchar	50			yes
SendEmails	bit				no
ScanSystem	bit				no
Registered	bit				no
RegisteredVersion	varchar	10			yes
RegistrationAttempt	int		10	0	no
RegistrationTimestamp	binary				no

tROLE_MENU_ITEMS

Name	Type	Length	Precision	Scale	Nullable
RoleIdNo	int		10	0	no

tROLE_MENU_ITEMS

MenuItemIdNo	int		10	0	no
RoleMenuItemTimestamp	binary				no

tROLES

Name	Type	Length	Precision	Scale	Nullable
RoleIdNo	int		10	0	no
RoleName	varchar	35			no
RoleESSProductIdNo	int		10	0	no
RoleSuiteProductIdNo	int		10	0	no
RoleAdministratorInd	bit				no
RoleTimestamp	binary				no

tSTAGED_CHANGES

Name	Type	Length	Precision	Scale	Nullable
StagedChangesIdNo	int		10	0	no
BusinessObjectName	varchar	100			no
BaseBusinessObjectName	varchar	50			no
PrimaryKeyColumn1Value	varchar	50			no
PrimaryKeyColumn2Value	varchar	50			yes
MenuItemIdNo	int		10	0	no
StagedChangesTypeIdNo	int		10	0	no
StagedChangesDateTime	datetime				no
StagedChangesTimestamp	binary				no

tSTAGED_CHANGES_DETAILS

Name	Type	Length	Precision	Scale	Nullable
StagedChangesIdNo	int		10	0	no
StagedChangesDetailsSeqNo	int		10	0	no
StagedChangesDetailsAttributeName	varchar	50			no
StagedChangesDetailsOldValue	varchar	256			yes
StagedChangesDetailsNewValue	varchar	256			yes
StagedChangesDetailsTimestamp	binary				no

tSYSTEM_SETTINGS

Name	Type	Length	Precision	Scale	Nullable
SystemSettingsIdNo	int		10	0	no
SystemSettingsDescription	varchar	50			yes
SystemSettingsValue	varchar	1000			yes
SystemSettingsTimestamp	binary				yes

tTIME_OFF_REQUESTS

Name	Type	Length	Precision	Scale	Nullable
TimeOffRequestIdNo	int		10	0	no
UserIdNo	int		10	0	no
TimeOffRequestPlanLogicalPrimaryKey	varchar	100			no
TimeOffRequestFirstDayOff	datetime				no
TimeOffRequestLastDayOff	datetime				no
TimeOffRequestTotalHours	decimal	9	10	2	no
TimeOffRequestStartTime	varchar	8			yes
TimeOffRequestEndTime	varchar	8			yes
TimeOffRequestComments	varchar	35			yes
TimeOffRequestStatusIdNo		4	10	0	no
TimeOffRequestManagerComments	varchar	5000			yes
TimeOffRequestReasonCode	varchar	15			yes
TimeOffRequestTimestamp		8			no

tUSER_COMPANIES

Name	Type	Length	Precision	Scale	Nullable
UserIdNo	int		10	0	no
CompanyIdNo	int		10	0	no
UserCompanyTimestamp	binary				no

tUSER_LOGIN_HISTORY

Name	Type	Length	Precision	Scale	Nullable
UserLoginHistoryIdNo	int		10	0	no
UserIdNo	int		10	0	no
UserLoginUnsuccessfulInd	bit				no
UserLoginHistoryDate	datetime				no
UserLoginHistoryTimestamp	binary				no

tUSER_PASSWORD_HISTORY

Name	Type	Length	Precision	Scale	Nullable
UserPasswordHistoryIdNo	int		10	0	no

tUSER_PASSWORD_HISTORY

UserIdNo	int		10	0	no
UserPassword	varchar	25			no
UserPasswordHistoryDate	datetime				no
UserPasswordHistoryTimestamp	binary				no

tUSER_ROLES

Name	Type	Length	Precision	Scale	Nullable
UserIdNo	int		10	0	no
RoleIdNo	int		10	0	no
UserRoleTimestamp	binary				no

tUSERS

Name	Type	Length	Precision	Scale	Nullable
UserIdNo	int		10	0	no
UserSageLogicalPrimaryKey	varchar	12			no
UserName	varchar	25			no
UserPassword	varchar	25			no
UserPasswordChangeDate	Datetime				no
UserUnsuccessfulLoginCount	tinyint				no
UserLockoutInd	Bit				no
UserDelegateUserIdNo	Int				no
UserHasHiringManagerMessagesAccess	bit				no
UserHasHiringManagerRequisitionsAccess	bit				no
UserHasHiringManagerViewsAccess	bit				no
UserTimestamp	binary				no
UserHiringAssistantIdNo	int		10	0	

tW4

Name	Type	Length	Precision	Scale	Nullable
Id	int				no
UserIdNo	int				no
DateSigned	datetime				no
ApprovalStatus	int				no
FirstName	varchar	100			no
LastName	varchar	50			no
Address1	varchar	50			yes
Address2	varchar	50			yes
City	varchar	50			yes
State	varchar	50			yes
ZipCode	varchar	50			yes

tW4						
ExtraAmount	decimal		14	5		yes
SocialSecurityNumber	varchar	50				no
FilingStatus	varchar	50				no
Exemptions	int					no
Exempt	int					no
LastNameDiffers	int					yes
FormFileName	varchar	100				no
OMBNumber	varchar	50				no
FileYear	varchar	50				no
CatalogNumber	varchar	50				no