



Sage XRT Business Exchange

Version 12.4.100

Technical Guidelines



Contents

Environments.....	3
Compatibility Chart	3
Flow Opening.....	6
Additional Guidelines	7
View & Sign.....	7
Virtualization	7
Installation with Office	7
SAML V2	7
Web Application Firewall	7
IIS	8
Database Unicode Management.....	8
Windows Unicode Management.....	9
Managing Double Authentication	9
OpenJDK	9
Activation of Database Encryption.....	9
Microsoft SQL Server	10
Oracle	11

Environments

Compatibility Chart

Environment	Prerequisite Type	Prerequisite
Sage Software	These prerequisites are designed for	Sage XRT Business Exchange 12.4.100 (SXBE) Sage XRT Common Services 5.1.100 (SCS) Sage XRT Bank Format Library 4.6.100 Sage View & Sign 3.1 Sage EIDSign 3.0
	Build No.	12.4.100.1910
	Available Languages	French - English - Spanish
Client Station	Operating System	Windows 10 64 bits
	Minimum Sizing	Processor: 2Ghz Bi-pro/Dual Core RAM: 8 GB - Disk Space: 2GB
	Other required products	Microsoft .NET Framework 4.8 minimum SGBD Client Microsoft.IIS.PowerShell
	Optional products	JRE 8.0.1410 (64-bit) or OpenJDK 13.0, see section OpenJDK Required for processing XML files on the station (edit, convert, generate).
	Microsoft OS validated browsers	Microsoft Windows 10: <ul style="list-style-type: none"> • Edge 42 and later • Chrome 70 and later • Firefox 63 and later •
	MAC OS validated browsers	MAC OS X Mojave, Catalina: <ul style="list-style-type: none"> • Safari • Chrome 70 and later • Firefox 63 and later

Environments

Environment	Prerequisite Type	Prerequisite
Application and Publication Server	Operating Systems	Windows Server 2016 Windows Server 2019 Windows 10 64 bits
	Other Required Components	Microsoft .NET Framework 4.8 minimum Internet Information Service: IIS 10. Element <ServerSideInclude> must be installed (See IIS additional guidelines) Java Execution Environment: JRE 8.0.1410 (64-bit) or OpenJDK 13.0 (see section OpenJDK)
	Minimum Sizing	Processor: 4 vCPU 2Ghz or equivalent RAM: 8 GB Disk Space: 3 GB (Programs)
Server and Database	Operating Systems	Windows Server 2016 Windows Server 2019
	Minimum Sizing	Processor: 4 vCPU 2Ghz or equivalent RAM: 8 GB
	Compatible Microsoft Databases	SQL Server 2016 SQL Server 2017 SQL Server 2019
	64-bit Microsoft DB Connectivity	Minimum MS-SQL Components SQL Server 2016: <ul style="list-style-type: none"> Client Connectivity Tools Complete Management Tools
	Compatible Oracle Databases	Oracle 12c Oracle 18c Oracle 19c
		Important! Version 12.1.0.2 brings regressions preventing the operation of some options from SXBE 12.0, including the optimization of the signature station.
Important! When migrating from SXBE 11 to SXBE 12, due to Unicode management, the size of the database increases significantly (up to double at most).	64-bit Oracle Connectivity	Oracle client (x64) 12.2.0.1.0 minimum for 12c Oracle client (x64) 18.3 for 18c Oracle client (x64) 19.3 for 19c
		Oracle Components to install: <ul style="list-style-type: none"> SQL*Plus Oracle Net Oracle Connection Manager Oracle ODBC drivers Oracle Provider for OLE DB

Environments

Environment	Prerequisite Type	Prerequisite
Virtualization and Publication Tool See section Additional Guidelines	Remote Desktop Services	Windows Server 2016 and 2019
	XenApp	V6 and later
	vSphere	V5 and later
	Hyper-V	Windows Server 2016 and 2019
Sage View & Sign (smartphones & tablets) See section Additional Guidelines	Operating Systems	Apple: iOS 12.2 minimum Android: Android 5.1 minimum
	Validated Terminals	Apple: <ul style="list-style-type: none"> • iPhone 6 • iPhone 7 • iPhone 10

Flow Opening

Source to Target	Port No.	Modifiable	Flow Details
Rich Client to Database	1434 (Oracle)	Yes	The setup can be adapted so that only one port is open, with another value than the default one.
	1521 (SQL)		
Rich Client to Files Server (SXBE Files)	SMB	No	Data Exports/Imports, bank format files to edit, application logs May include the following ports: 137, 138, 139 and 445 May be used for remote files access
Rich Client to Files Server (SXBE Files)	DFS	No	Data Exports/Imports, bank format files to edit, accounting files, remote sharing Ports for domain controller: 135, 137, 138, 139, 389 and 445 Ports for other server: 135, 137, 138, 139 and 445
Rich Client to Files Server (other Files)	SMB	No	Only if files are to be exchanged with remote sharing Data Exports/Imports, bank format files to edit, application logs
Rich Client to Active Directory	MS	No	User Authentication (using class libraries from namespace System.DirectoryServices for .NET framework)
Rich Client to LDAP Server	389	Yes	Only for LDAP authentication Default ports, with editable absolute values
	636	Yes	
Rich client to SXBE servers (Registry)	139	No	Access to parameters for System Administration module
Rich client to SXBE servers (Windows Services)	135	No	Access to Windows Services (RPC)

Additional Guidelines

View & Sign

For HTTPS (TLS) operation, the web server must use a certificate issued by a trusted authority approved by the device.

Android and *iOS* do not accept auto-signed certificates.

Virtualization

Some functions linked to Bank Communication Management can only be executed on an application server.

Before any deployment, the architecture and the size of your configuration may be validated by *Sage* consultants.

EBICS TS tokens drivers must be available for bank files transfer by Electronic Signature.

Important! Virtualization may have negative impacts on the applications processing times.

Installation with Office

If your installation includes **Office**, check the versions of your *ACE ODBC* drivers.

During the installation process, **DSN CERG_TXT** 64-bit is set with driver *v°14 ACE ODBC*.

Once the installation of **Office x64** is completed, check that the driver version is correct.

SAML V2

Validated ID Providers are: **Microsoft ADFS**, **SSO Circle**.

Web Application Firewall

For several versions, measures have been set up to protect you from attacks like *XSS*, *SQL Injection* and *CSRF*.

However, we highly recommend web application firewalls (WAF) to minimize those attacks.

On this page you can find a list of WAFs:

<https://www.iis.net/downloads/category/secure>

CloudFlare does not require any deployment (<https://www.cloudflare.com/waf/>).

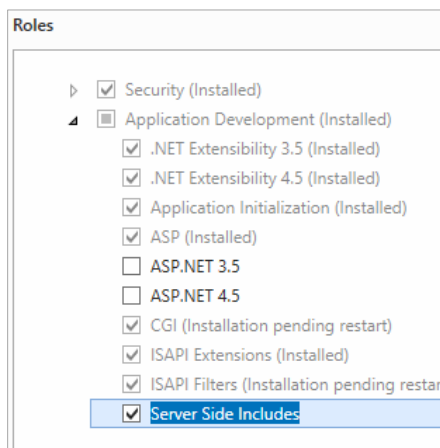
Additional Guidelines

IIS

The **<serverSideInclude>** element is not installed by default. To install this component, follow the *Microsoft* procedure below.

WINDOWS SERVER 2016

1. On the taskbar, click *Server Manager*.
2. In *Server Manager*, click the *Manage* menu, and then click *Add Roles and Features*.
3. In the *Add Roles and Features* wizard, click *Next*. Select the installation type and click *Next*. Select the destination server and click *Next*.
4. On the *Server Roles* page, expand *Web Server (IIS)*, expand *Web Server*, expand *Application Development*, and then select *Server Side Includes*. Click *Next*.



Source: <https://docs.microsoft.com/en-us/iis/configuration/system.webserver/serversideinclude>

Database Unicode Management

Sage XRT Business Exchange version 12.0 was tested and validated with **AL32UTF8** and **UTF8** code pages under **Oracle**, **Latin1_CI_AS**, **Modern_Spanish_CI_AS** and **French CI_AS** under **SQL Server**.

Important! Any modification of character set must be performed by an *Oracle* DBA or a Sage consultant. This modification has an impact on all the database schemas.

Note: When migrating from **Sage XRT Business Exchange 11** to **Sage XRT Business Exchange 12**, due to Unicode management, the size of the database increases significantly (up to double at most).

Windows Unicode Management

The reporting application processes using Unicode characters (Chinese, etc.) require the ARIAL UNICODE MS font.

This font is not installed by default on all **Windows** versions and must be used under license.

Its installation can be done through the installation of **Microsoft Office** 2010 or 2013 (32 and 64-bit) or through a specific download.

Important! **Office** 2016 and **Windows** 10 do not natively include this font.

Managing Double Authentication

Initiating double authentication requires using an application compatible with **TOTP** (smartphone or tablet).

Tested applications are:

- **FreeOTP** (*Android*)
- **Microsoft Authenticator** (*Windows Phone*)
- **Google Authenticator** (*Android, iOS*)

OpenJDK

To install **OpenJDK** instead of **Oracle Java Runtime Environment**, refer to the following document: *SCS.5.1.OpenJDK.SetupGuide_EN*.

Activation of Database Encryption

Transparent Data Encryption (**TDE**) encrypts sensitive data in the database, and protects the keys used for encryption with a certificate. This prevents anyone without the keys from using the data, but this kind of protection must be planned.

TDE actually impacts backup performance and management (backups are encrypted). The encryption key must be stored in the database to perform the relevant actions. You will not be able to open the database without this key.

Note: Tests were run on **Microsoft SQL Server 2016 TDE** and **Oracle 12c TDE**. Only **Enterprise** versions of **SQL Server** use **TDE**.

Additional Guidelines

Microsoft SQL Server

Example of **TDE** setup on **Microsoft SQL Server**:

```
// go onto MASTER
```

```
USE master;
```

```
GO
```

```
// create a passphrase
```

```
CREATE MASTER KEY ENCRYPTION BY PASSWORD = 'MyPassword defined in SCS';
```

```
GO
```

```
// create the certificate to encrypt the symmetric key
```

```
CREATE CERTIFICATE MyTDECert WITH SUBJECT = 'MyTDECert Certificate';
```

```
GO
```

```
// go onto SXBE database
```

```
USE SBE;
```

```
GO
```

```
// create the key for database encryption (for example in AES 128) and encrypt this key with  
the certificate created in MASTER
```

```
CREATE DATABASE ENCRYPTION KEY WITH ALGORITHM = AES_128 ENCRYPTION BY  
SERVER CERTIFICATE MyTDECert;
```

```
GO
```

```
// activate encryption
```

```
ALTER DATABASE TDE SET ENCRYPTION ON;
```

```
GO
```

For more information:

<https://docs.microsoft.com/en-us/sql/relational-databases/security/encryption/transparent-data-encryption>

Additional Guidelines

Oracle

Example of **TDE** setup on **Oracle**:

```
orapki wallet create -wallet "C:\app\your_user\admin\your_service\wallet" -  
auto_login -pwd "P@ssword"
```

```
ALTER SYSTEM SET ENCRYPTION KEY IDENTIFIED BY "MyPassword defined in SCS";  
  
/
```

```
CREATE TABLESPACE ENC_XRT_DATA DATAFILE  
'C:\app\your_user\oradata\your_service\ENC_XRT_DATA.dbf' SIZE 150 M  
AUTOEXTEND ON NEXT 100  
  
ENCRYPTION using 'AES192'  
  
DEFAULT STORAGE(ENCRYPT);  
  
/
```

```
CREATE TABLESPACE ENC_XRT_INDEX DATAFILE  
'C:\app\your_user\oradata\your_service\ENC_XRT_INDEX.dbf' SIZE 150 M  
AUTOEXTEND ON NEXT 100 M  
  
ENCRYPTION using 'AES192'  
  
DEFAULT STORAGE(ENCRYPT);  
  
/
```

```
ALTER USER SCS QUOTA UNLIMITED ON ENC_XRT_DATA;  
  
/
```

```
ALTER USER SCS QUOTA UNLIMITED ON ENC_XRT_INDEX;  
  
/
```

```
DECLARE  
  
    strStatement varchar2(512);  
  
    recCount INTEGER:=-1;  
  
    CURSOR code_objects IS select object_name,object_type from all_objects  
where owner='your_schema' and object_type = 'TABLE' and temporary='N';
```

Additional Guidelines

```
        code_object_rec code_objects%rowtype;
BEGIN
    FOR code_object_rec IN code_objects
    LOOP
        strStatement := 'ALTER TABLE your_schema.' ||
code_object_rec.object_name || ' MOVE TABLESPACE ENC_XRT_DATA';
        DBMS_OUTPUT.PUT_LINE (strStatement);
        EXECUTE IMMEDIATE strStatement;
    END LOOP;
END;
/

DECLARE
    strStatement varchar2(512);
    recCount INTEGER:=-1;
    CURSOR code_objects IS select object_name,object_type from all_objects
where owner='your_schema' and object_type = 'INDEX' and temporary='N';
    code_object_rec code_objects%rowtype;
BEGIN
    FOR code_object_rec IN code_objects
    LOOP
        strStatement := 'ALTER INDEX your_schema.' ||
code_object_rec.object_name || ' REBUILD TABLESPACE ENC_XRT_INDEX';
        DBMS_OUTPUT.PUT_LINE (strStatement);
        EXECUTE IMMEDIATE strStatement;
    END LOOP;
END;
/
```