

# CA Identity Suite vApp - CA Identity Governance & CA Identity Portal

## A walk-through of leveraging an external MS-SQL Database

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# Goal: Clarify the external DB requirements & execution steps

Challenge: Three (3) References for setting up the IP/IG Database for MS-SQL exist.

## 1. vApp Readme file for External Database

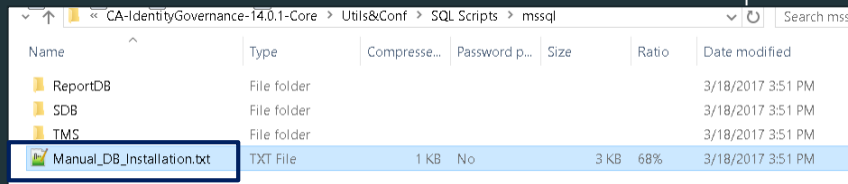
- a) Outlines suggestive DB names for IP and IG

## 2. IG manual installation readme file “Manual\_DB\_installation.txt”

- a) Defines the need for Case-Sensitive Collation for the DBs.
- b) Other Collation Notes: <https://support.ca.com/cadocs/0/g016411e.pdf>

## 3. IG/IP Bookshelf

- a) Defines the XA requirement for both MS-SQL & Oracle (but only MS-SQL needs additional steps) for WPDS DB
- b) <https://docops.ca.com/ca-identity-governance/14-1/EN/release-notes/release-notes-14-1/installation-and-upgrade-considerations>
- c) <https://docops.ca.com/ca-identity-suite/14-1/EN/upgrading/upgrading-ca-identity-suite-virtual-appliance>
- d) [https://support.ca.com/cadocs/0/CA%20Identity%20Suite%2012%206%205-ENU/Bookshelf Files/PDF/SIGMA Installation Guide.pdf](https://support.ca.com/cadocs/0/CA%20Identity%20Suite%2012%206%205-ENU/Bookshelf%20Files/PDF/SIGMA%20Installation%20Guide.pdf)
- e) J2EE Datasource for IG demonstrates need for XA-datasource (see example) for WPDS DB. XA not required for IP due to no WPDS DB
- f) WPDS Database tables/stored procedures will NOT deploy to MS-SQL Database if XA Driver & Configuration is NOT enabled. Review requirement if Workflow is required for IG use-cases.



Name	Type	Compressed	Password p...	Size	Ratio	Date modified
ReportDB	File folder					3/18/2017 3:51 PM
SDB	File folder					3/18/2017 3:51 PM
TMS	File folder					3/18/2017 3:51 PM
Manual_DB_installation.txt	TEXT File	1 KB	No	3 KB	68%	3/18/2017 3:51 PM



CA Identity Suite  
Virtual Appliance

## Configure Database

**Important:** you must perform the prerequisites listed in the [readme file](#) to complete database configuration

```
<datasource jndi-name="java:boss/datasources/jdbc/sigmadb" pool-name="sigma-ds" enabled="true">
  <connection-url>jdbc:sqlserver://192.168.242.135:1433;databaseName=IDENTITY_PORTAL_DB
  <driver>sqlserver</driver>
  <pool>
```

```
</datasource>
<xa-datasource jndi-name="java:/jdbc/WPDS" pool-name="WPDS">
  <xa-datasource-property name="URL">
    jdbc:oracle:thin:@database_srv:1521/xepdb1
  </xa-datasource-property>
  <xa-datasource-property name="User">
    WPDS
  </xa-datasource-property>
</xa-datasource>
```



# Scenario: vApp Prod/Non-Prod deployment with external MS SQL DB 2014

## **Pre-Task(s):**

1. Manually create IG DBs (as case-sensitive per IG notes; except WPDS DB)
2. Install MS-SQL XA Driver on MS-SQL Servers (per IG wiki) for WPDS DB
3. Validate XA is working with sample java program “testXA.java” or view Component Services DTC or MS-SQL ERRORLOG file.

## **Post-Task(s):**

1. Create the IG Connector in IP (If missing)
2. Create User property for UserID with the new IG Connector in IP (If missing)
3. Add Modules for use in IP

## Content/Sections:

- Pre-Tasks:
  - Create MS-SQL Databases for IP (1) and IG (4)
    - Use existing MS-SQL Database Server(s)
      - Optional: Test process/steps with free MS-SQL 2014/2017 Express Edition
    - Create a new DB login ID with Server Role = public (least privileged model)
    - Create new Databases
      - Assign ownership to the new db login ID
      - Update the collation to case-sensitivity for 3 of the 4 IG databases (per readme)
      - Optional: Tune EUREKIFY\_DB with the following MISC options:  
Allow Snapshot Isolation = True & Is Read Committed Snapshot On = True
  - Enable MS-SQL XA Configuration/Driver for IG Workflow (WPDS) DB.
    - Step 1: What is XA?
    - Step 2: How to download the XA Driver & SQL Script.
    - Step 3: Enable MS-SQL XA Configuration for DTC
    - Step 4: Copy the XA DLL File to all MS-SQL Servers
    - Step 5: Execute pre-built XA DB SQL Script
    - Step 6: Add the IG db login user to new Database Role under 'master' db
    - Step 7: Restart the MS-SQL Server's Services
    - Step 8: Validate XA driver is working
- Deploy vApp with IG/IP Configuration
  - Update IP Modules as needed



# Step 1a: Ensure that MS-SQL Database Server is TCP Enabled & Check Port is Listening (Default TCP 1433)

```
Administrator: Command Prompt

Windows IP Configuration

Ethernet adapter Ethernet0:

    Connection-specific DNS Suffix  . : localdomain
    Link-local IPv6 Address . . . . . : fe80::ad7d:ec27:1bcf:9b27%7
    IPv4 Address. . . . . : 192.168.242.135
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.242.2
```

```
Administrator: Command Prompt

C:\>netstat -an | findstr 1433

C:\>
```

BEFORE TCP LISTEN MODEL ENABLED

For testing, suggest  
downloading MS-SQL 2014 Express DB

<https://www.microsoft.com/en-US/download/details.aspx?id=42299>

Or MS SQL 2017 Express DB

<https://www.microsoft.com/en-us/sql-server/sql-server-editions-express>

Microsoft® SQL Server® 2014 Express

Select Language:

English

Download

Microsoft SQL Server 2014 Express is a powerful and reliable free data management system that delivers a rich and reliable data store for lightweight Web Sites and desktop applications.

Details

**Note:** There are multiple files available for this download. Once you click on the "Download" button, you will be prompted to select the files you need.

Version:	Date Published:
12.0.2000.8	6/25/2014
File Name:	File Size:
Express 32BIT Web64\SQLExpressR32_x86_ENU.exe	149.9 MB
Express 32BIT\SQLExpressR_x86_ENU.exe	168.4 MB
Express 64BIT\SQLExpressR_x64_ENU.exe	196.7 MB
ExpressAdv 32BIT\SQLExpressRAdv_x86_ENU.exe	1.1 GB
ExpressAdv 64BIT\SQLExpressRAdv_x64_ENU.exe	1.1 GB
ExpressAndTools 32BIT\SQLExpressRWT_x86_ENU.exe	840.8 MB
ExpressAndTools 64BIT\SQLExpressRWT_x64_ENU.exe	832.2 MB
LocalDB 32BIT\sqllocaldb.msi	26.6 MB
LocalDB 64BIT\sqllocaldb.msi	43.1 MB
MgmtStudio 32BIT\SQLManagementStudio_x86_ENU.exe	673.0 MB
MgmtStudio 64BIT\SQLManagementStudio_x64_ENU.exe	683.9 MB

Microsoft SQL Server 2014 Express is free and contains feature-rich editions of SQL Server that are ideal for learning, developing, powering desktop, web & small server applications, and for redistribution by ISVs. The SQL Server 2014 Express release includes the full version of SQL Server 2014 Management Studio. For a complete list of supported features in SQL Server Management Studio, see [Features in SQL Server Management Studio](#).

# Step 1b: Update SQL Server TCP/IP Configuration

The screenshot displays the SQL Server Configuration Manager interface. On the left, the tree view shows 'SQL Server Network Configuration (32bit)' expanded, with 'SQL Server Network Configuration' and 'Protocols for SQLEXPRESS' selected. The right pane shows a table of network protocols:

Protocol Name	Status
Shared Mem...	Enabled
Named Pipes	Disabled
TCP/IP	Disabled

A purple text box with a blue border is overlaid on the screen, containing the text: **ENABLE TCP/IP and Ensure IPAll is set to TCP Port 1433**.

A 'Warning' dialog box is open in the foreground, displaying an information icon and the message: 'Any changes made will be saved; however, they will not take effect until the service is stopped and restarted.' with an 'OK' button.

In the background, the 'TCP/IP Properties' dialog box is open, showing the 'IP Addresses' tab. The 'General' section is expanded, and the 'Enabled' checkbox is checked. Below it, the 'IP7', 'IP8', and 'IP9' sections are visible. The 'IPAll' section is highlighted with a green box, showing the 'TCP Port' set to 1433.

# Step 1c: Restart MS-SQL & Check TCP Port is available

Administrator: Command Prompt

```
C:\>netstat -an | findstr 1433
C:\>netstat -an | findstr 1433
C:\>
```

SQL Server Configuration Manager

File Action View Help

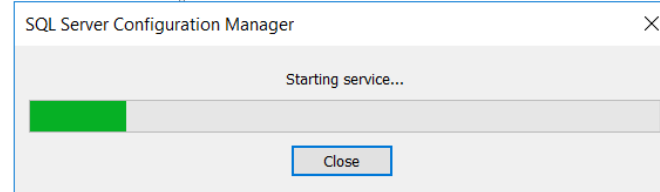
SQL Server Configuration Manager (Local)

- SQL Server Services
- SQL Server Network Configuration (32bit)
- SQL Native Client 11.0 Configuration (32bit)
- SQL Server Network Configuration
  - Protocols for SQLEXPRESS
- SQL Native Client 11.0 Configuration

Name	State	Start Mode	Log On As	Process ID
SQL Server Browser	Stopped	Other (Boot, Sy...	NT AUTHORITY...	0
SQL Server (SQLEXPRESS)	Running	Automatic	NT Service\MS...	368
SQL Server Agent (SQLEXPRESS)	Stopped	Other (Boot, Sy...	NT AUTHORITY...	0

Administrator: Command Prompt

```
C:\>netstat -an | findstr 1433
C:\>netstat -an | findstr 1433
C:\>netstat -an | findstr 1433
TCP    0.0.0.0:1433      0.0.0.0:0        LISTENING
TCP    [::]:1433        [::]:0           LISTENING
C:\>_
```



# Step 1d: Ensure MS-SQL OS F/W has rule for TCP 1433

Avoid this error message: Open the F/W port for the MS-SQL TCP Port 1433 on the database server  
- Open the MS Windows F/W Wizard & create a new F/W Rule for TCP Port 1433

Failed to connect to the database: The TCP/IP connection to the host 192.168.242.135, port 1433 has failed. Error: "connect timed out. Verify the connection properties. Make sure that an instance of SQL Server is running on the host and accepting TCP/IP connections at the port. Make sure that TCP connections to the port are not blocked by a firewall."

New Inbound Rule Wizard

**Protocol and Ports**

Specify the protocols and ports to which this rule applies.

**Steps:**

- Rule Type
- Protocol and Ports
- Action
- Profile
- Name

Does this rule apply to TCP or UDP?

☒ TCP  
☐ UDP

Does this rule apply to all local ports or specific local ports?

☐ All local ports  
☒ Specific local ports:   
Example: 80, 443, 5000-5010

New Inbound Rule Wizard

**Name**

Specify the name and description of this rule.

**Steps:**

- Rule Type
- Protocol and Ports
- Action
- Profile
- Name

Name:

Description (optional):

Windows Firewall with Advanced Security

File Action View Help

Windows Firewall with Advanced Security

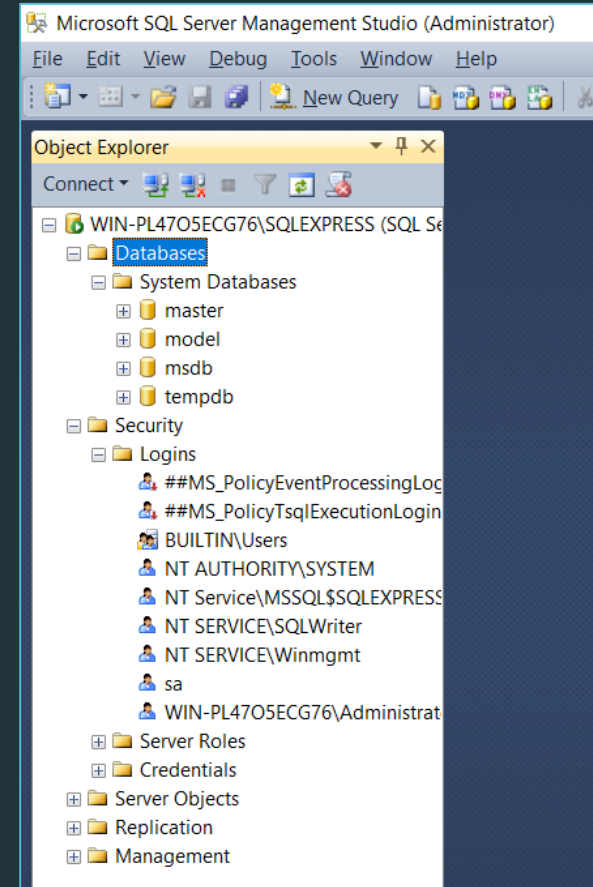
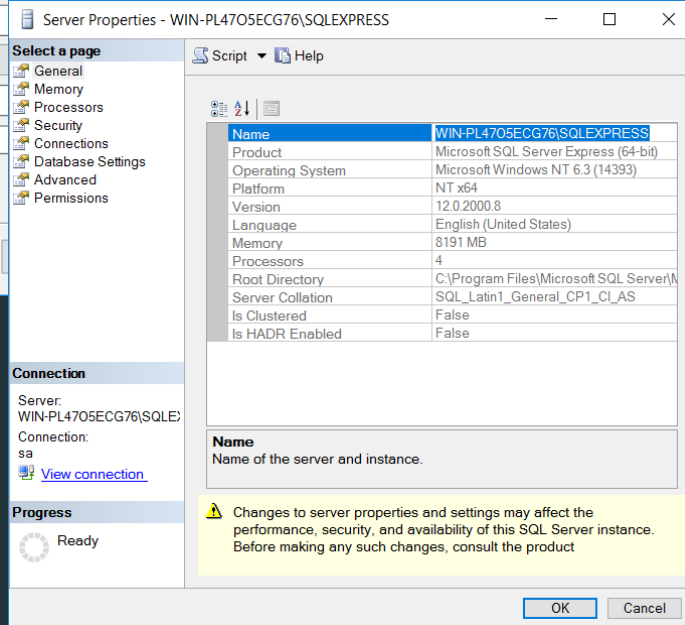
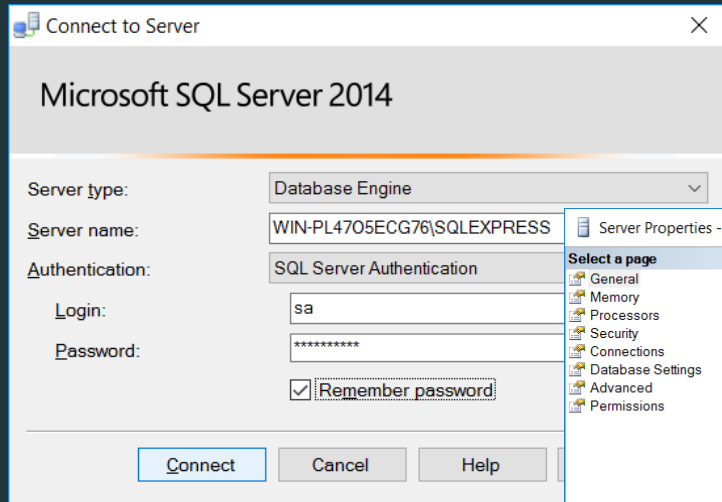
Inbound Rules

Name	Group	Profile	Enabled	Action	Override
Open MS-SQL Port for vAPP		All	Yes	Allow	No
Open IAMCS Server Ports		All	Yes	Allow	No
Open IM CCS Server Ports		All	Yes	Allow	No

```
C:\Users\Administrator>netstat -an | findstr 1433
TCP    0.0.0.0:1433      0.0.0.0:0        LISTENING
TCP    [::]:1433        [::]:0           LISTENING
```

```
C:\Users\Administrator>
```

# Step 1e: Before State View Prior to adding a new login ID or IG/IP Databases



# Step 2: Create new Login ID

Login - New

Select a page: General, Server Roles, User Mapping, Securables, Status

Script Help

Login name: igdba Search...

☐ Windows authentication

☒ SQL Server authentication

Password: .....

Confirm password: .....

☐ Specify old password

Old password:

☐ Enforce password policy

☐ Enforce password expiration

☐ User must change password at next login

☐ Mapped to certificate

☐ Mapped to asymmetric key

☐ Map to Credential

Mapped Credentials

Credential	Provider
------------	----------

Remove

Default database: master

Default language: <default>

Progress: Ready

OK Cancel

Login Properties - igdba

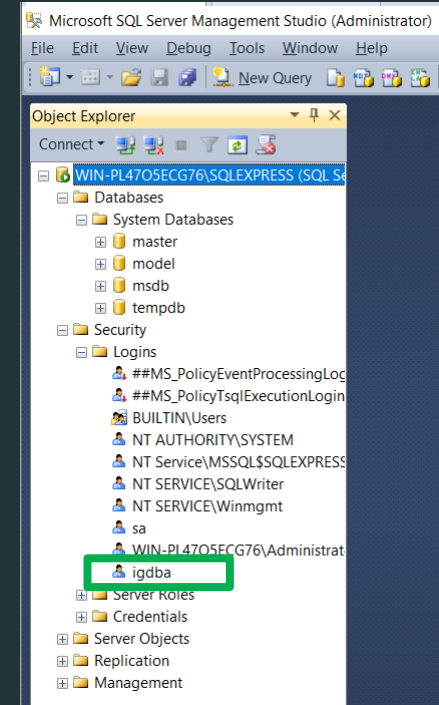
Select a page: General, Server Roles, User Mapping, Securables, Status

Script Help

Server role is used to grant permissions

Server roles:

- ☐ bulkadmin
- ☐ dbcreator
- ☐ diskadmin
- ☐ processadmin
- ☒ public
- ☐ securityadmin
- ☐ serveradmin
- ☐ setupadmin
- ☐ sysadmin



Create a new Login ID with Database Server Role = public  
- Least Privileged Model: This will allow authentication but not expose the other databases

# Step 3a: View vApp Readme for external Database setup

5) Snapshots (reporting)  
6) Workflow  
You may either create a snapshot  
of them)

Oracle:  
-----

- Create an Identity Manager database.
- Create a user with DBA privileges on the Identity Manager database.
- The tables will be created automatically by Identity Manager upon first run
- After the first run, you should revoke the DBA privilege and assign the following privileges instead:  
Create/alter/drop tables  
Create/alter/drop view  
Create/alter/drop INDEX  
Create/replace/drop stored procedures  
Create/replace/drop functions  
Create/drop sequence  
Create/replace/drop triggers  
Create/replace/drop types  
Insert/select/delete records  
CREATE SESSION / connect to database

MS SQL:  
-----

- Create an Identity Manager database.
- Create a user with DBO privileges on the Identity Manager database.

=====

----- Identity Governance -----

=====

MS SQL:  
-----

- Create a login user on the Identity Governance database server (you may create separate users for each of the below databases)  
The login user needs to have a "dbcreator" SQL server role
- Create the following databases (you may change the names as you see fit)  
**EUREKIFY\_SDB**  
TICKET\_DB  
REPORT\_DB  
WPDS

vApp Readme note describes the naming convention used for the databases for IG and IP  
-Pay Attention to the additional notes pulled from addition readme/wiki.



vApp\_r14-1\_Pre-requisites\_readme\_for\_an\_external\_database\_2017-11-21\_readme.txt

**Note 1:** Case-Sensitivity Collation Note for EUREKIFY\_SDB, TICKET\_DB, & REPORT\_DB within IG readme file under  
CA-IdentityGovernance-14.0.1-Core\Utils&Conf\SQL Scripts\mssql\ Manual\_DB\_Installation.txt

**Note 2:** XA Transactions Configuration Notes for MS-SQL Server (for IG WPDS DB) under  
<https://docops.ca.com/ca-identity-governance/14-1/EN/release-notes/release-notes-14-1/installation-and-upgrade-considerations>

# Step 3b: Create IG Databases

The screenshot shows the 'New Database' dialog box for 'EUREKIFY\_SDB'. The 'Database name' is 'EUREKIFY\_SDB' and the 'Owner' is 'igdba'. The 'Use full-text indexing' checkbox is checked. The 'Database files' table is as follows:

Logical Na...	File Ty...	Filegroup	Initial Size (...)	Autogrowth / Max
EUREKIFY...	ROW...	PRIMARY	3	By 1 MB, Unlimite
EUREKIFY...	LOG	Not Applic...	1	By 10 percent, U

The 'Collation' dropdown is set to 'SQL\_Latin1\_General\_CP1\_CS\_AS', which is highlighted with a green box. Other options include 'Recovery model: Simple', 'Compatibility level: SQL Server 2014 (120)', and 'Containment type: None'. The 'Progress' bar shows 'Ready'.

The screenshot shows the 'New Database' dialog box for 'TICKET\_DB'. The 'Database name' is 'TICKET\_DB' and the 'Owner' is 'igdba'. The 'Use full-text indexing' checkbox is checked. The 'Database files' table is as follows:

Logical Na...	File Ty...	Filegroup	Initial Size (...)	Autogrowth / Max
TICKET_DB	ROW...	PRIMARY	3	By 1 MB, Unlimite
TICKET_D...	LOG	Not Applic...	1	By 10 percent, U

The 'Collation' dropdown is set to 'SQL\_Latin1\_General\_CP1\_CS\_AS', which is highlighted with a green box. Other options include 'Recovery model: Simple', 'Compatibility level: SQL Server 2014 (120)', and 'Containment type: None'. The 'Progress' bar shows 'Ready'.

Create the “Case-Sensitive” Databases for IG for Eurekaify\_SDB & Ticket\_DB & Report\_DB

- Ensure Owner is the new DB Login ID (This ownership will allow the ID to manage all create/mod/del functionality of the DBs)



# Step 3c: Create IG Databases

New Database

Select a page: General, Options, Filegroups

Script Help

Database name: REPORT\_DB

Owner: igdba

☒ Use full-text indexing

Database files:

Logical Na...	File Ty...	Filegroup	Initial Size (...)	Autogrowth / Max
REPORT_...	ROW...	PRIMARY	3	By 1 MB, Unlimite
REPORT_...	LOG	Not Applic...	1	By 10 percent, U

Collation: SQL\_Latin1\_General\_CP1\_CS\_AS

Recovery model: Simple

Compatibility level: SQL Server 2014 (120)

Containment type: None

Other options:

Progress: Ready

Add Remove OK Cancel

New Database

Select a page: General, Options, Filegroups

Script Help

Database name: WPDS

Owner: igdba

☒ Use full-text indexing

Database files:

Logical Na...	File Ty...	Filegroup	Initial Size (...)	Autogrowth / Max
WPDS	ROW...	PRIMARY	3	By 1 MB, Unlimite
WPDS_log	LOG	Not Applic...	1	By 10 percent, U

Collation: SQL\_Latin1\_General\_CP1\_CI\_AS

Recovery model: Simple

Compatibility level: SQL Server 2014 (120)

Containment type: None

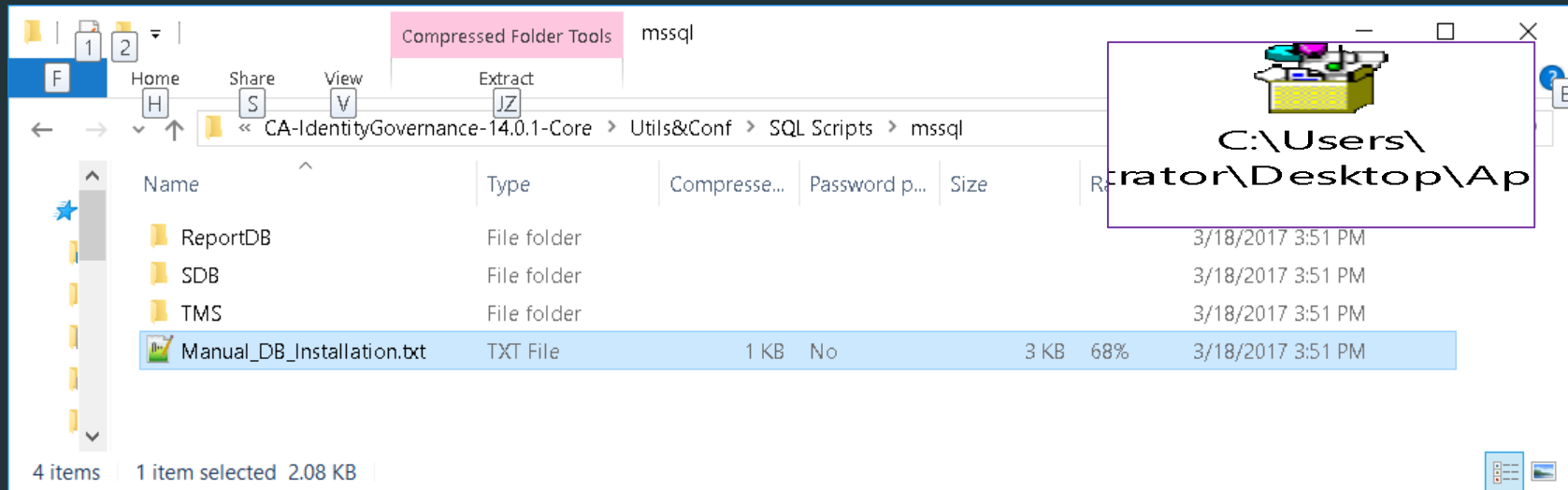
Progress: Ready

Add Remove OK Cancel

Create the Case-Sensitive Databases for IG for Report\_DB but NOT WPDS DB  
- Leave WPDS as "default" or SQL\_Latin1\_General\_CP1\_CI\_AS

## Step 3d: Supporting / Additional Notes:

### Validate & Review Manual Creation of DB per IG readme



# Step 3e: Supporting / Additional Notes

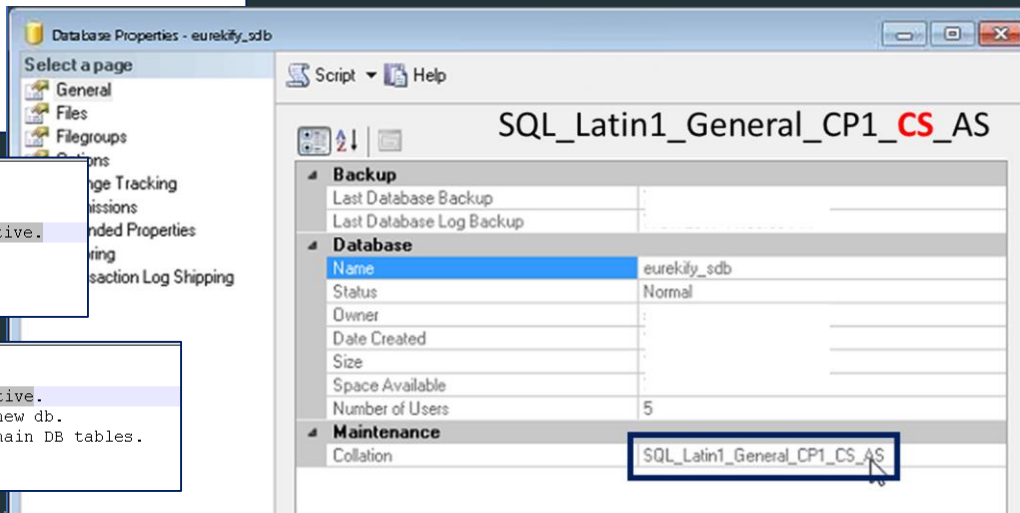
```
1 CA Identity Governance
2 -----
3
4 Manual db installation instructions:
5 ~~~~~
6
7 In case the database cannot be create by the installer, it is simple to create it manually:
8
9
10 SDB creation:
11 =====
12
13 1. Create a new db. Recommended name: sdb . Collation should be case sensitive.
14 2. Run the SAGE_BUILD_TABLES_SP.sql script file. This will create a stored procedure in the new db.
15 3. Execute the SAGE_BUILD_TABLES_SP stored procedure. This will create the main DB tables.
16 4. Run the QRTZ_BUILD_TABLES.sql sql script file. This will create Quartz scheduler tables.
17 5. Run the SAGE_REPORTS_TABLES.sql script file. This will add some more tables and indexes to the new db.
18 6. Run the Sage_Build_Procs.sql sql script file. This will add stored procedures, views and functions to the new db.
19 7. Run the Eurekaify_Insert_Default_Email_Templates_EN_US.sql sql script file. This will create default email templates.
20 8. Run the UPDATE_PROPERTIES.sql script file. This will update database properties.
21
22 Optional:
23
24 Execute the SAGE_BUILD_DEMO_DATA.sql sql script file. This will create demo data for testing.
25
26
27 SDB Upgrade (from older versions):
28 =====
29
30 Run steps 5, 6 , 7 & 8 from the SDB creation procedure.
31
```

```
1 TicketDB creation:
2 =====
3
4 1. Create a new db. Recommended name: ticketdb . Collation should be case sensitive.
5 2. Run the createTmsDb2005.sql sql script to create DB tables.
6 3. Run the UPGRADE_TMS.sql sql script to upgrade the DB.
7
8
```

```
1 ReportDB creation:
2 =====
3
4 1. Create a new db. Recommended name: reportdb . Collation should be case sensitive.
5 2. Run RCM_RDB_CREATE_TABLES_SP.sql This will create a stored procedure in the new db.
6 3. execute the RCM_RDB_CREATE_TABLES_SP stored procedure. This will create the main DB tables.
7 4. Run UPGRADE_ReportDB.sql sql script. This will update the database.
8
```

<b>EUREKIFY_SDB</b>	Collation: SQL_Latin1_General_CP1_CS_AS	Owner: igdba
Options/Misc:		
Allow Snapshot Isolation = True		
Is Read Committed Snapshot On = True		
<b>REPORT_DB</b>	Collation: SQL_Latin1_General_CP1_CS_AS	Owner: igdba
<b>TICKET_DB</b>	Collation: SQL_Latin1_General_CP1_CS_AS	Owner: igdba
<b>WPDS</b>	Collation: Default or SQL_Latin1_General_CP1_CI_AS	Owner: igdba
XA Driver/Configuration on MS-SQL Server required to build tables.		
<b>IDENTITY_PORTAL_DB</b>	Collation: Default or SQL_Latin1_General_CP1_CI_AS	Owner: igdba
XA Driver/Configuration on MS-SQL Server required to optimize tables.		

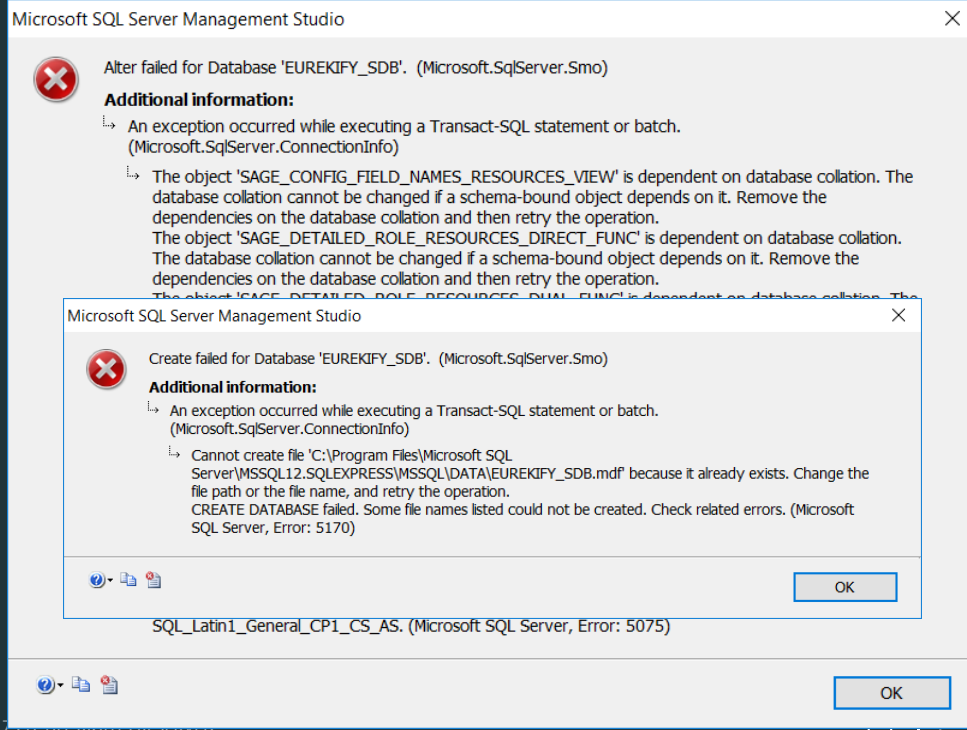
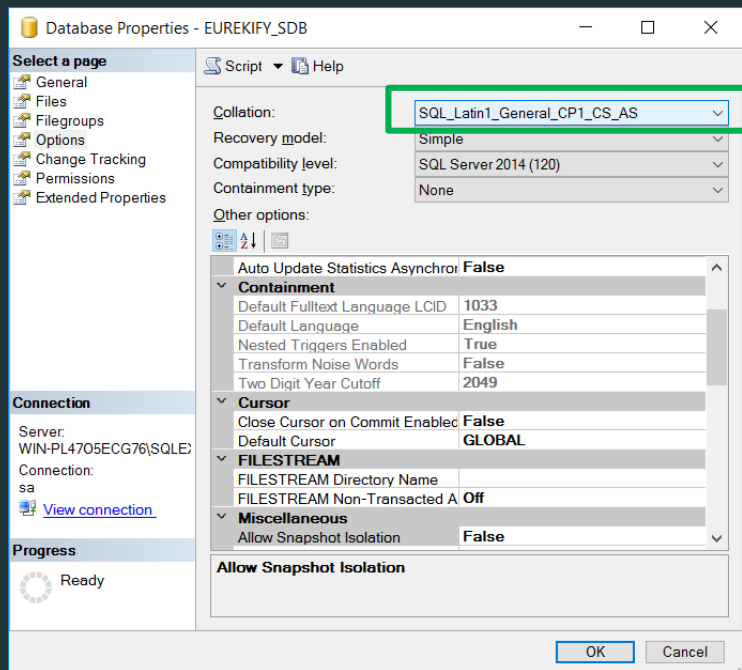
SQL\_Latin1\_General\_CP1\_CS\_AS



# Step 3f: Set Collation before starting IG

Per IG Readme.txt for manual installations of db  
Only update: eurekaify\_sdb, report\_db, ticket\_db  
Do NOT update: WPDS (workflow) db

Will not be able to change after data is loaded.  
Otherwise, the DB will need to be dropped and rebuilt.

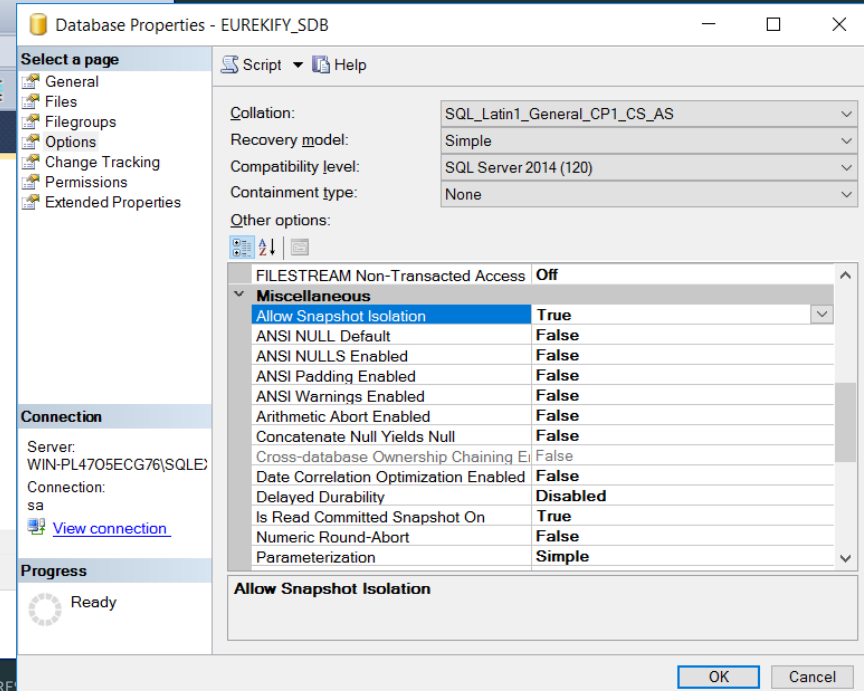
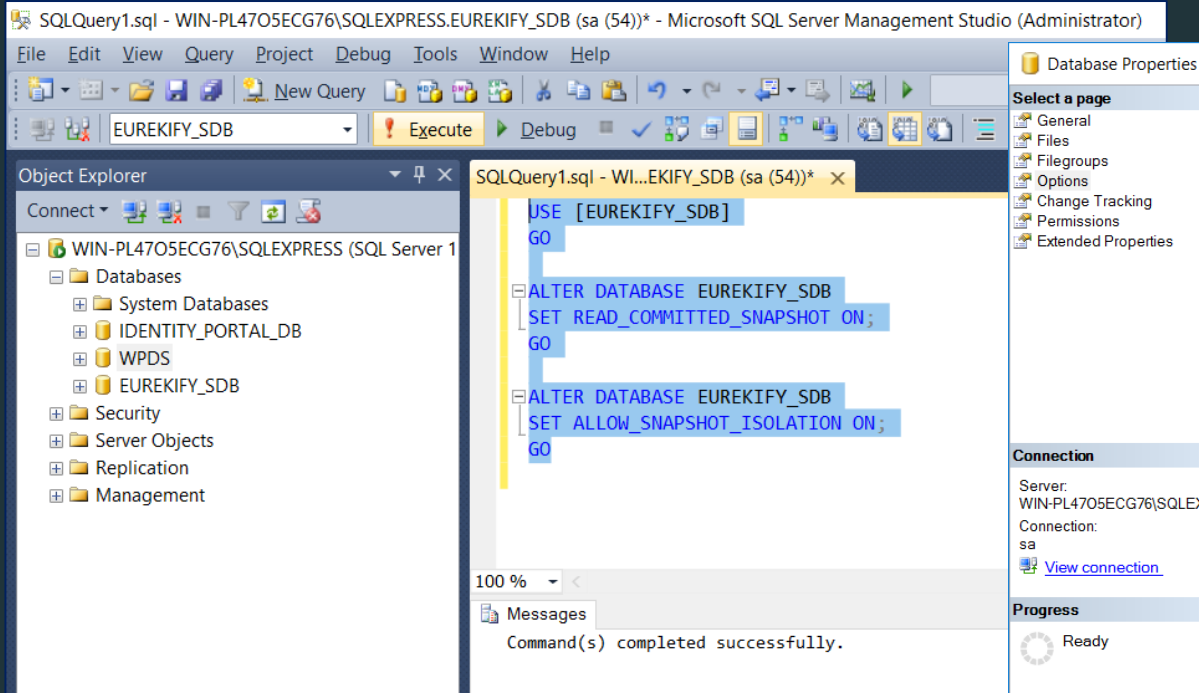


# Step 4: Supporting / Additional Notes: Tune EUREKIFY\_SDB

```
USE [EUREKIFY_SDB]  
GO
```

```
ALTER DATABASE EUREKIFY_SDB  
SET READ_COMMITTED_SNAPSHOT ON;  
GO
```

```
ALTER DATABASE EUREKIFY_SDB  
SET ALLOW_SNAPSHOT_ISOLATION ON;  
GO
```



# Step 5: Final View of IG four (4) Databases in MS-SQL Management Studio GUI

The screenshot displays the Microsoft SQL Server Management Studio (SSMS) interface. The title bar indicates the connection to 'SQLQuery1.sql - WIN-PL4705ECG76\SQLEXPRESS.master (sa (55)) - Microsoft SQL Server Management Studio (Administrator)'. The menu bar includes File, Edit, View, Project, Debug, Tools, Window, and Help. The toolbar contains icons for various database operations. The Object Explorer on the left shows the server structure for 'WIN-PL4705ECG76\SQLEXPRESS (SQL Server)'. Under the 'Databases' folder, four new databases are listed: 'System Databases', 'EUREKIFY\_SDB', 'TICKET\_DB', 'REPORT\_DB', and 'WPDS'. The 'Security' folder shows logins for 'sa' and 'igdba'. The central query window is titled 'SQLQuery1.sql - WIN-PL4705ECG76\SQLEXPRESS.master (sa (55))' and is currently empty. The Properties pane on the right shows the 'Current connection parameters' for the 'igdba' login. The 'Aggregate Status' section shows the connection is 'Open'. The 'Connection Details' section shows the connection name, display name, login name, server name, server version, session tracing ID, and SPID.

Object Explorer

- WIN-PL4705ECG76\SQLEXPRESS (SQL Server)
- Databases
  - System Databases
  - EUREKIFY\_SDB
  - TICKET\_DB
  - REPORT\_DB
  - WPDS
- Security
  - Logins
    - ##MS\_PolicyEventProcessingLog
    - ##MS\_PolicyTsqlExecutionLogin
    - BUILTIN\Users
    - NT AUTHORITY\SYSTEM
    - NT Service\MSSQL\$SQLEXPRESS
    - NT SERVICE\SQLWriter
    - NT SERVICE\Winmgmt
    - sa
    - WIN-PL4705ECG76\Administrator
    - igdba
  - Server Roles
  - Credentials
  - Server Objects
  - Replication
  - Management

SQLQuery1.sql - WIN-PL4705ECG76\SQLEXPRESS.master (sa (55))

Properties

Current connection parameters

Aggregate Status

Connection failure	
Elapsed time	
Finish time	
Name	WIN-PL4705ECG76\SQLEXPRESS
Rows returned	0
Start time	
State	Open

Connection

Connection name	WIN-PL4705ECG76\SQLEXPRESS
-----------------	----------------------------

Connection Details

Connection elapsed	
Connection finish time	
Connection rows returned	0
Connection start time	
Connection state	Open
Display name	WIN-PL4705ECG76\SQLEXPRESS
Login name	sa
Server name	WIN-PL4705ECG76\SQLEXPRESS
Server version	12.0.2000
Session Tracing ID	
SPID	55

100 %

Connected. (1/1)

WIN-PL4705ECG76\SQLEXPRESS ... sa (55) master 00:00:00 0 rows

Four (4) new IG Databases & one (1) new IP Database

All databases are “owned” by the new login ID of “igdba”

& “igdba” only has the Database server Role of “public”

# Pre-Task: Enable MS-SQL XA Configuration for IG WPDS aka Workpoint Workflow Engine (IG/IM) Databases

Required if planning on using any workflows in current or future state

# Step 1a: Review what is XA?

[https://en.wikipedia.org/wiki/X/Open\\_XA](https://en.wikipedia.org/wiki/X/Open_XA)

[https://en.wikipedia.org/wiki/Two-phase\\_commit\\_protocol](https://en.wikipedia.org/wiki/Two-phase_commit_protocol)

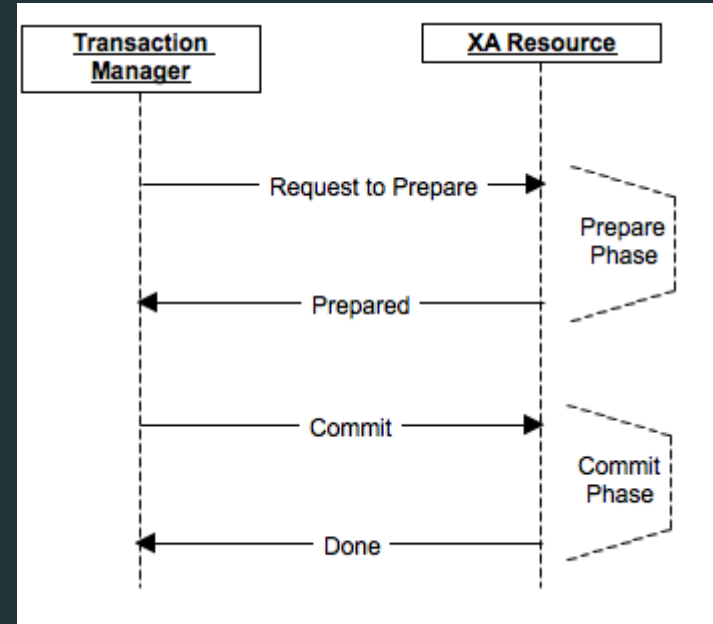


Image Ref: <https://dzone.com/articles/xa-transactions-2-phase-commit>



# Step 1b: Review XA and MS-SQL Implementation Notes

Filter

High Availability, Disaster Recovery

Using Result Set Metadata

Understanding XA Transactions

Using Auto Generated Keys

Using Database Mirroring (JDBC)

National Character Set Support

Understanding Cursor Types

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## Understanding XA Transactions

01/19/2017 • 10 minutes to read • Contributors

[Download JDBC Driver](#)

The Microsoft JDBC Driver for SQL Server provides support for Java Platform, Enterprise Edition/JDBC 2.0 optional distributed transactions. JDBC connections obtained from the [SQLServerXADataSource](#) class can participate in standard distributed transaction processing environments such as Java Platform, Enterprise Edition (Java EE) application servers.

**Warning**

Microsoft JDBC Driver 4.2 (and higher) for SQL includes new timeout options for the existing feature for automatic rollback of unprepared transactions. See [Configuring server-side timeout settings for automatic rollback of unprepared transactions](#) later in this topic for more detail.

### Remarks

The classes for the distributed transaction implementation are as follows:

Class	Implements	Description
-------	------------	-------------

<https://docs.microsoft.com/en-us/sql/connect/jdbc/understanding-xa-transactions>

# Step 1c: Review XA & MS-SQL Server OS's DTC Service

## Running the MS DTC Service

The MS DTC service should be marked **Automatic** in Service Manager to make sure that it is running when the SQL Server service is started. To enable MS DTC for XA transactions, you must follow these steps:

On Windows Vista and later:

1. Click the **Start** button, type **dcomcnfg** in the Start **Search** box, and then press ENTER to open **Component Services**. You can also type %windir%\system32\comexp.msc in the **StartSearch** box to open **Component Services**.
2. Expand Component Services, Computers, My Computer, and then Distributed Transaction Coordinator.
3. Right-click **Local DTC** and then select **Properties**.
4. Click the **Security** tab on the **Local DTC Properties** dialog box.
5. Select the **Enable XA Transactions** check box, and then click **OK**. This will cause a MS DTC service restart.
6. Click **OK** again to close the **Properties** dialog box, and then close **Component Services**.
7. Stop and then restart SQL Server to make sure that it syncs up with the MS DTC changes.

## Configuring the JDBC Distributed Transaction Components

You can configure the JDBC driver distributed transaction components by following these steps:

1. Copy the new sqljdbc\_xa.dll from the JDBC driver installation directory to the Binn directory of every SQL Server computer that will participate in distributed transactions.

# Step 1d: Review MS-SQL XA DLL in MS-SQL Server's Binn Folder & Execution of MS-SQL XA SQL Script to create a new DB Role on “master” db

## Configuring the JDBC Distributed Transaction Components

You can configure the JDBC driver distributed transaction components by following these steps:

1. Copy the new sqljdbc\_xa.dll from the JDBC driver installation directory to the Binn directory of every SQL Server computer that will participate in distributed transactions.

### Note

If you are using XA transactions with a 32-bit SQL Server, use the sqljdbc\_xa.dll file in the x86 folder, even if the SQL Server is installed on a x64 processor. If you are using XA transactions with a 64-bit SQL Server on the x64 processor, use the sqljdbc\_xa.dll file in the x64 folder.

2. Execute the database script xa\_install.sql on every SQL Server instance that will participate in distributed transactions. This script installs the extended stored procedures that are called by sqljdbc\_xa.dll. These extended stored procedures implement distributed transaction and XA support for the Microsoft JDBC Driver for SQL Server. You will need to run this script as an administrator of the SQL Server instance.
3. To grant permissions to a specific user to participate in distributed transactions with the JDBC driver, add the user to the SqlJDBCXAUser role.

You can configure only one version of the sqljdbc\_xa.dll assembly on each SQL Server instance at a time. Applications may need to use different versions of the JDBC driver to connect to the same SQL Server instance by using the XA connection. In that case, sqljdbc\_xa.dll, which comes with the newest JDBC driver, must be installed on the SQL Server instance.

There are three ways to verify the version of sqljdbc\_xa.dll is currently installed on the SQL Server instance:

4. Open the LOG directory of SQL Server computer that will participate in distributed transactions. Select and open the SQL Server "ERRORLOG" file. Search for "Using 'SQLJDBC\_XA.dll' version ..." phrase in the "ERRORLOG" file.
5. Open the Binn directory of SQL Server computer that will participate in distributed transactions. Select sqljdbc\_xa.dll assembly.
  - On Windows Vista or later: Right-click sqljdbc\_xa.dll and then select Properties. Then click the **Details** tab. The **File Version** field shows the version of sqljdbc\_xa.dll that is currently installed on the SQL Server instance.
6. Set the logging functionality as shown in the code example in the next section. Search for "Server XA DLL version:..." phrase in the output log file.

# Step 1e: Review assignment of the new DB Role “SqlJDBCXAUser” on “master” db to the new IG login ID

## Configuring the User-Defined Roles

To grant permissions to a specific user to participate in distributed transactions with the JDBC driver, add the user to the SqlJDBCXAUser role. For example, use the following Transact-SQL code to add a user named 'shelby' (SQL standard login user named 'shelby') to the SqlJDBCXAUser role:

```
USE master
GO
EXEC sp_grantdbaccess 'shelby', 'shelby'
GO
EXEC sp_addrolemember [SqlJDBCXAUser], 'shelby'
```

 Copy

SQL user-defined roles are defined per database. To create your own role for security purposes, you will have to define the role in each database, and add users in a per database manner. The SqlJDBCXAUser role is strictly defined in the master database because it is used to grant access to the SQL JDBC extended stored procedures that reside in master. You will have to first grant individual users access to master, and then grant them access to the SqlJDBCXAUser role while you are logged into the master database.

<https://docs.microsoft.com/en-us/sql/connect/jdbc/understanding-xa-transactions>

# Step 1f: Review how to validate XA is working

## How a DBA can confirm if Microsoft JDBC XA transactions are set

Rate this article ★★★★★



Snehadeep October 26, 2011

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I am from Microsoft SQL Developer Support team, we support many data access technologies.

Recently I had a chance to work with SQL DBA, who was facing issue to confirm to his developers whether XA transactions were configured correctly or not. After resolving his problem thought it would be easier for everyone if I blog on XA transactions.

For the benefit of novice DBA here are few concepts that you should be aware of.

### What is XA Transactions?

An XA transaction is a "global transaction" that may span multiple resources. An XA transaction involves a coordinating transaction manager, with one or more databases (or other resources, like JMS) all involved in a single global transaction.

### What is Distributed Transaction Coordinator?

The Microsoft Distributed Transaction Coordinator (MS DTC) DTC can act as either an XA-compliant resource manager or as a transaction manager. When the DTC acts as an XA-compliant resource manager, it allows SQL Server, Message Queuing (also known as MSMQ), and other OLE transactions-compliant resource managers to participate in transactions that are controlled by X/Open DTP XA-compliant transaction processing monitors.

# Step 1f: Review how to update XA validation Java script

## Steps to confirm whether XA transactions are configured correctly

1. Copy the code from the URL <http://msdn.microsoft.com/en-us/library/aa342335.aspx>

```
import java.net.Inet4Address;
import java.sql.*;
import java.util.Random;
import javax.transaction.xa.*;
import javax.sql.*;
import com.microsoft.sqlserver.jdbc.*;

public class testXA {

    public static void main(String[] args) throws Exception
    {

        // Create variables for the connection string , change the serverName , portNumber ,databaseName ,user & password as per your
        // environment

        String prefix = "jdbc:sqlserver://";

        String serverName = "MyServerName";

        int portNumber = 62204;

        String databaseName = "MSTest";

        String user = "TestLogin";

        String password = "12345";

        String connectionUrl = prefix + serverName + ":" + portNumber
            + ";databaseName=" + databaseName + ";user=" + user + ";password=" + password;

        .

        .
    }
}
```

# Step 1g: Review XA validation Java script

```
import java.net.InetAddress;
import java.sql.*;
import java.util.Random;
import java.util.transaction.xa.*;
import java.sql.*;
import com.microsoft.sqlserver.jdbc.*;

public class testXA {
    public static void main(String[] args) throws Exception {

        // Create variables for the connection string.
        String prefix = "jdbc:sqlserver://";
        String serverName = "localhost";
        int portNumber = 1433;
        String databaseName = "AdventureWorks";
        String user = "UserName";
        String password = "*****";
        String connectionUrl = prefix + serverName + ":" + portNumber
            + ";databaseName=" + databaseName + ";user=" + user + ";password=" + password;

        try {
            // Establish the connection.
            Class.forName("com.microsoft.sqlserver.jdbc.SQLServerDriver");
            Connection con = DriverManager.getConnection(connectionUrl);

            // Create a test table.
            Statement stmt = con.createStatement();
            try {
                stmt.executeUpdate("DROP TABLE XAMIN");
            }
            catch (Exception e) {
            }
            stmt.executeUpdate("CREATE TABLE XAMIN (f1 int, f2 varchar(max))");
            stmt.close();
            con.close();

            // Create the XA data source and XA ready connection.
            SQLServerXADataSource ds = new SQLServerXADataSource();
            ds.setUser(user);
            ds.setPassword(password);
            ds.setServerName(serverName);
            ds.setPortNumber(portNumber);
            ds.setDatabaseName(databaseName);
            XAConnection xaCon = ds.getXAConnection();
            con = xaCon.getConnection();

            // Get a unique Xid object for testing.
            XAResource xaRes = null;
            Xid xid = null;
            xid = XidImpl.getUniqueXid(1);

            // Get the XAResource object and set the timeout value.
            xaRes = xaCon.getXAResource();
            xaRes.setTransactionTimeout(0);

            // Perform the XA transaction.
            System.out.println("Write -> xid = " + xid.toString());;
            xaRes.start(xid, XAResource.TMNOFLAGS);
            PreparedStatement pstmt =
                con.prepareStatement("INSERT INTO XAMIN (f1,f2) VALUES (?, ?)");
            pstmt.setInt(1, 1);
            pstmt.setString(2, xid.toString());
            pstmt.executeUpdate();

            // Commit the transaction.
            xaRes.end(xid, XAResource.TMSUCCESS);
            xaRes.commit(xid, true);
        }
    }
}
```

```
// Cleanup.
con.close();
xaCon.close();

// Open a new connection and read back the record to verify that it worked.
con = DriverManager.getConnection(connectionUrl);
ResultSet rs = con.createStatement().executeQuery("SELECT * FROM XAMIN");
rs.next();
System.out.println("Read -> xid = " + rs.getString(2));
rs.close();
con.close();
}

// Handle any errors that may have occurred.
catch (Exception e) {
    e.printStackTrace();
}
}
```

class XidImpl implements Xid {

```
public int formatId;
public byte[] gtrid;
public byte[] bqual;
public byte[] getGlobalTransactionId() {return gtrid;}
public byte[] getBranchQualifier() {return bqual;}
public int getFormatId() {return formatId;}

XidImpl(int formatId, byte[] gtrid, byte[] bqual) {
    this.formatId = formatId;
    this.gtrid = gtrid;
    this.bqual = bqual;
}
```

```
public String toString() {
    int hexVal;
    StringBuffer sb = new StringBuffer(512);
    sb.append("formatId=" + formatId);
    sb.append(" gtrid=" + gtrid.length + ")=(0x");
    for (int i=0; i<gtrid.length; i++) {
        hexVal = gtrid[i]&0xFF;
        if ( hexVal < 0x10 )
            sb.append("0" + Integer.toHexString(gtrid[i]&0xFF));
        else
            sb.append(Integer.toHexString(gtrid[i]&0xFF));
    }
    sb.append("(" + bqual.length + ")=(0x");
    for (int i=0; i<bqual.length; i++) {
        hexVal = bqual[i]&0xFF;
        if ( hexVal < 0x10 )
            sb.append("0" + Integer.toHexString(bqual[i]&0xFF));
        else
            sb.append(Integer.toHexString(bqual[i]&0xFF));
    }
    sb.append(")");
    return sb.toString();
}
```

```
// Returns a globally unique transaction id.
static byte[] localIP = null;
static int txnUniqueID = 0;
static Xid getUniqueXid(int tid) {
```

```
Random rnd = new Random(System.currentTimeMillis());
txnUniqueID++;
int txnUID = txnUniqueID;
int tidID = tid;
int randID = rnd.nextInt();
byte[] gtrid = new byte[64];
byte[] bqual = new byte[64];
if ( null == localIP ) {
    try {
        localIP = InetAddress.getLocalHost().getAddress();
    }
    catch ( Exception ex ) {
        localIP = new byte[] { 0x01, 0x02, 0x03, 0x04 };
    }
}
System.arraycopy(localIP, 0, gtrid, 0, 4);
System.arraycopy(localIP, 0, bqual, 0, 4);

// Bytes 4 -> 7 - unique transaction id.
// Bytes 8 -> 11 - thread id.
// Bytes 12 -> 15 - random number generated by using seed from current time in milliseconds.
for (int i=0; i<3; i++) {
    gtrid[i+4] = (byte)(txnUID%0x100);
    bqual[i+4] = (byte)(txnUID%0x100);
    txnUID >>= 8;
    gtrid[i+8] = (byte)(tidID%0x100);
    bqual[i+8] = (byte)(tidID%0x100);
    tidID >>= 8;
    gtrid[i+12] = (byte)(randID%0x100);
    bqual[i+12] = (byte)(randID%0x100);
    randID >>= 8;
}
return new XidImpl(0x1234, gtrid, bqual);
}
```



testing\_ms-sql-xa-configuration-via-java-2017-11-20.txt

# Step 2a: Download latest MS-SQL XA Driver

## Microsoft JDBC Driver 6.2 for SQL Server

Select Language:

English

Download

Download the Microsoft JDBC Driver 6.2 for SQL Server, a Type 4 JDBC driver that provides database connectivity through the standard JDBC application program interfaces (APIs) available in Java Platform, Enterprise Editions.



Details

**Note:** There are multiple files available for this download. Once you click on the "Download" button, you will be prompted to select the files you need.

**Version:**

6.2.2.0

**Date Published:**

10/9/2017

**File Name:**

license62.txt

sqljdbc\_6.2.2.0\_enu.exe

sqljdbc\_6.2.2.0\_enu.tar.gz

**File Size:**

9 KB

2.1 MB

2.0 MB

The Microsoft JDBC Driver for SQL Server is a Type 4 JDBC driver that provides database connectivity through the standard JDBC application program interfaces (APIs) available in the Java Platform, Enterprise Editions. The Driver downloads are available to all SQL Server users at no additional charge, and provide access to Microsoft SQL Server and SQL Azure from any Java application, application server, or Java-enabled applet.

<https://www.microsoft.com/en-us/download/details.aspx?id=55539>

<https://go.microsoft.com/fwlink/?linkid=852460>



# Step 2b: MS-SQL XA Driver is included in XA sub-folder

The image shows a Microsoft Download Center window titled "Choose the download you want". It lists three files for download:

File Name	Size
license62.txt	9 KB
sqljdbc_6.2.2.0_enu.exe	2.1 MB
<input checked="" type="checkbox"/> sqljdbc_6.2.2.0_enu.tar.gz	2.0 MB

To the right, a "Download Summary" box shows:

Download Summary:  
KBMBGB

1. sqljdbc\_6.2.2.0\_enu.tar.gz

Total Size: 2.0 MB

A "Next" button is at the bottom right of the download window.

Below the download window, a Windows File Explorer window is open to the path: sqljdbc\_6.2 > enu > xa > x64. The file list shows:

Name	Date modified	Type	Size
sqljdbc_xa.dll	10/5/2017 6:24 PM	Application extens...	194 KB

The File Explorer shows "1 item" and "1 item selected 193 KB".

<https://www.microsoft.com/en-us/download/confirmation.aspx?id=55539&6B49FDFB-8E5B-4B07-BC31-15695C5A2143=1>

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# Step 2c: Review Installation Notes for MS-SQL XA Driver



Thank you for downloading Microsoft JDBC Driver 6.2 for SQL Server

If your download does not start after 30 seconds, [click here to download manually](#)



## Install Instructions

### Installation Instructions for the Microsoft Windows version of the JDBC Driver

**Note:** By downloading the Microsoft JDBC Driver for SQL Server, you are accepting the terms and conditions of the End-User License Agreement (EULA) for this component. Please review the End-User License Agreement (EULA) located on this page and print a copy of the EULA for your records.

1. Download `sqljdbc_<version>_<language>.exe` to a temporary directory.
2. Run `sqljdbc_<version>_<language>.exe`.
3. Enter an installation directory when prompted. We recommend that you unpack this zip file in %ProgramFiles% with the default directory: "Microsoft JDBC Driver x.x for SQL Server".

### Installation Instructions for the UNIX version of the JDBC Driver

1. Download `sqljdbc_<version>_<language>.tar.gz` to a temporary directory.
2. To unpack the zipped tar file, navigate to the directory where you want the driver unpacked and type `gzip -d sqljdbc_<version>_<language>.tar.gz`.
3. To unpack the tar file, move it to the directory where you want the driver installed and type `tar -xf sqljdbc_<version>_<language>.tar`.

# Step 3a: Enable MS-SQL XA Configuration for DTC

<https://support.ca.com/us/knowledge-base-articles.TEC573182.html>

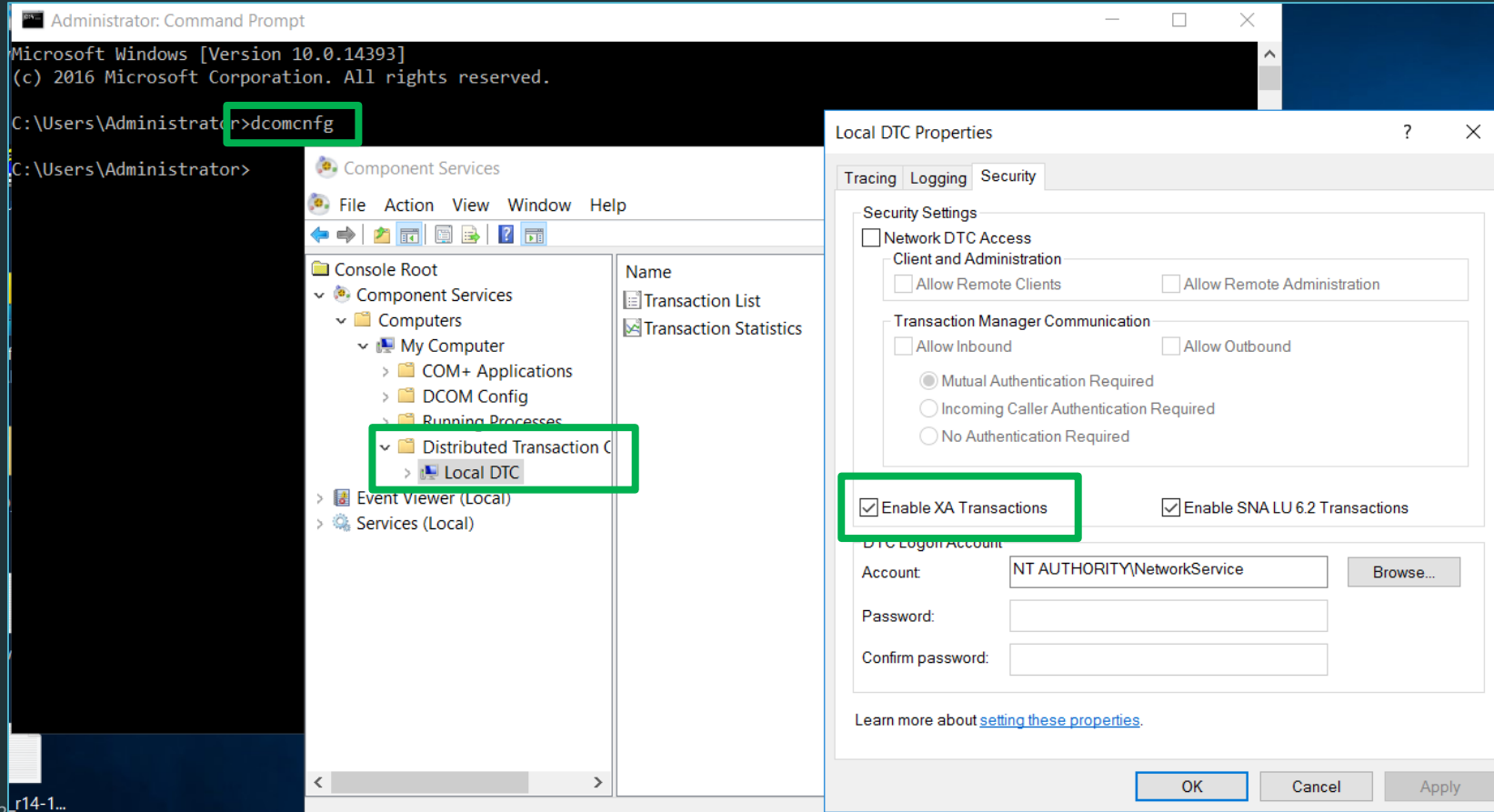
Below are examples scripted steps:

```
Get-ItemProperty "HKLM:\\SOFTWARE\\Microsoft\\MSDTC\\Security\\" -Name "XaTransactions"  
Set-ItemProperty "HKLM:\\SOFTWARE\\Microsoft\\MSDTC\\Security\\" -Name "XaTransactions" -Value "1"
```

```
net stop msdtc  
net start msdtc
```

Next page displays GUI method

# Step 3b: Enable MS-SQL XA Configuration for DTC via GUI



# Step 3c: View MS-SQL XA Configuration for DTC via PS

```
PS C:\Users\Administrator> Get-ItemProperty "HKLM:\SOFTWARE\Microsoft\MSDTC\Security\" -Name "XaTransactions"
```

XaTransactions : 1

```
PSPath      : Microsoft.PowerShell.Core\Registry::HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSDTC\Security\  
PSParentPath : Microsoft.PowerShell.Core\Registry::HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSDTC  
PSChildName  : Security  
PSDrive      : HKLM  
PSProvider   : Microsoft.PowerShell.Core\Registry
```

```
PS C:\Users\Administrator> .
```

The screenshot shows the 'Local DTC Properties' dialog box with the 'Security' tab selected. The 'Security Settings' section is expanded, showing 'Network DTC Access' and 'Transaction Manager Communication' options. The 'Enable XA Transactions' checkbox is checked and highlighted with a green box. The 'DTC Logon Account' section shows the account 'NT AUTHORITY\NetworkService'.

Local DTC Properties

Tracing Logging Security

Security Settings

☐ Network DTC Access

Client and Administration

☐ Allow Remote Clients ☐ Allow Remote Administration

Transaction Manager Communication

☐ Allow Inbound ☐ Allow Outbound

☒ Mutual Authentication Required  
☐ Incoming Caller Authentication Required  
☐ No Authentication Required

☒ Enable XA Transactions ☒ Enable SNA LU 6.2 Transactions

DTC Logon Account

Account: NT AUTHORITY\NetworkService Browse...

Password:

Confirm password:

Learn more about [setting these properties](#).

OK Cancel Apply

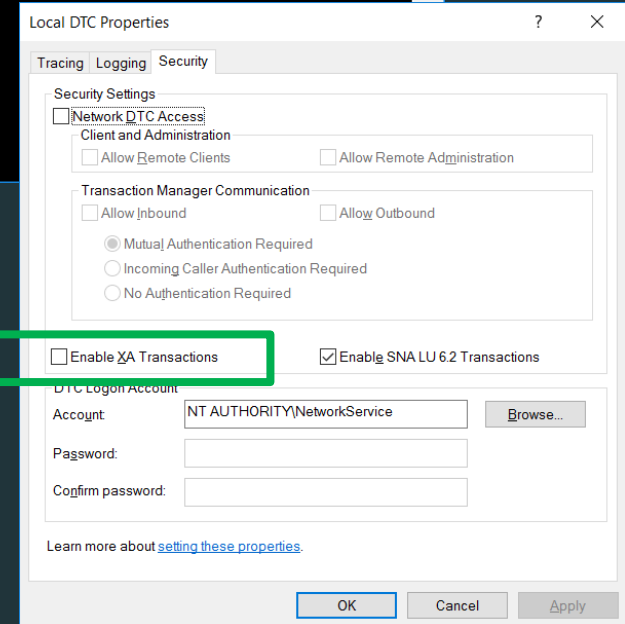
# Step 3d: View MS-SQL XA Configuration for DTC via PS

```
PS C:\Users\Administrator> Get-ItemProperty "HKLM:\\SOFTWARE\\Microsoft\\MSDTC\\Security\\" -Name "XaTransactions"
```

```
XaTransactions : 0
```

```
PSPath      : Microsoft.PowerShell.Core\Registry::HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSDTC\Security\  
PSParentPath : Microsoft.PowerShell.Core\Registry::HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSDTC  
PSChildName  : Security  
PSDrive      : HKLM  
PSProvider   : Microsoft.PowerShell.Core\Registry
```

```
PS C:\Users\Administrator>
```



# Step 3e: Set MS-SQL XA Configuration for DTC via PS

Administrator: Command Prompt - powershell

```
PS C:\Users\Administrator>
PS C:\Users\Administrator> Set-ItemProperty "HKLM:\SOFTWARE\Microsoft\MSDTC\Security\" -Name "XaTransactions" -Value "0"
PS C:\Users\Administrator> Get-ItemProperty "HKLM:\SOFTWARE\Microsoft\MSDTC\Security\" -Name "XaTransactions"
```

```
XaTransactions : 0
PSPath          : Microsoft.PowerShell.Core\Registry::HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSDTC\Security\
PSParentPath     : Microsoft.PowerShell.Core\Registry::HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSDTC
PSChildName      : Security
PSDrive          : HKLM
PSProvider       : Microsoft.PowerShell.Core\Registry
```

```
PS C:\Users\Administrator> Set-ItemProperty "HKLM:\SOFTWARE\Microsoft\MSDTC\Security\" -Name "XaTransactions" -Value "1"
PS C:\Users\Administrator> Get-ItemProperty "HKLM:\SOFTWARE\Microsoft\MSDTC\Security\" -Name "XaTransactions"
```

```
XaTransactions : 1
PSPath          : Microsoft.PowerShell.Core\Registry::HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSDTC\Security\
PSParentPath     : Microsoft.PowerShell.Core\Registry::HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSDTC
PSChildName      : Security
PSDrive          : HKLM
PSProvider       : Microsoft.PowerShell.Core\Registry
```

```
PS C:\Users\Administrator>
```

# Step 3f: Restart MS SQL Server OS's DTC Service



Administrator: Command Prompt - powershell

```
PS C:\Users\Administrator> net stop msdtc
The Distributed Transaction Coordinator service is stopping.
The Distributed Transaction Coordinator service was stopped successfully.

PS C:\Users\Administrator> net start msdtc
The Distributed Transaction Coordinator service is starting.
The Distributed Transaction Coordinator service was started successfully.

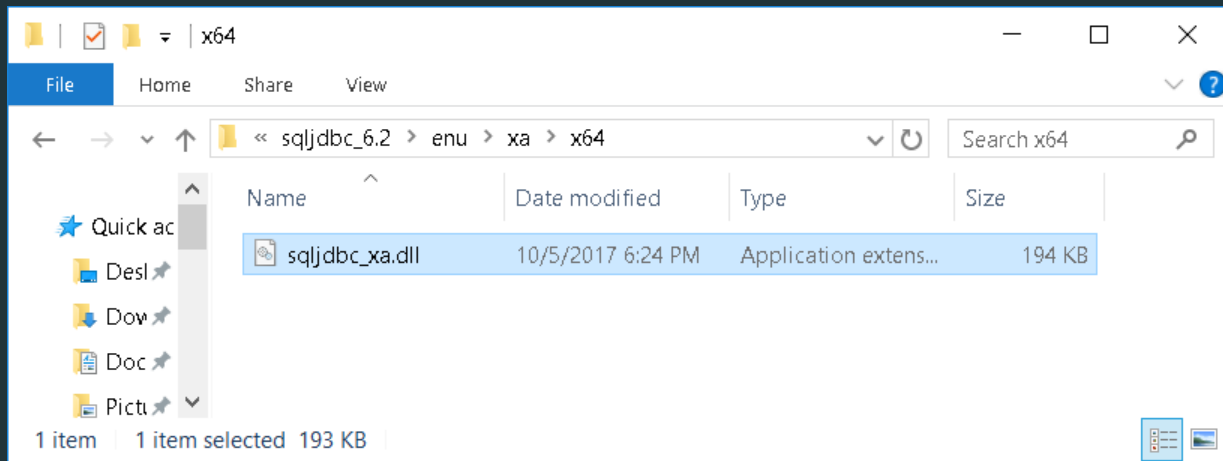
PS C:\Users\Administrator> _
```

net stop msdtc

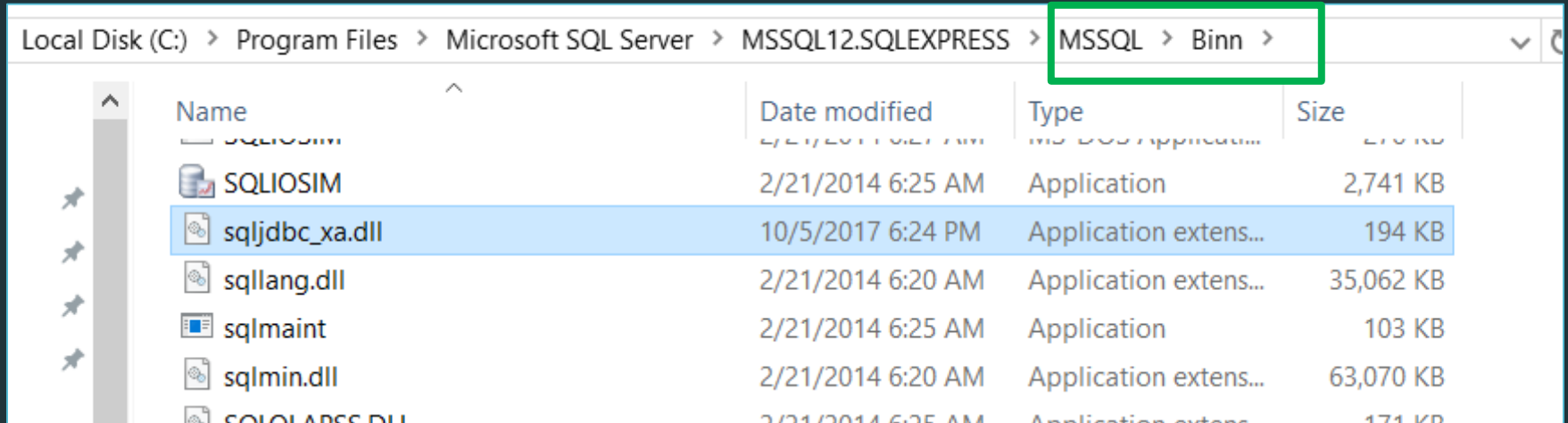
net start msdtc



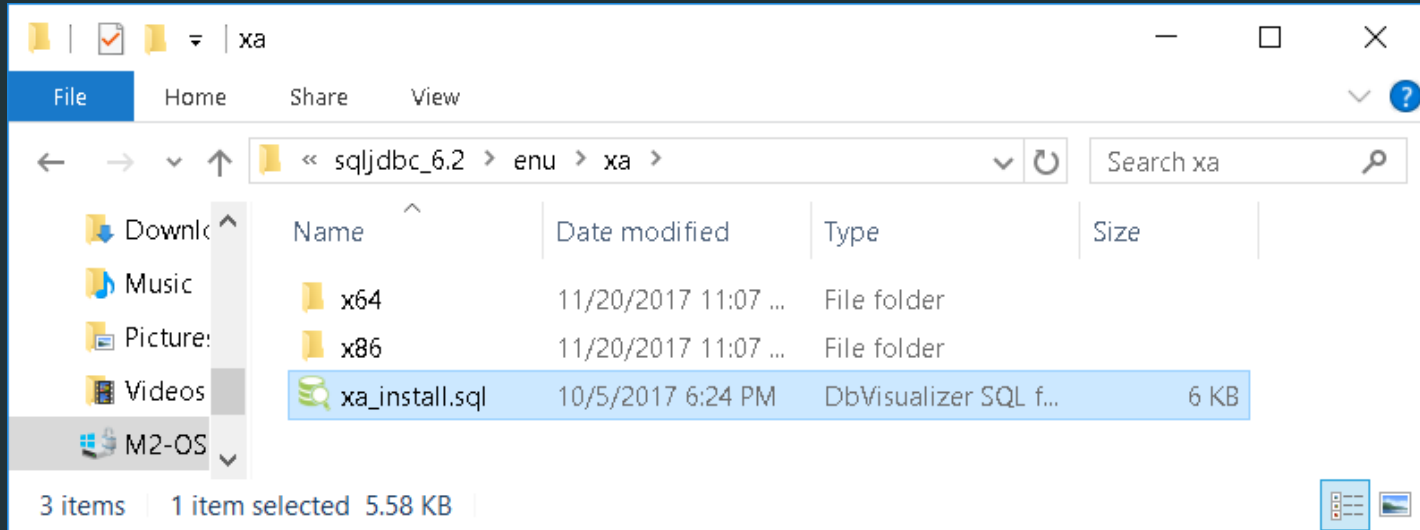
# Step 4a: Copy the XA DLL File to **all** MS-SQL Servers' BINN Folder(s)



## Step 4b: Copy file to MS-SQL Servers' BINN Folder(s)



# Step 5a: Copy MS SQL's pre-built XA DB SQL Script to MS SQL Server to prepare to execute



# Step 5b: View MS SQL's pre-built XA DB SQL Script

```
1  -- This script installs the extended stored procedures that implement
2  -- distributed transaction and XA support for the Microsoft JDBC Driver 6.0 for SQL Server.
3  -- Works only with SQL 2008 and above
4
5  -- Notes for SQL Administrators:
6
7  -- #1. Prior to running this script you must copy the extended stored procedure dll SQLJDBC_XA.dll
8  -- to the target SQL Server's Binn folder.
9
10 -- #2. Permissions to the distributed transaction support procedures for the Microsoft JDBC Driver 6.0
11 -- for SQL Server are granted through the SQL Server role [SqlJDBCXAUser]. To maintain a secure default
12 -- configuration, no user is granted access to this role by default.
13
14 -- Drop and re-create the extended stored procedure definitions in master.
15
16 use master
17 go
18
19 -- Drop any existing procedure definitions.
20 if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_init') and OBJECTPROPERTY(object_id, N
21 if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_start') and OBJECTPROPERTY(object_id,
22 if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_end') and OBJECTPROPERTY(object_id, N
23 if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_prepare') and OBJECTPROPERTY(object_id
24 if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_commit') and OBJECTPROPERTY(object_id,
25 if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_rollback') and OBJECTPROPERTY(object_id,
26 if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_forget') and OBJECTPROPERTY(object_id,
27 if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_recover') and OBJECTPROPERTY(object_id
28 if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_rollback_ex') and OBJECTPROPERTY(objec
29 if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_forget_ex') and OBJECTPROPERTY(object_
30 if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_prepare_ex') and OBJECTPROPERTY(object
31 if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_init_ex') and OBJECTPROPERTY(object_id
32 go
```

# Step 5c: Copy XA DB SQL Script to “New Query”

The screenshot shows the Microsoft SQL Server Management Studio (SSMS) interface. The title bar indicates the current file is 'xa\_install.sql - WIN-PL4705ECG76\SQLEXPRESS.master (sa (53)) - Microsoft SQL Server Management Studio (Administrator)'. The menu bar includes File, Edit, View, Query, Project, Debug, Tools, Window, and Help. The toolbar has a 'New Query' button highlighted with a green box. The Object Explorer on the left shows the server structure for 'WIN-PL4705ECG76\SQLEXPRESS (SQL Server)'. The main query editor window, titled 'xa\_install.sql - WIN...ESS.master (sa (53))', contains the following SQL script:

```
-- This script installs the extended stored procedures that implement
-- distributed transaction and XA support for the Microsoft JDBC Driver 6.0 for SQL Server.
-- Works only with SQL 2008 and above

-- Notes for SQL Administrators:

-- #1. Prior to running this script you must copy the extended stored procedure dll SQLJDBC_XA.dll
--     to the target SQL Server's Binn folder.

-- #2. Permissions to the distributed transaction support procedures for the Microsoft JDBC Driver 6.0
--     for SQL Server are granted through the SQL Server role [SqlJDBCXAUser]. To maintain a secure default
--     configuration, no user is granted access to this role by default.

-- Drop and re-create the extended stored procedure definitions in master.

use master
go

-- Drop any existing procedure definitions.
if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_init') and OBJECTPROPERTY(object_id, N'IsExtendedProc') = 1) drop procedure xp_sqljdbc_xa_init
if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_start') and OBJECTPROPERTY(object_id, N'IsExtendedProc') = 1) drop procedure xp_sqljdbc_xa_start
if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_end') and OBJECTPROPERTY(object_id, N'IsExtendedProc') = 1) drop procedure xp_sqljdbc_xa_end
if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_prepare') and OBJECTPROPERTY(object_id, N'IsExtendedProc') = 1) drop procedure xp_sqljdbc_xa_prepare
if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_commit') and OBJECTPROPERTY(object_id, N'IsExtendedProc') = 1) drop procedure xp_sqljdbc_xa_commit
if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_rollback') and OBJECTPROPERTY(object_id, N'IsExtendedProc') = 1) drop procedure xp_sqljdbc_xa_rollback
if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_forget') and OBJECTPROPERTY(object_id, N'IsExtendedProc') = 1) drop procedure xp_sqljdbc_xa_forget
if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_recover') and OBJECTPROPERTY(object_id, N'IsExtendedProc') = 1) drop procedure xp_sqljdbc_xa_recover
if exists (select * from sys.objects where object_id = object_id('xp_sqljdbc_xa_rollback_ex') and OBJECTPROPERTY(object_id, N'IsExtendedProc') = 1) drop procedure xp_sqljdbc_xa_rollback_ex
```

The status bar at the bottom shows 'Connected. (1/1)' and 'WIN-PL4705ECG76\SQLEXPRESS ... sa (53) master 00:00:00 0 rows'. The bottom right corner indicates 'Ln 1'.

# Step 5d: Execute XA DB SQL Script

The screenshot displays the SQL Server Enterprise Manager interface. The 'Object Explorer' on the left shows the database structure for 'WIN-PL4705ECG76\SQLEXPRESS (SQL Server)'. The 'master' database is selected. The 'Query Editor' window shows the execution of the 'xa\_install.sql' script. The script content is as follows:

```
-- This script installs the extended stored procedures that implement
-- distributed transaction and XA support for the Microsoft JDBC Driver 6.0 for SQL Server.
-- Works only with SQL 2008 and above

-- Notes for SQL Administrators:

-- #1. Prior to running this script you must copy the extended stored procedure dll SQLJDBC_XA.dll
--     to the target SQL Server's Binn folder.

-- #2. Permissions to the distributed transaction support procedures for the Microsoft JDBC Driver 6.0
--     for SQL Server are granted through the SQL Server role [SqlJDBCXAUser]. To maintain a secure default
--     configuration, no user is granted access to this role by default.

-- Drop and re-create the extended stored procedure definitions in master.
```

The 'Messages' pane at the bottom shows the following message:

```
SQLJDBC XA DLL installation script complete.
Check for any error messages generated above.
```

The status bar at the bottom indicates: 'Query executed successfully. WIN-PL4705ECG76\SQLEXPRESS ... sa (53) master 00:00:00 0 rows'.

# Step 6: Add the IG db login user to new Database Role under 'master' db

The screenshot displays the Microsoft SQL Server Management Studio (SSMS) interface. The title bar indicates the connection is to 'xa\_install.sql - WIN-PL47O5ECG76\SQLEXPRESS.master (sa (53)) - Microsoft SQL Server Management Studio (Administrator)'. The 'Object Explorer' on the left shows the 'master' database selected under 'System Databases'. The 'Database Roles' folder is expanded, and the 'SqJDBCXAUser' role is highlighted. The main query window shows a script titled 'xa\_install.sql - WIN...ESS.master (sa (53))' with the following content:

```
-- This script installs the extended stored procedures that implement
-- distributed transaction and XA support for the Microsoft JDBC Driver 6.0 for SQL Server.
-- Works only with SQL 2008 and above

-- Notes for SQL Administrators:

-- #1. Prior to running this script you must copy the extended stored procedure dll SQLJDBC_XA.dll
--     to the target SQL Server's Binn folder.

-- #2. Permissions to the distributed transaction support procedures for the Microsoft JDBC Driver 6.0
--     for SQL Server are granted through the SQL Server role [SqlJDBCXAUser]. To maintain a secure default
--     configuration, no user is granted access to this role by default.

-- Drop and re-create the extended stored procedure definitions in master.
```

The 'Messages' pane at the bottom shows the execution result: 'SQLJDBC XA DLL installation script complete. Check for any error messages generated above.' The status bar at the bottom indicates 'Query executed successfully.' and '0 rows'.

# Step 6b: Add the IG db login user to Database Role “SqlJDBCXAUser”

Login Properties - igdba

Select a page: General, Server Roles, User Mapping, Securables, Status

Script Help

Users mapped to this login:

Map	Database	User	Default Schema
<input checked="" type="checkbox"/>	EUREKIFY_SDB	dbo	dbo
<input checked="" type="checkbox"/>	IDENTITY_PORTAL_DB	dbo	dbo
<input checked="" type="checkbox"/>	master	igdba	dbo
<input type="checkbox"/>	model		
<input type="checkbox"/>	msdb		
<input checked="" type="checkbox"/>	REPORT_DB	dbo	dbo
<input type="checkbox"/>	tempdb		
<input checked="" type="checkbox"/>	TICKET_DB	dbo	dbo

☒ Guest account enabled for: master

Database role membership for: master

- ☐ db\_accessadmin
- ☐ db\_backupoperator
- ☐ db\_datareader
- ☐ db\_datawriter
- ☐ db\_ddladmin
- ☐ db\_denydatareader
- ☐ db\_denydatawriter
- ☐ db\_owner
- ☐ db\_securityadmin
- ☒ public
- ☒ SqlJDBCXAUser

Connection: Server: WIN-PL4705ECG76\SQLE; Connection: sa; View connection

Progress: Ready

OK Cancel

Database Role Properties - SqlJDBCXAUser

Select a page: General, Securables, Extended Properties

Script Help

Role name: SqlJDBCXAUser

Owner: dbo

Schemas owned by this role:

- ☐ db\_accessadmin
- ☐ dbo
- ☐ db\_securityadmin
- ☐ sys
- ☐ db\_owner

Members of this role:

Role Members

- ☒ igdba

Connection: Server: WIN-PL4705ECG76\SQLE; Connection: sa; View connection

Progress: Ready



# Step 7: Restart the MS-SQL Server's Services

The screenshot shows the Microsoft SQL Server Management Studio (SSMS) interface. The main window displays a query execution window titled 'xa\_install.sql - WIN-PL4705ECG76\SQLEXPRESS.master (sa (53))'. The query text is as follows:

```
-- This script installs the extended stored procedures that implement
-- distributed transaction and XA support for the Microsoft JDBC Driver 6.0 for SQL Server.
-- only with SQL 2008 and above

for SQL Administrators:

prior to running this script you must copy the extended stored procedure dll SQLJDBC_XA.dll
to the target SQL Server's Binn folder.

permissions to the distributed transaction support procedures for the Microsoft JDBC Driver 6.0
for SQL Server are granted through the SQL Server role [SqlJDBCXAUser]. To maintain a secure default
configuration, no user is granted access to this role by default.

and re-create the extended stored procedure definitions in master.

DLL installation script complete.
any error messages generated above.
```

The Object Explorer on the left shows the server hierarchy, with the 'Restart' option highlighted in the context menu. The Properties window on the right shows the connection details for the current connection.

Current connection parameters	
<b>Aggregate Status</b>	
Connection failure	
Elapsed time	00:00:00.407
Finish time	11/20/2017 11:18:19 AM
Name	WIN-PL4705ECG76\SQLEXPRESS
Rows returned	0
Start time	11/20/2017 11:18:18 AM
State	Open
<b>Connection</b>	
Connection name	WIN-PL4705ECG76\SQLEXPRESS
<b>Connection Details</b>	
Connection elapse	00:00:00.407
Connection finish t	11/20/2017 11:18:19 AM
Connection rows r	0
Connection start ti	11/20/2017 11:18:18 AM
Connection state	Open
Display name	WIN-PL4705ECG76\SQLEXPRESS
Login name	sa
Server name	WIN-PL4705ECG76\SQLEXPRESS
Server version	12.0.2000
Session Tracing ID	
SPID	53
<b>Name</b>	
The name of the connection.	

Query executed successfully. WIN-PL4705ECG76\SQLEXPRESS ... | sa (53) | master | 00:00:00 | 0 rows

## Step 8a: Validate XA driver is working for MS-SQL

- Testing process may be executed on the MS SQL Server or from remote workstation
- Ensure Java JDK is installed or available to compile the sample validation java code.
- Copy sample validation java code from Microsoft Web Site

<https://docs.microsoft.com/en-us/sql/connect/jdbc/understanding-xa-transactions>

# Step 8b: Update testXA.java file with DB hostname & credentials

testXA.java - Notepad

File Edit Format View Help

```
import java.net.InetAddress;
import java.sql.*;
import java.util.Random;
import javax.transaction.xa.*;
import javax.sql.*;
import com.microsoft.sqlserver.jdbc.*;

public class testXA {

    public static void main(String[] args) throws Exception {

        // Create variables for the connection string.
        String prefix = "jdbc:sqlserver://";
        String serverName = "localhost";
        int portNumber = 1433;
        // String databaseName = "AdventureWorks";
        String databaseName = "EUREKIFY_SDB";
        // String user = "UserName";
        // String password = "*****";
        String user = "igdba";
        String password = "Password01";

        String connectionUrl = prefix + serverName + ":" + portNumber
            + ";databaseName=" + databaseName + ";user=" + user + ";password=" + password;
```



C:\Users\  
trator\Desktop\va

<https://docs.microsoft.com/en-us/sql/connect/jdbc/understanding-xa-transactions>

# Step 8c: Compile testXA.java with JDK javac command

```
Administrator: Command Prompt

Volume in drive C has no label.
Volume Serial Number is 482D-4F5B

Directory of C:\Users\Administrator\Desktop\testxa

11/20/2017  11:30 PM    <DIR>          .
11/20/2017  11:30 PM    <DIR>          ..
05/30/2017  05:46 PM           585,020 sqljdbc4.jar
11/20/2017  11:24 PM           6,114 testXA.java
                2 File(s)          591,134 bytes
                2 Dir(s)  26,558,394,368 bytes free

C:\Users\Administrator\Desktop\testxa>"C:\Program Files\Java\jdk1.8.0_152\bin\javac.exe" -cp "$CLASSPATH;sqljdbc4.jar" testXA.java

C:\Users\Administrator\Desktop\testxa>dir
Volume in drive C has no label.
Volume Serial Number is 482D-4F5B

Directory of C:\Users\Administrator\Desktop\testxa

11/20/2017  11:30 PM    <DIR>          .
11/20/2017  11:30 PM    <DIR>          ..
05/30/2017  05:46 PM           585,020 sqljdbc4.jar
11/20/2017  11:30 PM           3,198 testXA.class
11/20/2017  11:24 PM           6,114 testXA.java
11/20/2017  11:30 PM           2,439 XidImpl.class
                4 File(s)          596,771 bytes
                2 Dir(s)  26,558,382,080 bytes free

C:\Users\Administrator\Desktop\testxa>
```

Ensure that sqljdbc4.jar file exist in the same folder as the testXA.java script

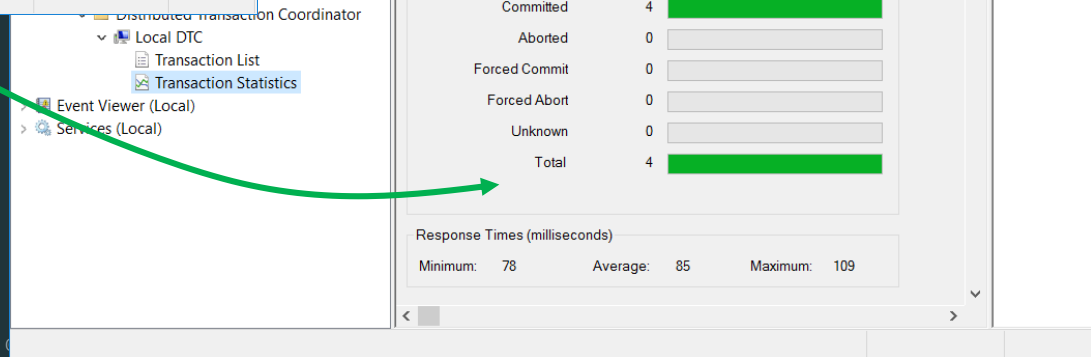
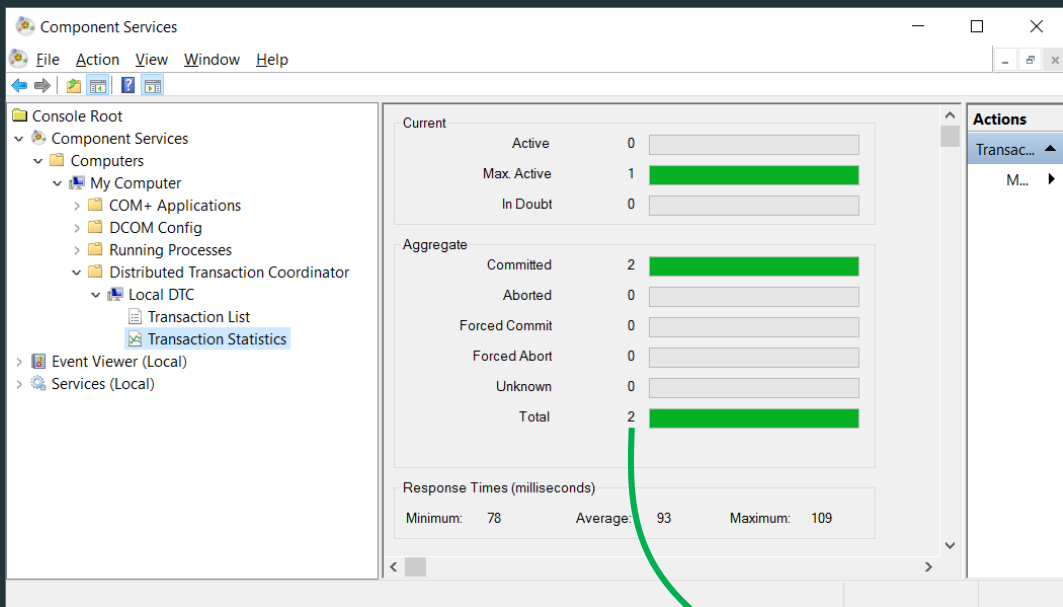
"C:\Program Files\Java\jdk1.8.0\_152\bin\javac.exe" -cp "\$CLASSPATH;sqljdbc4.jar" testXA.java

## Step 8d: Execute testXA java program

[illegible]

# Step 8e: Validate XA via DTC Transaction Stats

XA is working if we see the DTC aggregate Total # increase every time we use the java “testXA” testing program or if IG is updating the DB



# Step 8f: Validate XA via MS-SQL ERRORLOG

The screenshot displays a Windows File Explorer window showing the path: This PC > Local Disk (C:) > Program Files > Microsoft SQL Server > MSSQL12.SQLEXPRESS > MSSQL > Log. The file list includes ERRORLOG (52 KB), ERRORLOG.1 (16 KB), and ERRORLOG.2 (20 KB). Below the file explorer, a Notepad window titled 'ERRORLOG - Notepad' shows the contents of the log file. The log entries are as follows:

Timestamp	SPID	Message
2017-11-20 23:09:20.81	spid56	Setting database option DATE_CORRELATION_OPTIMIZATION to OFF for database 'REPORT_DB'.
2017-11-20 23:09:20.81	spid56	Setting database option PARAMETERIZATION to SIMPLE for database 'REPORT_DB'.
2017-11-20 23:09:20.82	spid56	Setting database option READ_COMMITTED_SNAPSHOT to OFF for database 'REPORT_DB'.
2017-11-20 23:09:20.82	spid56	Setting database option READ_WRITE to ON for database 'REPORT_DB'.
2017-11-20 23:09:20.82	spid56	Setting database option RECOVERY to SIMPLE for database 'REPORT_DB'.
2017-11-20 23:09:20.82	spid56	Setting database option MULTI_USER to ON for database 'REPORT_DB'.
2017-11-20 23:09:20.82	spid56	Setting database option PAGE_VERIFY to CHECKSUM for database 'REPORT_DB'.
2017-11-20 23:09:20.82	spid56	Setting database option target_recovery_time to 0 for database 'REPORT_DB'.
2017-11-20 23:09:20.83	spid56	Setting database option delayed_durability to disabled for database 'REPORT_DB'.
2017-11-20 23:39:56.25	spid53	Attempting to load library 'SQLJDBC_XA.dll' into memory. This is an informational message only. No user action is required.
2017-11-20 23:39:56.31	spid53	Using 'SQLJDBC_XA.dll' version '0006.02.02' to execute extended stored procedure 'xp_sqljdbc_xa_start'. This is an informational message only.
2017-11-20 23:39:57.43	spid52	Attempting to initialize Microsoft Distributed Transaction Coordinator (MS DTC). This is an informational message only.
2017-11-20 23:39:57.44	spid52	Recovery of any in-doubt distributed transactions involving Microsoft Distributed Transaction Coordinator (MS DTC) is complete.

MS-SQL ERRORLOG shows us that the library file sqljdbc\_XA.dll is loading into memory with no issues.

# Step 1: Select either the Non-Prod or Prod Deployment

## Please select the configuration type you wish to deploy

This Wizard will help you get started and set up a running environment in minutes. Lets get started

### Demo



For demonstrating the Identity Suite features and capabilities

### Sandbox / Custom



To quickly develop and prototype Identity Management solutions and use cases

### Non Production



For lower customer environments like QA or Development environments. It offers a highly available cluster for the Identity Portal, Identity Suite and Identity Governance components. A customer supplied, external database is required. This deployment type requires minimal hardware resources.

### Production

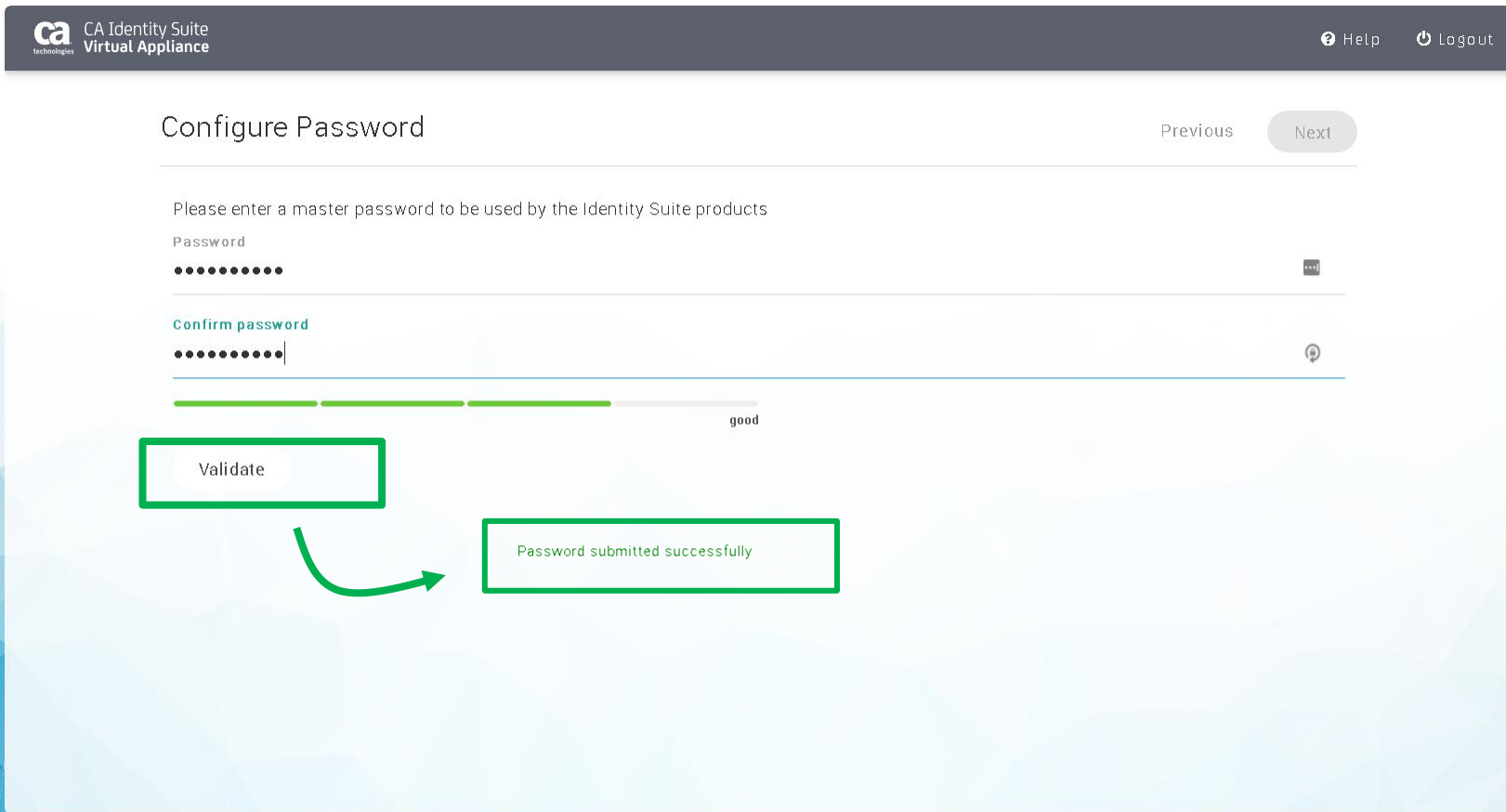


For production and pre-production (Staging) environments

You are currently connected to **192.168.242.146** (vapp\_nordstrom\_01). This is an unconfigured node  
In case you wish to add this machine to an existing Virtual Appliance solution, close your browser and connect to a previously configured machine in order to proceed.



## Step 2: Set vApp master Password (used for all components)



# Step 3a: Add in required Oracle JCE Extension

## Upload Java Cryptography Extension

Previous

Next

The Identity Suite requires Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy. You need to download and provide the JCE Unlimited Strength Jurisdiction Policy archive.

Please perform the following steps:

1. [Click here](#) to visit the Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy Files 8 download page
2. Download file named: **jce\_policy-8.zip**
3. Upload the **jce\_policy-8.zip** archive to the vApp.
4. Click "Next" to proceed.

Drag & Drop your file here

You can also browse for a file

BROWSE

# Step 3b: Add in required Oracle JDK8 JCE Extension


<http://www.oracle.com/technetwork/java/javase/downloads/jce8-download-2133166.html>

## Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy Files 8 Download








### Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy Files 8

You must accept the [Oracle Binary Code License Agreement for the Java SE Platform Products](#) to download this software.

Thank you for accepting the Oracle Binary Code License Agreement for the Java SE Platform Products; you may now download this software.

Product / File Description	File Size	Download
Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy Files 8	0.01 MB	 <a href="#">jce_policy-8.zip</a>

S (C:) > Tools > InstallMedia > 3rd\_Party\_Tools > JDK

Name	Date modified	Type	Size
 JavaSetup8u111.exe	11/22/2016 12:18 ...	Application	721 KB
 jce_policy-8.zip	7/13/2016 6:20 PM	Compressed (zipp...	9 KB
 jdk-7u79-windows-i586.exe	7/13/2016 6:20 PM	Application	141,631 KB
 jdk-7u79-windows-x64.exe		Application	143,420 KB
 jdk-7u151-linux-x64.tar.gz	8/29/2017 1:12 AM	GZ File	150,202 KB
 jdk-7u151-windows-x64.exe	8/29/2017 1:12 AM	Application	144,230 KB
 jdk-8u111-windows-i586.exe	12/16/2016 4:50 PM	Application	193,757 KB

Type: Compressed (zipped) Folder  
Size: 8.21 KB  
Date modified: 7/13/2016 6:20 PM

# Step 3c: Confirm Success for Oracle JDK8 JCE Extension

## Upload Java Cryptography Extension

Previous

Next

The Identity Suite requires Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy. You need to download and provide the JCE Unlimited Strength Jurisdiction Policy archive.


Please perform the following steps:

1. [Click here](#) to visit the Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy Files 8 download page
2. Download file named: **jce\_policy-8.zip**
3. Upload the **jce\_policy-8.zip** archive to the vApp.
4. Click "Next" to proceed.



jce\_policy-8.zip uploaded successfully

# Step 4a: View Configure JDBC Connections to Databases

 CA Identity Suite  
Virtual Appliance

[Help](#) [Logout](#)

Configure Database

Previous [Let's GO](#)

Database connections must be tested before you can continue

**Important:** you must perform the prerequisites listed in the [readme file](#) to create the database schemas before proceeding with the external database configuration

Please configure services database credentials

[Clear All](#) [Test All Connections](#)

IG

Identity Governance

[skip](#)

Type


IM

Identity Manager

[skip](#)

Type

# Step 4b: View Configure JDBC Connections to Databases

 CA Identity Suite  
Virtual Appliance

Help Logout

Please configure services database credentials

Clear All

Test All Connections

Type

IM Identity Manager

skip

Type

IP Identity Portal

skip

Type

# Step 4c: Set MS-SQL for JDBC Connection Type

ca technologies

CA Identity Suite  
Virtual Appliance

HelpLogout

Configure DatabasePreviousLet's GO

Database connections must be tested before you can continue

Important: you must perform the prerequisites listed in the [readme file](#) to create the database schemas before proceeding with the external database configuration

Please configure services database credentialsClear AllTest All Connections

IGIdentity Governanceskip

Type

Oracle

MS SQLdefine

IMIdentity Managerskip

IPIdentity Portalskip

# Step 4d: View common error messages for DB connections

Example: TCP Port 1433 not open on MS-SQL Server or OS/Network Firewall is blocking the TCP Port

Failed to connect to the database: The TCP/IP connection to the host 192.168.242.135, port 1433 has failed. Error: "connect timed out. Verify the connection properties. Make sure that an instance of SQL Server is running on the host and accepting TCP/IP connections at the port. Make sure that TCP connections to the port are not blocked by a firewall."

Example: JDBC Connection Information incorrect. Below error was due to incorrect database name

192.168.242.135

Port

1433

Database Name

WIN-PL4705ECG76\SQLEXPRESS

Username

igdba

Password

●●●●●●●●



Failed to connect to the database: Cannot open database "WIN-PL4705ECG76\SQLEXPRESS" requested by the login. The login failed. ClientConnectionId:a9781c0d-ac3c-4808-9566-7595f1b4a995



# Step 4e: Update JDBC Connection Info for Databases

CA Identity Suite  
Virtual Appliance

Help Logout

Please configure services database credentials

Clear AllTest All Connections

MS SQL

Eurekify

IP Address

192.168.242.135

Port

1433

Database Name

EUREKIFY\_SDB

Username

igdba

Password

.....

Tickets DB

Recommendation: Use notepad or Notepad++ ; with JDBC Connection info available to copy-n-paste the same information five (5) times

Non Production

Version 14.1.0

# Step 4f: Update JDBC Connection Info for Databases

 CA Identity Suite  
Virtual Appliance

 Help  Logout

Please configure services database credentials Clear All Test All Connections

Tickets DB

IP Address

192.168.242.135

Port

1433

Database Name

TICKET\_DB

Username

igdba

Password

.....


DB\_PASSWORD\_IG\_TICKETDB

IP Address

192.168.242.135

Recommendation: Use notepad or Notepad++ ; with  
JDBC Connection info available to copy-n-paste the same information five (5) times

# Step 4g: Update JDBC Connection Info for Databases

 CA Identity Suite  
Virtual Appliance

[Help](#) [Logout](#)

Please configure services database credentials

Clear All

Test All Connections

Reports DB

IP Address

192.168.242.135

Port

1433

Database Name

REPORT\_DB

Username

igdba

Password

●●●●●●●●

...

IP Address

192.168.242.135

Recommendation: Use notepad or Notepad++ ; with JDBC Connection info available to copy-n-paste the same information five (5) times

Non Production

Version 14.1.0

# Step 4h: Update JDBC Connection Info for Databases

ca technologies

CA Identity Suite  
Virtual Appliance

HelpLogout

Please configure services database credentials

Clear AllTest All Connections

Workpoint DB

IP Address

192.168.242.135

Port

1433

Database Name

WPDS

Username

igdba

Password


.....

IM Identity Manager

Recommendation: Use notepad or Notepad++ ; with JDBC Connection info available to copy-n-paste the same information five (5) times

Non ProductionVersion 14.1.0

# Step 4i: Test All Connections before proceeding

 CA Identity Suite  
Virtual Appliance

[? Help](#) [Logout](#)

IP Address

Please configure services database credentials

Clear All

Test All Connections

Port

1433

Database Name

WPDS

Username

igdba

Password

.....

...

IM

Identity Manager

define

IP

Identity Portal

define

# Step 4j: Successful JDBC configuration will be GREEN

ca technologies

CA Identity Suite  
Virtual Appliance

[? Help](#)

[Logout](#)

Please configure services database credentials

Workpoint DB

Clear All

Database configuration saved

IP Address

192.168.242.135

Port

1433

Database Name

WPDS

Username

igdba

Password

.....

...

OK

IM

Identity Manager

define

IP


Identity Portal

define

Non Production

Version 14.1.0

# Step 4k: Successful JDBC configuration will be GREEN

 CA Identity Suite  
Virtual Appliance

Help Logout

Please configure services database credentials

Clear All

Test All Connections

OK

Workpoint DB

IP Address

192.168.242.135

Port

1433

Database Name

WPDS

Username

igdba

Password

●●●●●●●●

OK

# Step 4l: Successful JDBC configuration will be GREEN

 CA Identity Suite  
Virtual Appliance

HelpLogout

Please configure services database credentials

Clear AllTest All Connections

Reports DB

IP Address

192.168.242.135

Port

1433

Database Name

REPORT\_DB

Username

igdba

Password


••••••••

OK

Workpoint DB



# Step 4m: Successful JDBC configuration will be GREEN

 CA Identity Suite  
Virtual Appliance

Help Logout

Please configure services database credentials

Clear All

Test All Connections

OK

Tickets DB

IP Address  
192.168.242.135

Port  
1433


Database Name  
TICKET\_DB


Username  
igdba

Password  
●●●●●●●●

OK

# Step 4n: Successful JDBC configuration will be GREEN

 CA Identity Suite  
Virtual Appliance

 Help  Logout

Please configure services database credentials

Clear All

Test All Connections

MS SQL

Eurekify

IP Address

192.168.242.135

Port

1433

Database Name

EUREKIFY\_SDB

Username

igdba

Password

••••••••

OK

Tickets DB

Non Production

Version 14.1.0

# Step 5a: Configure IP Database in MS-SQL with same login ID

May be done earlier with IG configurations in MS-SQL

- Default collation
- Ownership: login ID

**New Database**

Select a page  
General  
Options  
Filegroups

Script Help

Database name: IDENTITY\_PORTAL\_DB  
Owner: igdba  
☒ Use full-text indexing

Database files:

Logical Na...	File Ty...	Filegroup	Initial Size (...)	Autogrowth / Max
IDENTITY...	ROW...	PRIMARY	3	By 1 MB, Unlimite
IDENTITY...	LOG	Not Applic...	1	By 10 percent, U

Connection  
Server: WIN-PL4705ECG76\SQLE  
Connection: sa  
[View connection](#)

Progress  
Ready

Add Remove

OK Cancel

# Step 5b: Configure IP Database in vApp JDBC

CA Identity Suite  
Virtual Appliance

Help Logout

Please configure services database credentialsClear AllTest All Connections

Type

MS SQL

Identity Portal

IP Address

192.168.242.135

Port

1433

Database Name

IDENTITY\_PORTAL\_DB


Username

igdba

Password

●●●●●●●●

# Step 5c: Validate IP Database in vApp JDBC

 CA Identity Suite  
Virtual Appliance

Help Logout

Please configure services database credentialsClear All

Database configuration saved

Type  
MS SQL

Identity Portal

IP Address  
192.168.242.135

Port  
1433

Database Name  
IDENTITY\_PORTAL\_DB

Username  
igdba

Password  
••••••••

OK

# Step 6: Validate IG & IP Configuration is Supported in vApp

The screenshot displays the CA Identity Suite Virtual Appliance interface. The top navigation bar includes the CA Technologies logo, the text "CA Identity Suite Virtual Appliance", and links for "Help" and "Logout". The main content area features a grid of component validation cards. A green rectangular box highlights the first card, which contains the following items:

- Identity Governance (IG icon)
- Identity Portal (IP icon)
- Oracle Database Express 11g (DB icon)
- An "Implement this" button


The second card in the grid contains:

- Identity Portal (IP icon)
- Oracle Database Express 11g (DB icon)
- An "Implement this" button

A dark grey text box at the bottom of the interface contains the following note:


Note: The vApp HELP Guide will not list external databases. Focus on the CA Solution components for validation

# Step 7a: Deploy IG and IP

 CA Identity Suite  
Virtual Appliance

Help Logout

changes not deployed yet

 Services

IP Identity Portal

IM Identity Manager


IG Identity Governance

PS Provisioning Server

CS Connector Server

US User Store

CL Central Log Server


 Machines (1) [+ Add Machine](#)

vapp-01  
192.168.242.146  
4024MB / 9888MB

IG IP

REMOVE ANY OTHER SERVICES  
- Other services may initially populate.

Drag out to remove

 External Database

Identity Governance

Identity Portal

Edit

ENSURE THE EXTERNAL DATABASE  
SECTION IS DEFINED HERE

Non Production

Version 14.1.0

# Step 7b: Monitor IG and IP Deployment

## Deploying solution

Deployment in progress .

- 1 Generating and distributing public SSH key
- 2 Synchronizing cluster configurations
- 3 Initializing services
- 4 Updating post-initialization, Cluster and High-availability configurations
- 5 Starting services
- 6 Finalizing installation



vapp. [redacted] .01 Generating and distributing public SSH key  
192.168.242.146  
Private IP: 192.168.242.146    Public IP:

MB / MB

IG

Identity Governance

IP

Identity Portal



# Step 7b: Note DB Tables for IG and IP Deployment



CA Identity Suite  
Virtual Appliance

Help

Logout

Deploying solution

Deployment in progress .



Generating and distributing  
public SSH key



Synchronizing cluster  
configurations



Initializing services



Updating post-initialization,  
Cluster and High-availability  
configurations



Starting services



Finalizing installation



vapp[ ]\_01  
192.168.242.146

Populating tables for Identity Governance on the embedde...



Identity Governance



Identity Portal

Ignore part of message that mention “embedded”.  
The external database is being populated.

Note: The following database will auto-create tables upon restart of the J2EE services  
IG WPDS, IP DB, IM (all)

The following databases if dropped, will need this re-deployment process to rebuild the tables  
IG (Eurekify\_db, report\_db, ticket\_db)

# Step 7c: Starting of IG and IP Services

## Deploying solution

Hang in there, this might take a while ..

✓ Generating and distributing public SSH key

✓ Synchronizing cluster configurations

✓ Initializing services

✓ Updating post-initialization, Cluster and High-availability configurations

✓ Starting services

6 Finalizing installation



vapp-01 Starting services  
192.168.242.146

### Identity Governance



✓ Initialized  
✓ Dependencies fulfilled  
○ Starting

### Identity Portal



✓ Initialized  
✓ Dependencies fulfilled  
○ Starting

# Step 7d: Optional: Address this issue if it occurs



CA Identity Suite  
Virtual Appliance

Help

Logout

## Deploying solution

- ✓ Generating and distributing public SSH key
- ✓ Synchronizing cluster configurations
- ✓ Initializing services
- ✓ Updating post-initialization, Cluster and High-availability configurations
- ✓ Starting services
- 6 Finalizing installation



vapp\_01 Starting services  
192.168.242.146

### Identity Governance



- ✓ Initialized
- ✓ Dependencies fulfilled
- ✓ Started

### Identity Portal



- ✓ Initialized
- ✓ Dependencies fulfilled
- Starting

This screen will/may NOT advance.

The post-creation task to define an IG connector in IP,  
does not seem to complete for earlier releases of vApp  
- Resolved in r14-1cr04

<https://docops.ca.com/ca-identity-suite/14-1/EN/release-notes/ca-identity-suite-virtual-appliance-release-notes/virtual-appliance-service-packs-and-cumulative-patches-14-1/latest-cumulative-patches-14-1/cp-va-140100-0004-release-notes>



<https://support.ca.com/us/knowledge-base-articles.TEC1907759.html>

# Step 7e: Optional: Address this issue if it occurs


```
config@vapp_nordstrom_01:~  
Using username "config".  
  
config@192.168.242.146's password:  
Last login: Thu Nov 16 12:43:54 2017  
  
CA Identity Suite Virtual Appliance version 14.1.0  
Server IP addresses: 192.168.242.146  
Enabled services:  
External Database 192.168.242.135 [OK] Connection to IP database (192.168.242.135:1433) succeeded  
[OK] Connection to IG database (192.168.242.135:1433) succeeded  
Identity Portal 192.168.242.146 [OK] WildFly (Portal) is running (pid 624), port 8081  
[ERROR] Identity Portal is not available  
Identity Governance 192.168.242.146 [OK] WildFly (IG) is running (pid 1391), port 8082  
[OK] IG is running  
[OK] Java heap size used by Identity Governance: 718MB/1512MB (47%)  
=== LAST UPDATED: Fri Nov 17 01:15:10 CST 2017 ===  
config@vapp_01 VAPP-14.1.0 (192.168.242.146):~ >
```


IP management console is available, but the IP user console needs additional post-install configuration steps completed.  
- Resolved in r14-1cr04


# Step 7f: Optional: Address this issue if it occurs

 CA Identity Suite  
Virtual Appliance

Help Logout


 Servers (1) Last updated 4 minutes ago | [Refresh](#)

 **vapp\_01**  
192.168.242.146 3637MB / 9888MB


**Identity Governance**  
[Management console](#)

- ✓ [OK] WildFly (IG) is running (pid 1391), port 8082
- ✓ [OK] IG is running
- ✓ [OK] Java heap size used by Identity Governance: 729MB/1512MB (48%)

[less](#)

**Identity Portal**  
[Management console](#) | [User console](#)

- ✓ [OK] WildFly (Portal) is running (pid 624), port 8081
- ⚠ [ERROR] Identity Portal is not available

 External Database

- Identity Manager
- Identity Governance
- Identity Portal
- Status

IP management console is available, but the IP user console needs additional post-install configuration steps completed. - Resolved in r14-1cr04

<https://docops.ca.com/ca-identity-suite/14-1/EN/release-notes/ca-identity-suite-virtual-appliance-release-notes/virtual-appliance-service-packs-and-cumulative-patches-14-1/latest-cumulative-patches-14-1/cp-va-140100-0004-release-notes>

<https://support.ca.com/us/knowledge-base-articles.TEC1907759.html>

✓ Service is running properly

Non-Production

Version 14.1.0

# Step 7g: Optional: Login to IP Admin Management Console



**Identity Portal**  
Management console

## Welcome



**Admin UI**

Configure your Identity Portal environment



**Deployment Xpress Market Place**

Search and deploy new use cases from the market place

# Step 7h: Optional: Setup/Connectors – Create IG Connector

The screenshot shows the CA Identity Portal AdminUI interface. The top navigation bar includes 'Modules', 'Setup' (selected), 'Elements', 'Tools', 'Localization', 'Branding', and 'Market Place'. The left sidebar shows 'Settings' expanded with 'Connectors' selected, along with 'General Configuration', 'Managed Object Attributes', and 'Gui Configuration'. The main content area is titled 'Connectors' and features a '+ Create' button. A dark blue box with white text in the center of the main area reads: 'Create a NEW IG connector (if missing)'.

CA Identity Portal  
AdminUI

Modules Setup Elements Tools Localization Branding Market Place

Settings

Connectors

General Configuration

Managed Object Attributes

Gui Configuration

Connectors

+ Create

Create a NEW IG connector (if missing)

# Step 7h: Optional: Create IG Connector as Main Connector

**+ Create Connector**

✕ ↺ + Create

1 Details 2 Configuration 3 Advanced

Name \*  
IG

Tag \*  
CONNECTOR\_IG

Type \*  
CA Identity Governance 14

Connector Login Source  
Main Connector user id

☒ Main Connector  
☐ Debug Mode

Next Create



# Step 7i: Optional: Update Credentials & SSL Port

The screenshot shows the 'Create Connector' dialog in the CA Identity Portal AdminUI. The dialog has a blue header with a close button (X) and a refresh button. The background interface includes a sidebar with 'Settings', 'Connectors', 'General Configuration', 'Managed Object At', and 'Gui Configuration'. The top navigation bar contains 'Modules', 'Setup', 'Elements', 'Tools', 'Localization', 'Branding', and 'Market Place'. The 'Create Connector' dialog is currently on the 'Configuration' step (indicated by a blue circle with '2'). The 'Details' step (1) is completed, and the 'Advanced' step (3) is next. The configuration fields are as follows:

- Admin Name \***: AD1\EAAdmin
- Admin password \***: Masked with 10 dots
- Server name \***: 192.168.242.146
- Server port \***: 443
- Enable SSL**: ☒
- Enable Advanced Logging**: ☒
- Domain Prefix Method**: (Label only, no input)

At the bottom right of the dialog, there are two buttons: 'Next' (blue) and 'Create' (grey).

# Step 7j: Optional: Select All; Then Click Create

The screenshot displays the CA Identity Portal AdminUI interface. A modal dialog titled '+ Create Connector' is open, showing a progress bar with three steps: 'Details' (checked), 'Configuration' (checked), and 'Advanced' (indicated by a '3'). The 'Managed Object' checkbox is checked. A message box states: 'No data will display for All, but is required to advance and allow the Create Button to be used.' The 'Create' button is highlighted with a green box.

CA Identity Portal  
AdminUI

Modules Setup Elements Tools Localization Branding Market Place

+ Create Connector

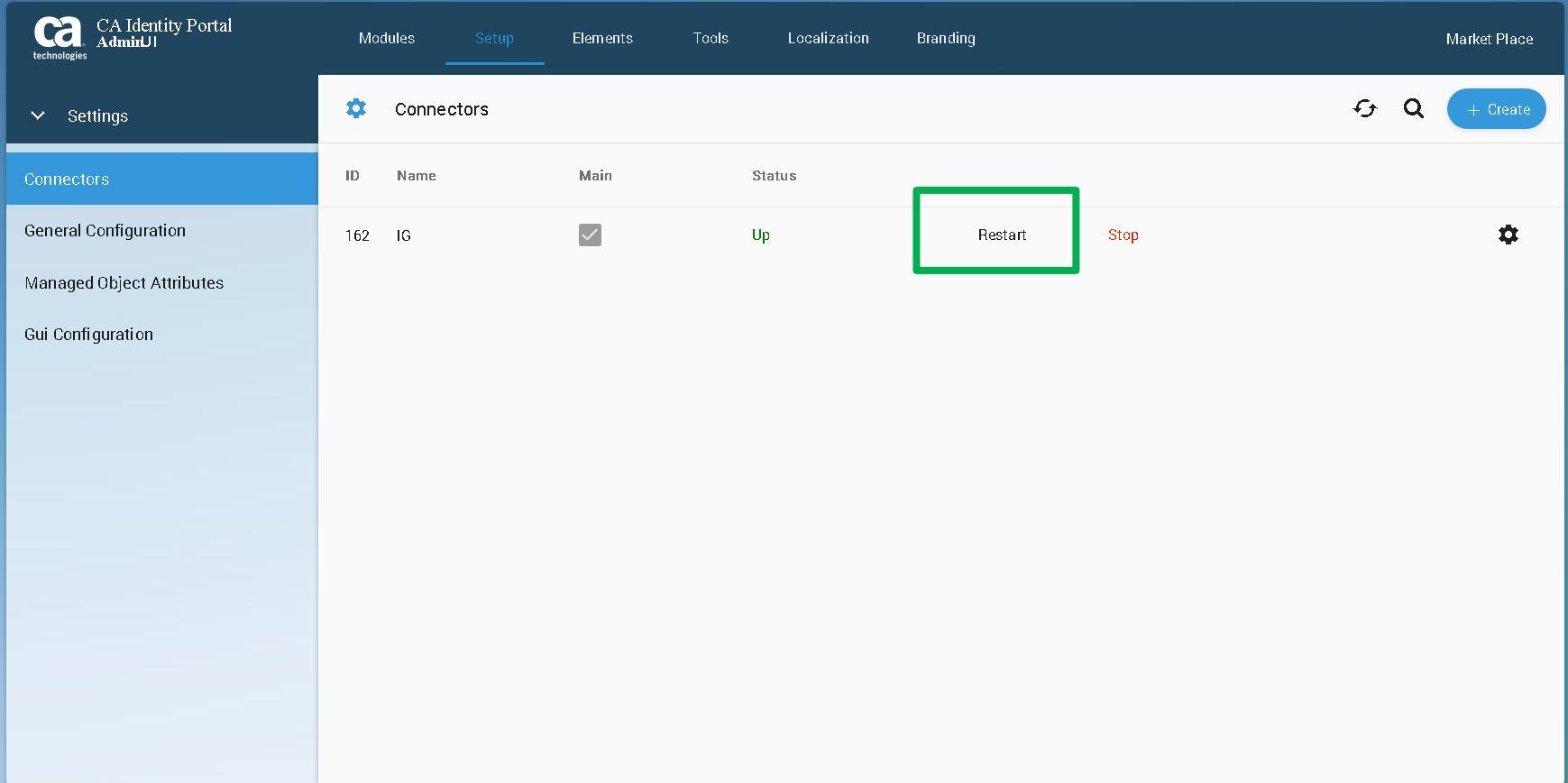
Details Configuration 3 Advanced

Managed Object ☒

No data will display for All, but is required to advance and allow the Create Button to be used.

Next Create

# Step 7k: Optional: Restart the new IG Connector to validate



The screenshot displays the CA Identity Portal AdminUI interface. The top navigation bar includes 'Modules', 'Setup' (selected), 'Elements', 'Tools', 'Localization', 'Branding', and 'Market Place'. The left sidebar shows 'Settings' expanded, with 'Connectors' selected. The main content area is titled 'Connectors' and features a table with the following data:

ID	Name	Main	Status	Actions
162	IG	<input checked="" type="checkbox"/>	Up	<div><div>Restart</div><div>Stop</div></div>

The 'Restart' button in the actions column for the IG connector is highlighted with a green rectangular box. A gear icon for configuration is also visible to the right of the 'Stop' button.

# Step 7I: Optional: Add missing primary UserID attribute

CA Identity Portal  
AdminUI

Modules **Setup** Elements Tools Localization Branding Market Place

Settings

Connectors

General Configuration

**Managed Object Attributes**

Gui Configuration

Edit Managed Object Attributes Save

USER ATTRIBUTES GROUP ATTRIBUTES

Display Name	Connector	Backend Name	Searchable
UserID	IG	UserName	<input checked="" type="checkbox"/>

[+ Add User Attribute](#)

Add the mandatory required attribute of USERID.

- Mark as Searchable
- Use the IG Connector & Backend Name = UserName
- Add in other attribute if you wish

# Step 7m: Optional: Restart IG Connector

CA Identity Portal AdminUI

Modules Setup Elements Tools Localization Branding Market Place

Settings

Connectors

General Configuration

Managed Object Attributes

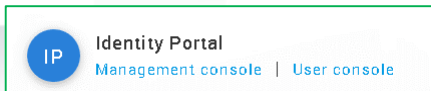
Gui Configuration

Connectors

ID	Name	Main	Status			
162	IG	<input checked="" type="checkbox"/>	Up	Restart	Stop	

Refresh the IG Connector; to allow IP User Console to be aware of the change

# Step 7m: Launch IP User Console



IP User Console now loads



CA Identity Portal

Username

AD1\Eadmin

Password

[Forgot your password?](#)

[Register](#)

Login

Authenticate with an ID from the userstore.

Note: Since IG only has the current single userID in its IG objectstore of AD1\Eadmin, log in with this ID.

# Step 7n: View default IP modules



Home



My Profile

Add in extra modules to see more options

# Step 7o: Optional: Add in all predefined IP Modules

CA Identity Portal  
AdminUI

+ Create new module

My Modules

- Home
- My Profile
- Access
- My Requests
- Tasks
- Certifications
- Dashboard
- Apps Launchpad

Modules Setup Elements Tools Localization Branding Market Place

⚙ Edit Module: Apps Launchpad Save

DETAILS PROFILES ICON APPS

Title \*  
**Apps Launchpad**

Tag \*  
**MODULE\_Apps Launchpad**


Type \*  
Apps Launchpad

Add in all modules to view possible screens to use


Module created successfully





# Step 7p: Optional: View all predefined IP Modules





CA Identity Portal


 Home


 My Profile


 Access


 My Requests

 Tasks





 Certifications

 Dashboard


 Apps Launchpad




CA technologies




Home




My Profile




Access




My Requests




Tasks



Certifications



Dashboard





Apps Launchpad

All pre-defined modules loaded in the IP User Console


# Step 8a: Confirm no startup issues for IG/IP services

```
type=1105 audit(1510910676.193:6913): user pid=3018 uid=0 auid=500 ses=327 msg='
op=PAM:session_open acct="root" exe="/usr/bin/sudo" hostname=? addr=? terminal=/
dev/tty1 res=success'
CA Identity Suite Virtual Appliance version 14.1.0
Server IP addresses: 192.168.242.146
Enabled services:
External Database 192.168.242.135 [OK] Connection to IP database (192.168.24
2.135:1433) succeeded
[OK] Connection to IG database (192.168.24
2.135:1433) succeeded
Identity Portal 192.168.242.146 [OK] WildFly (Portal) is running (pid 624)
, port 8081
[OK] Identity Portal is available
[OK] Java heap size used by Identity Porta
l: 589MB/1512MB (38%)
Identity Governance 192.168.242.146 [OK] WildFly (IG) is running (pid 1391), p
ort 8082
[OK] IG is running
[OK] Java heap size used by Identity Gover
nance: 487MB/1512MB (32%)
=== LAST UPDATED: Fri Nov 17 03:24:39 CST 2017 ===
type=1106 audit(1510910679.628:6914): user pid=3018 uid=0 auid=500 ses=327 msg='
op=PAM:session_close acct="root" exe="/usr/bin/sudo" hostname=? addr=? terminal=
/dev/tty1 res=success'
```


# Step 8b: Confirm no startup issues for IG/IP services


**CA Identity Suite**  
Virtual Appliance

Help Logout

 Servers (1)


Last updated 41 seconds ago | [Refresh](#)

**vapp\_01**  
192.168.242.1463568MB / 9888MB

**Identity Governance**  
[Management console](#)


- ✓ [OK] WildFly (IG) is running (pid 1391), port 8082
- ✓ [OK] IG is running
- ✓ [OK] Java heap size used by Identity Governance: 478MB/1512MB (31%)

[less](#)

**Identity Portal**  
[Management console](#) | [User console](#)

- ✓ [OK] WildFly (Portal) is running (pid 624), port 8081
- ✓ [OK] Identity Portal is available
- ✓ [OK] Java heap size used by Identity Portal: 592MB/1512MB (39%)

[less](#)

 External Database

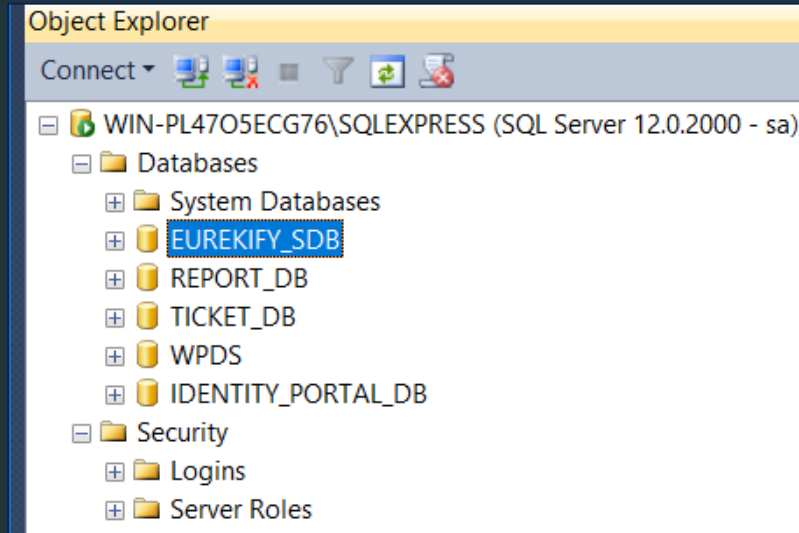
- Identity Manager
- Identity Governance
- Identity Portal

**Status** ✓ Service is running properly

# Advance Topic: How to force Re-Deployment/Rebuild of IG/IP Database Tables

EUREKIFY\_SDB  
REPORT\_DB  
TICKET\_DB  
WPDS

IDENTITY\_PORTAL\_DB



# Step 1: Shutdown active connections

```

PuTTY (inactive)
Using username "config".

config@192.168.242.146's password:
Last login: Tue Nov 21 15:46:55 2017 from 192.168.242.1

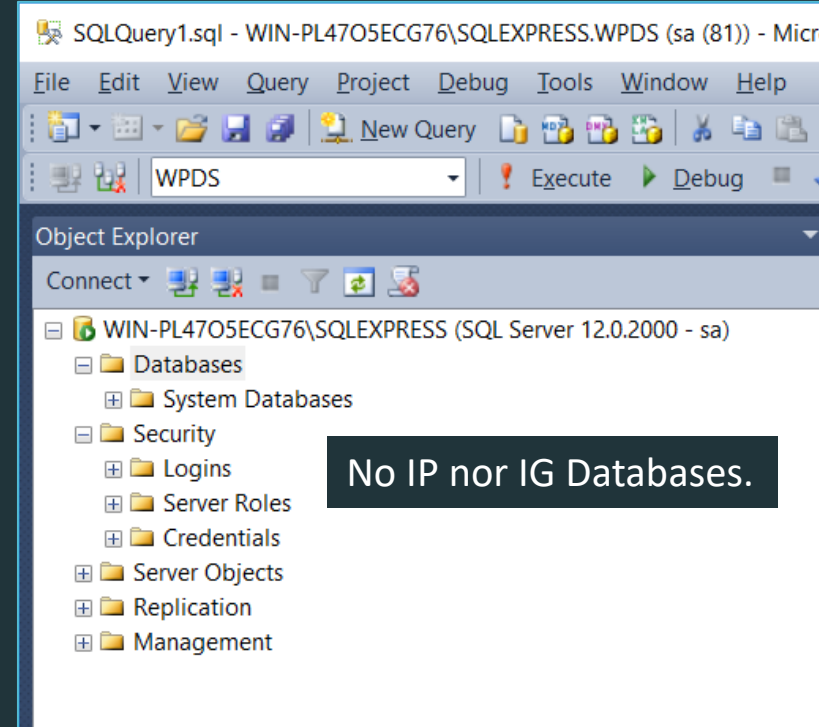
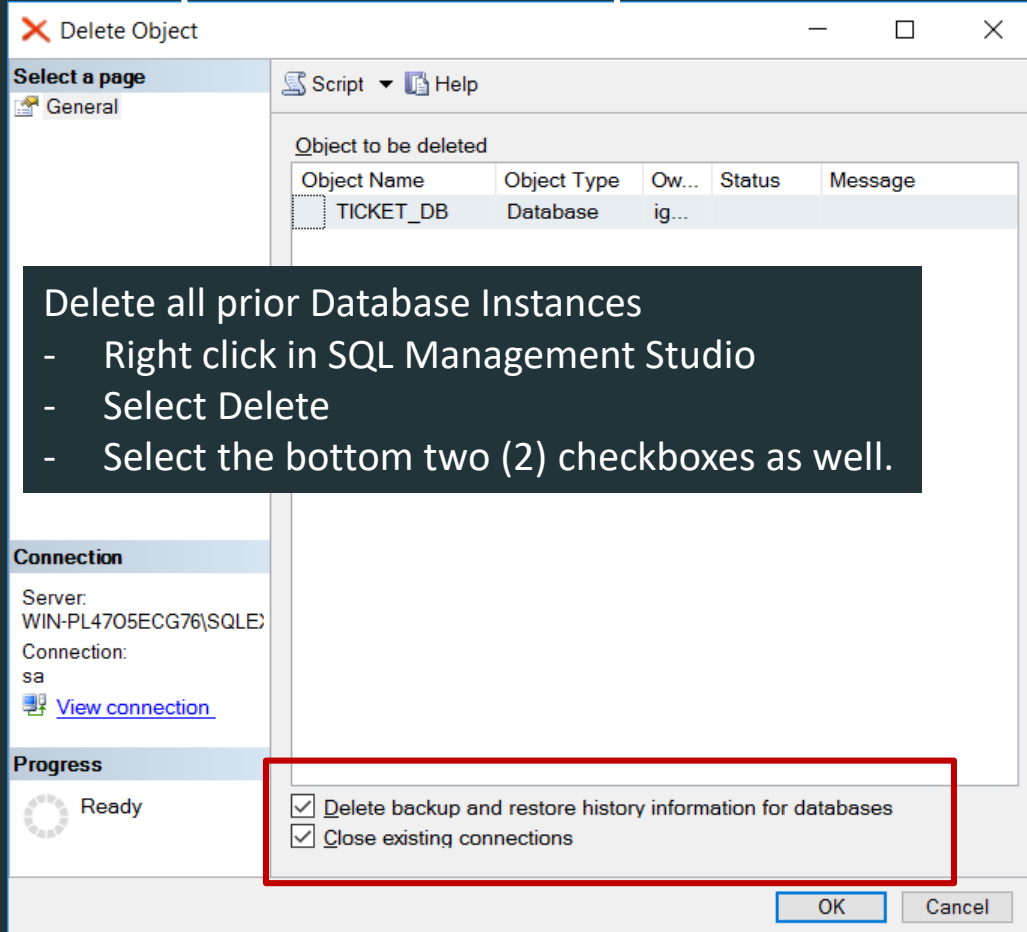
CA Identity Suite Virtual Appliance version 14.1.0
Server IP addresses:          192.168.242.146
Enabled services:
External Database      192.168.242.135 [OK] Connection to IP database (192.168.242.135:1433) succeeded
                                   [OK] Connection to IG database (192.168.242.135:1433) succeeded
Identity Portal        192.168.242.146 [OK] WildFly (Portal) is running (pid 15875), port 8081
                                   [OK] Identity Portal is available
                                   [OK] Java heap size used by Identity Portal: 464MB/1512MB (30%)
Identity Governance    192.168.242.146 [OK] WildFly (IG) is running (pid 16680), port 8082
                                   [OK] IG is running
                                   [OK] Java heap size used by Identity Governance: 592MB/1512MB (39%)
=== LAST UPDATED: Tue Nov 21 16:05:04 CST 2017 ===
config@vapp_01 VAPP-14.1.0 (192.168.242.146):~ > poweroff

Broadcast message from config@vapp_01
      (/dev/pts/0) at 16:08 ...

The system is going down for power off NOW!

```

# Step 2: Delete all prior DB & their associated info



# Step 3: Start up vApp & view/run Status Message “s”

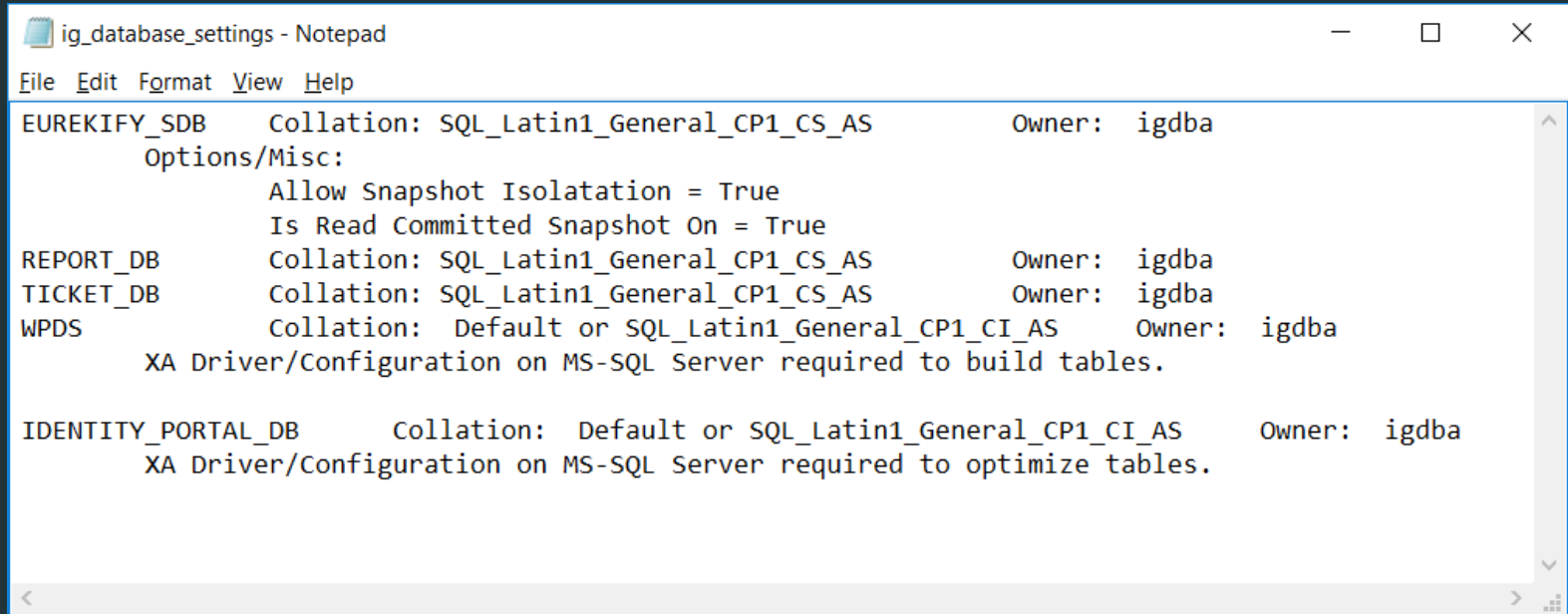
Note that vApp IG & IP DB definitions still exist, but the IP & IG DB do not

```
config@vapp_01 VAPP-14.1.0 (192.168.242.146):~ > s
CA Identity Suite Virtual Appliance version 14.1.0
Server IP addresses:      192.168.242.146
Enabled services:
External Database        192.168.242.135 [OK] Connection to IP database (192.168.242.135:1433) succeeded
                             [OK] Connection to IG database (192.168.242.135:1433) succeeded
Identity Portal          192.168.242.146 [OK] WildFly (Portal) is running (pid 3521), port 8081
                             [ERROR] Identity Portal is not available
Identity Governance      192.168.242.146 [OK] WildFly (IG) is running (pid 2136), port 8082
                             [ERROR] IG is not running
=== LAST UPDATED: Tue Nov 21 16:27:37 CST 2017 ===
```

# Step 4a: Rebuild IG / IP Databases

```
EUREKIFY_SDB      Collation: SQL_Latin1_General_CP1_CS_AS      Owner: igdba
Options/Misc:
    Allow Snapshot Isolation = True
    Is Read Committed Snapshot On = True
REPORT_DB         Collation: SQL_Latin1_General_CP1_CS_AS      Owner: igdba
TICKET_DB         Collation: SQL_Latin1_General_CP1_CS_AS      Owner: igdba
WPDS              Collation: Default or SQL_Latin1_General_CP1_CI_AS Owner: igdba
XA Driver/Configuration on MS-SQL Server required to build tables.

IDENTITY_PORTAL_DB Collation: Default or SQL_Latin1_General_CP1_CI_AS Owner: igdba
XA Driver/Configuration on MS-SQL Server required to optimize tables.
```



ig\_database\_settings - Notepad

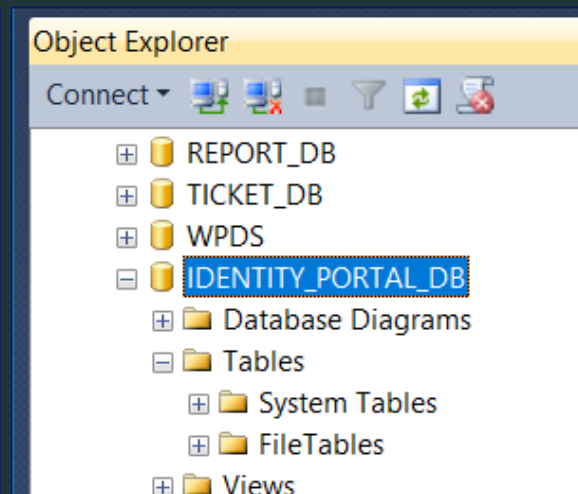
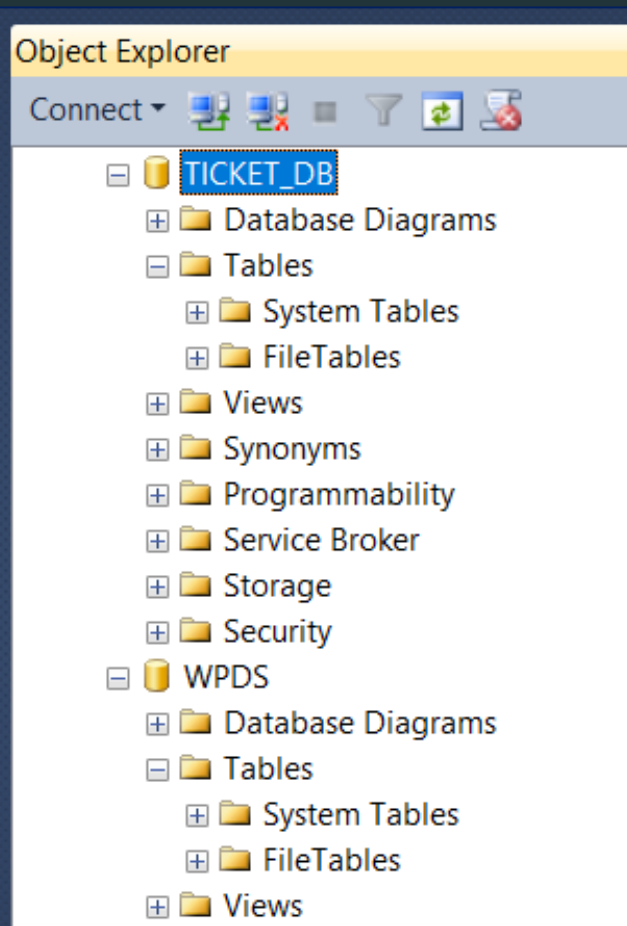
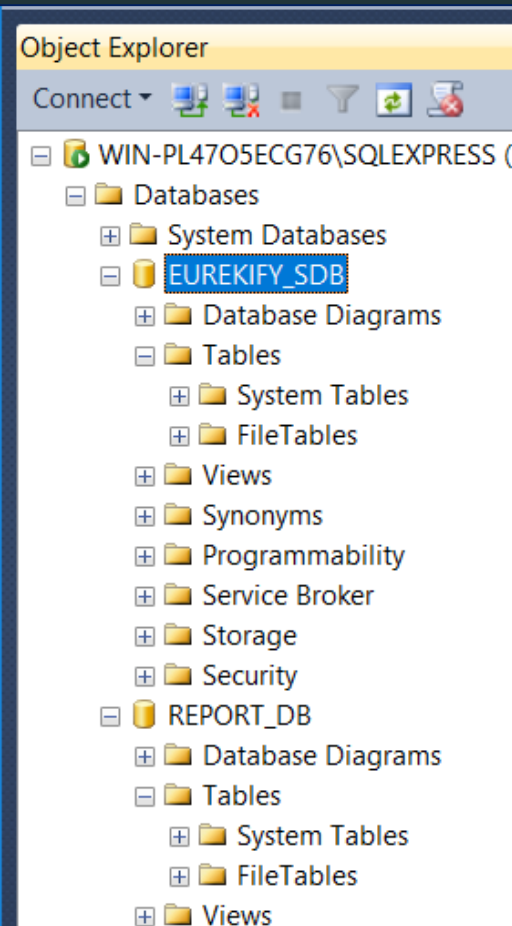
File Edit Format View Help

```
EUREKIFY_SDB      Collation: SQL_Latin1_General_CP1_CS_AS      Owner: igdba
Options/Misc:
    Allow Snapshot Isolation = True
    Is Read Committed Snapshot On = True
REPORT_DB         Collation: SQL_Latin1_General_CP1_CS_AS      Owner: igdba
TICKET_DB         Collation: SQL_Latin1_General_CP1_CS_AS      Owner: igdba
WPDS              Collation: Default or SQL_Latin1_General_CP1_CI_AS Owner: igdba
XA Driver/Configuration on MS-SQL Server required to build tables.

IDENTITY_PORTAL_DB Collation: Default or SQL_Latin1_General_CP1_CI_AS Owner: igdba
XA Driver/Configuration on MS-SQL Server required to optimize tables.
```



# Step 4b: View of IG/IP Databases prior to re-population



# Step 5a: Reboot Server to identify which DB are NOT Populated by “reboot action”

```
config@vapp_01 VAPP-14.1.0 (192.168.242.146):~ > reboot

Broadcast message from config@vapp_01
(/dev/pts/0) at 16:38 ...

The system is going down for reboot NOW!
config@vapp_01 VAPP-14.1.0 (192.168.242.146):~ > █
```

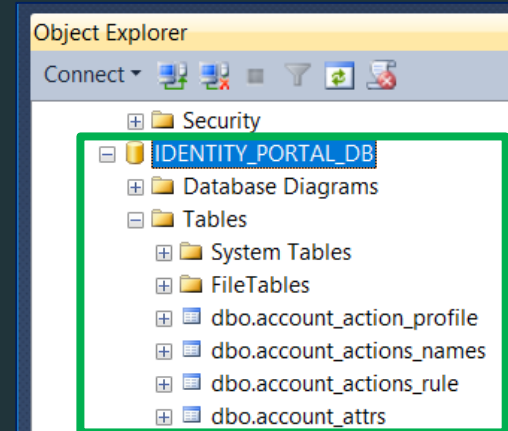
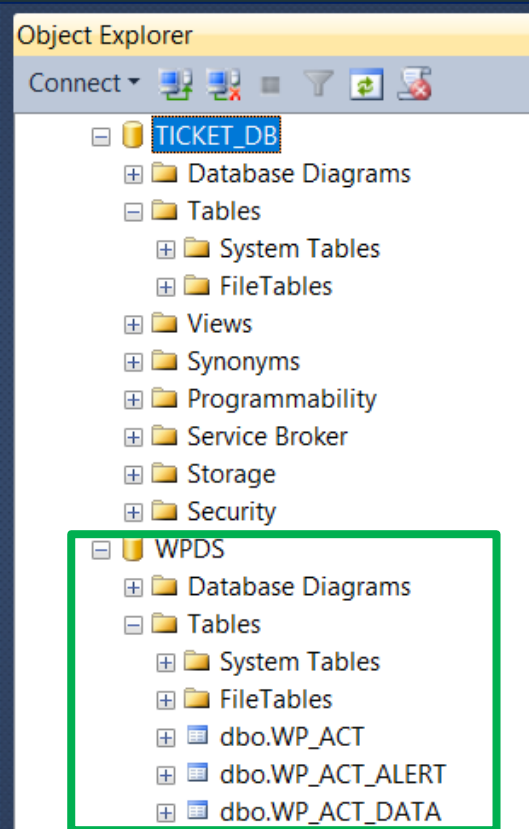
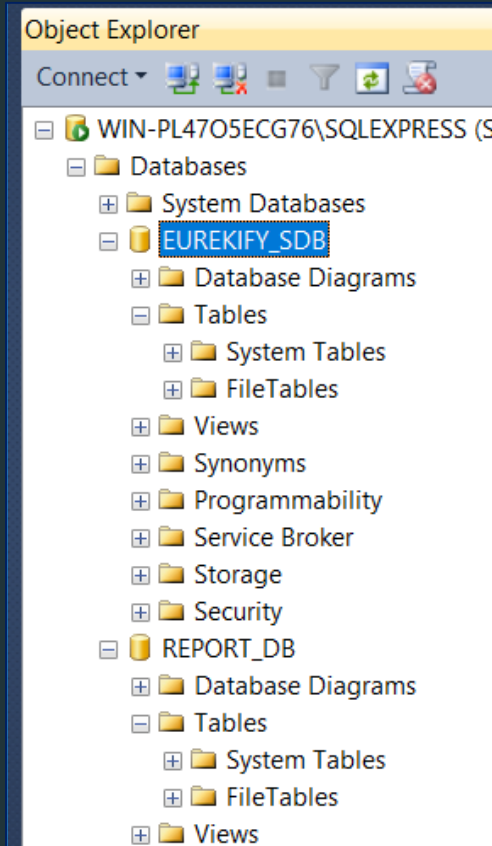
CentOS 6.4

```
config@vapp_01 VAPP-14.1.0 (192.168.242.146):~ > s

CA Identity Suite Virtual Appliance version 14.1.0
Server IP addresses: 192.168.242.146
Enabled services:
External Database 192.168.242.135 [OK] Connection to IP database (192.168.242.135:1433) succeeded
[OK] Connection to IG database (192.168.242.135:1433) succeeded
Identity Portal 192.168.242.146 [OK] WildFly (Portal) is running (pid 3521), port 8081
[ERROR] Identity Portal is not available
Identity Governance 192.168.242.146 [OK] WildFly (IG) is running (pid 2136), port 8082
[ERROR] IG is not running
=== LAST UPDATED: Tue Nov 21 16:35:14 CST 2017 ===
config@vapp_01 VAPP-14.1.0 (192.168.242.146):~ > █
```

# Step 5b: IG WPDS & IP DB Auto rebuild Tables

\*\*\* WPDS will ONLY auto-rebuild if XA Driver & Configuration is deployed to MS-SQL Server(s)





**NO AUTO-REBUILD OF DB:**



IG EUREKIFY\_SDB  
IG REPORT\_DB  
IG TICKET\_DB


**AUTO-REBUILD OF DB:**


IG WPDS  
IP IDENTITY\_PORTAL\_DB


# Step 6: View IG & IP base J2EE Services only available


**CA Identity Suite**  
Virtual Appliance


 Help  Logout


 **vapp**    .01  
192.168.242.146 3030MB / 9888MB


 **Identity Governance**  
[Management console](#)

 **Identity Portal**  
[Management console](#) | [User console](#)

 [OK] WildFly (IG) is running (pid 2160), port 8082

 [ERROR] IG is not running

 [OK] WildFly (Portal) is running (pid 3615), port 8081

 [ERROR] Identity Portal is not available

 **External Database**

Identity Manager

Identity Governance

Identity Portal

**Status**  Service is running properly  
[more details](#)

technologies

# Step 7a: Click Setup/Deploy to force IG Database Refresh

The screenshot displays the CA Identity Suite Virtual Appliance management interface. At the top, the header includes the CA logo, 'CA Identity Suite Virtual Appliance', and links for 'Help' and 'Logout'. Below the header, a instruction bar reads 'Drag & Drop Services to desired machines' with a 'Deploy' button on the right.

On the left, under the 'Services' section, there is a list of service components, each in a colored pill-shaped button:

- IP Identity Portal (blue)
- IM Identity Manager (blue)
- IG Identity Governance (blue)
- PS Provisioning Server (purple)
- CS Connector Server (purple)
- US User Store (orange)
- CL Central Log Server (yellow)

On the right, under the 'Machines (1)' section, there is a '+ Add Machine' link and a list of machines. The first machine is 'vapp-01' with IP '192.168.242.146' and '4024MB / 9888MB' of memory. A dashed box on the machine card contains the 'IG' and 'IP' service icons. Below the machine card, an 'External Database' section lists 'Identity Manager' and 'Identity Governance'.

# Step 7b: View message for rebuild of DB tables



## Deploying solution

Deployment in progress ..



Generating and distributing public SSH key



Synchronizing cluster configurations



Initializing services



Updating post-initialization, Cluster and High-availability configurations



Starting services



Finalizing installation



vapp-01  
192.168.242.146

Populating tables for Identity Governance on the embedd...



Identity Governance

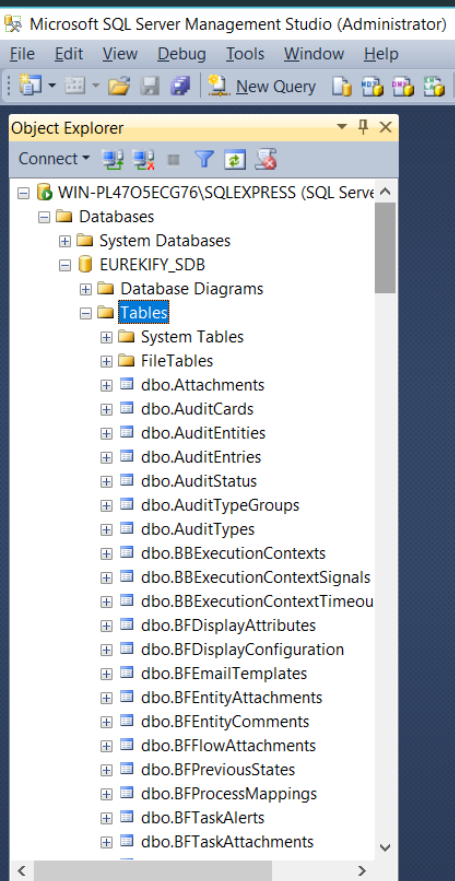


Identity Portal

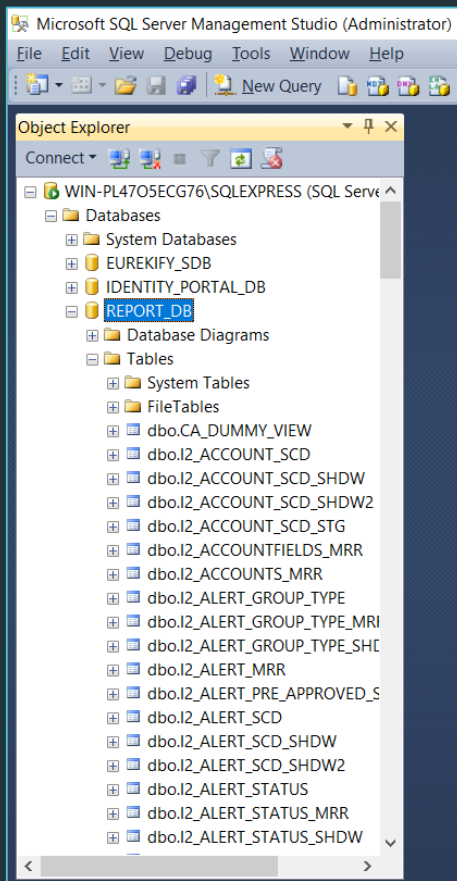
NOTE: This screen displays the phrase “embedded” ...

However, the external database configuration will be used.

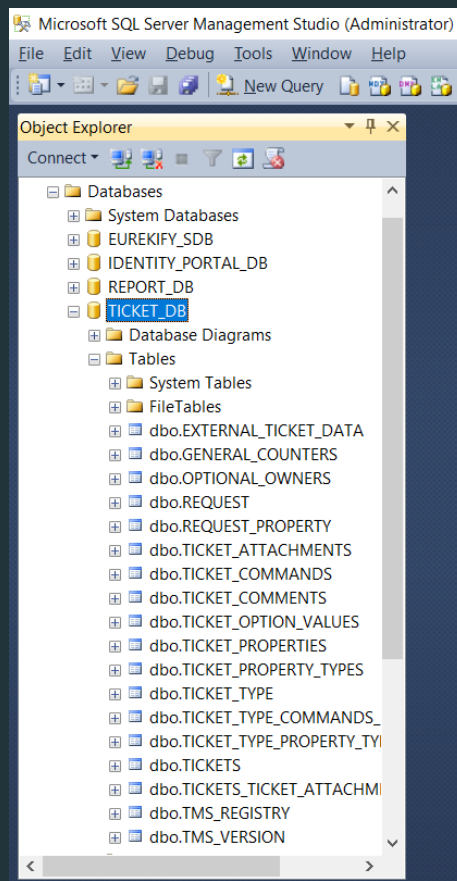
# Step 7c: View all IG DB tables populated



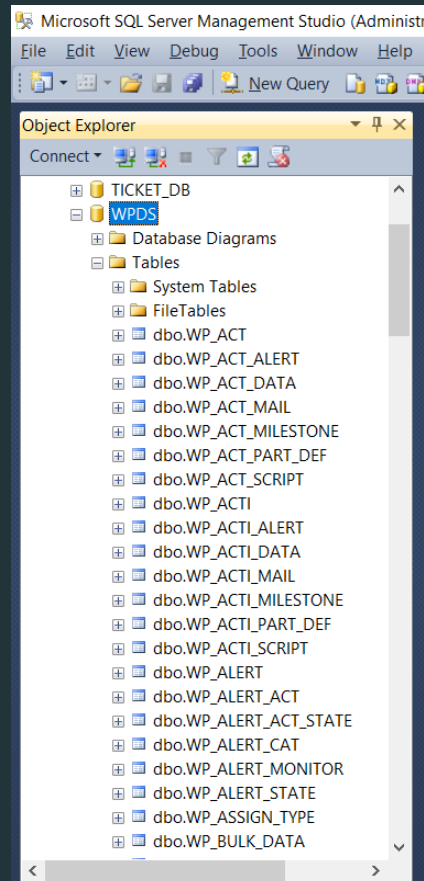
Ready



Ready




Ready




Ready


# Step 8a: Deployment Status Message should advance to the below messages


 CA Identity Suite  
Virtual Appliance


HelpLogout


Deploying solutionStill working ..


 Generating and distributing public SSH key


 Synchronizing cluster configurations

 Initializing services


 Updating post-initialization, Cluster and High-availability configurations




 Starting services


 Finalizing installation




 vapp-01  
192.168.242.146

Starting services

 **Identity Governance**


-  Initialized
-  Dependencies fulfilled
-  Started

 **Identity Portal**

-  Initialized
-  Dependencies fulfilled
-  Starting

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# Step 8b: Expect IG to start, but IP may not


- IG should restart. If not stop it via putty session and alias: restart\_ig
- IP will not start if vApp r14.1 cr03 or earlier due to missing two (2) configurations in IP: The IG Connector & primary identifier from IG
- If vApp screen does NOT advance, issue: restart\_ip or stop\_ip


```
config@vap [redacted]
config@vapp_ [redacted]_01 VAPP-14.1.0 (192.168.242.146):~ > s
CA Identity Suite Virtual Appliance version 14.1.0
Server IP addresses: 192.168.242.146
Enabled services:
External Database 192.168.242.135 [OK] Connection to IP database (192.168.242.135:1433) succeeded
[OK] Connection to IG database (192.168.242.135:1433) succeeded
Identity Portal 192.168.242.146 [OK] WildFly (Portal) is running (pid 12400), port 8081
[ERROR] Identity Portal is not available
Identity Governance 192.168.242.146 [OK] WildFly (IG) is running (pid 25011), port 8082
[OK] IG is running
[OK] Java heap size used by Identity Governance: 573MB/1512MB (37%)
=== LAST UPDATED: Tue Nov 21 16:57:38 CST 2017 ===
config@vapp_ [redacted]_01 VAPP-14.1.0 (192.168.242.146):~ > █
```


# Step 8c: Error due to missing IG Connector in IP

 CA Identity Suite  
Virtual Appliance


HelpLogout

 Servers (1)Last updated 8 seconds ago | [Refresh](#)


 vapp.01  
192.168.242.1461584MB / 9888MB

 **Identity Governance**  
Management console

✓ Service is running properly  
[more details](#)

 **Identity Portal**  
[Management console](#) | [User console](#)

✓ [OK] WildFly (Portal) is running (pid 11681), port 8081  
⚠ [ERROR] Identity Portal is not available

 External Database

Identity Manager

Identity Governance

Identity Portal

Status

✓ Service is running properly  
[more details](#)

# Step 8d: Optional Steps: Resolve IG / IP Configuration

https://192.168.242.146/sigma/admin/

CA Link Workday\_Notes Other F AppXpress

**Authentication required**  
https://192.168.242.146


Username

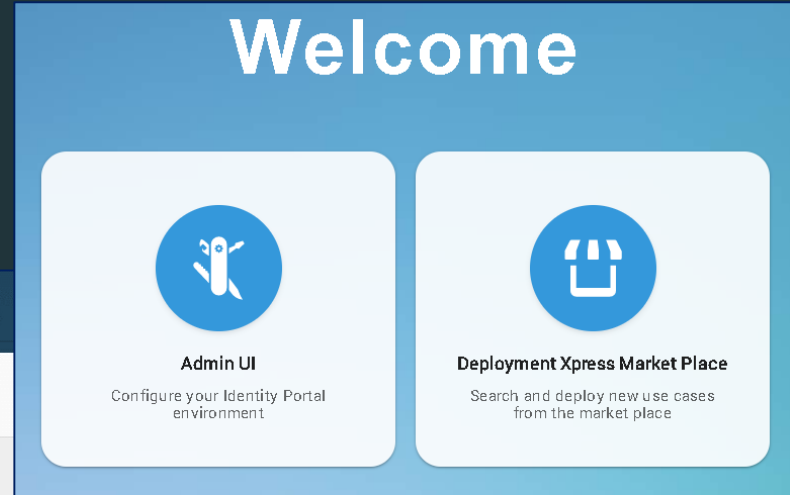
Password

**CA Identity Portal AdminUI**

Modules Setup Elements Tools Localization

My modules

  
**Home**



# Step 8e: Optional Steps: Resolve IG / IP Configuration

The screenshot displays the CA Identity Portal AdminUI interface. The top navigation bar includes links for Modules, Setup (active), Elements, Tools, Localization, Branding, and Market Place. On the left, a sidebar menu shows Settings, Connectors (selected), General Configuration, Managed Object Attributes, and Gui Configuration. The main content area is titled 'Connectors' and features a '+ Create' button. A modal window titled '+ Create Connector' is open, showing a three-step process: 1. Details, 2. Configuration (active), and 3. Advanced. The Configuration step includes fields for Name (\* IG), Tag (\* CONNECTOR\_IG), Type (\* CA Identity Governance 14), and Connector Login Source (Main Connector user id). There are checkboxes for Main Connector (checked) and Debug Mode (unchecked). The modal has 'Next' and 'Create' buttons at the bottom right.

CA Identity Portal  
AdminUI

Modules Setup Elements Tools Localization Branding Market Place

Settings

Connectors

General Configuration

Managed Object Attributes

Gui Configuration

Connectors

+ Create

+ Create Connector

1 Details 2 Configuration 3 Advanced

Name \*  
IG

Tag \*  
CONNECTOR\_IG

Type \*  
CA Identity Governance 14

Connector Login Source  
Main Connector user id

☒ Main Connector

☐ Debug Mode

Next Create

# Step 8f: Optional Steps: Resolve IG / IP Configuration

+ Create Connector

Details

2 Configuration

3 Advanced

Admin Name \*

AD1\EAdmin

Admin password \*

.....

Server name \*

192.168.242.146

Server port \*

443

☒ Enable SSL

☐ Enable Advanced Logging

Domain Prefix Method

CA Identity Portal  
AdminUI

ModulesSetupElementsToolsLocalizationBrandingMarket Place

Settings

Connectors

ID	Name	Main	Status
162	IG	<input checked="" type="checkbox"/>	Start

General Configuration  
Managed Object Attributes  
Gui Configuration

Connector created successfully

# Step 8g: Optional Steps: Resolve IG / IP Configuration

The screenshot shows the CA Identity Portal AdminUI interface. The top navigation bar includes 'Modules', 'Setup' (highlighted), 'Elements', 'Tools', 'Localization', 'Branding', and 'Market Place'. The left sidebar contains 'Settings', 'Connectors' (highlighted), 'General Configuration', 'Managed Object Attributes', and 'Gui Configuration'. The main content area is titled 'Connectors' and features a table with the following data:

ID	Name	Main	Status			
162	IG	<input checked="" type="checkbox"/>	Up	Restart	Stop	

The screenshot shows the 'Edit Managed Object Attributes' page in the CA Identity Portal AdminUI. The top navigation bar is identical to the previous screenshot. The left sidebar shows 'Settings', 'Connectors', 'General Configuration', 'Managed Object Attributes' (highlighted), and 'Gui Configuration'. The main content area has a title 'Edit Managed Object Attributes' and a 'Save' button. Below the title are two tabs: 'USER ATTRIBUTES' (highlighted) and 'GROUP ATTRIBUTES'. The 'USER ATTRIBUTES' tab contains a table with the following data:

Display Name	Connector	Backend Name	Searchable
<a href="#">+ Add User Attribute</a>			

# Step 8h: Optional Steps: Resolve IG / IP Configuration

CA Identity Portal AdminUI

Modules Setup Elements Tools Localization Branding Market Place

Settings

Connectors

General Configuration

Managed Object Attributes

Gui Configuration

### Edit Managed Object Attributes

Save

USER ATTRIBUTES GROUP ATTRIBUTES

Display Name	Connector	Backend Name	Searchable
<input type="text" value="UserID"/>	<input type="text" value="IG"/>	<input type="text" value="UserName"/>	<input checked="" type="checkbox"/>

+ Add User Attribute

Managed Object Attributes Saved Successfully

# Step 8i: Optional Steps: Resolve IG / IP Configuration

The screenshot shows the CA Identity Portal AdminUI interface. The top navigation bar includes 'Modules', 'Setup' (selected), 'Elements', 'Tools', 'Localization', 'Branding', and 'Market Place'. The left sidebar shows 'Settings' expanded, with 'Connectors' selected. The main content area displays a table of connectors. The first connector has ID 162, Name IG, and is marked as the Main connector. Its status is 'Up'. A 'Restart' button is visible next to the status, and a 'Stop' button is also present. A gear icon for configuration is on the far right of the row.

ID	Name	Main	Status	Actions
162	IG	<input checked="" type="checkbox"/>	Up	<button>Restart</button> <button>Stop</button>

RESTART the IG Connector



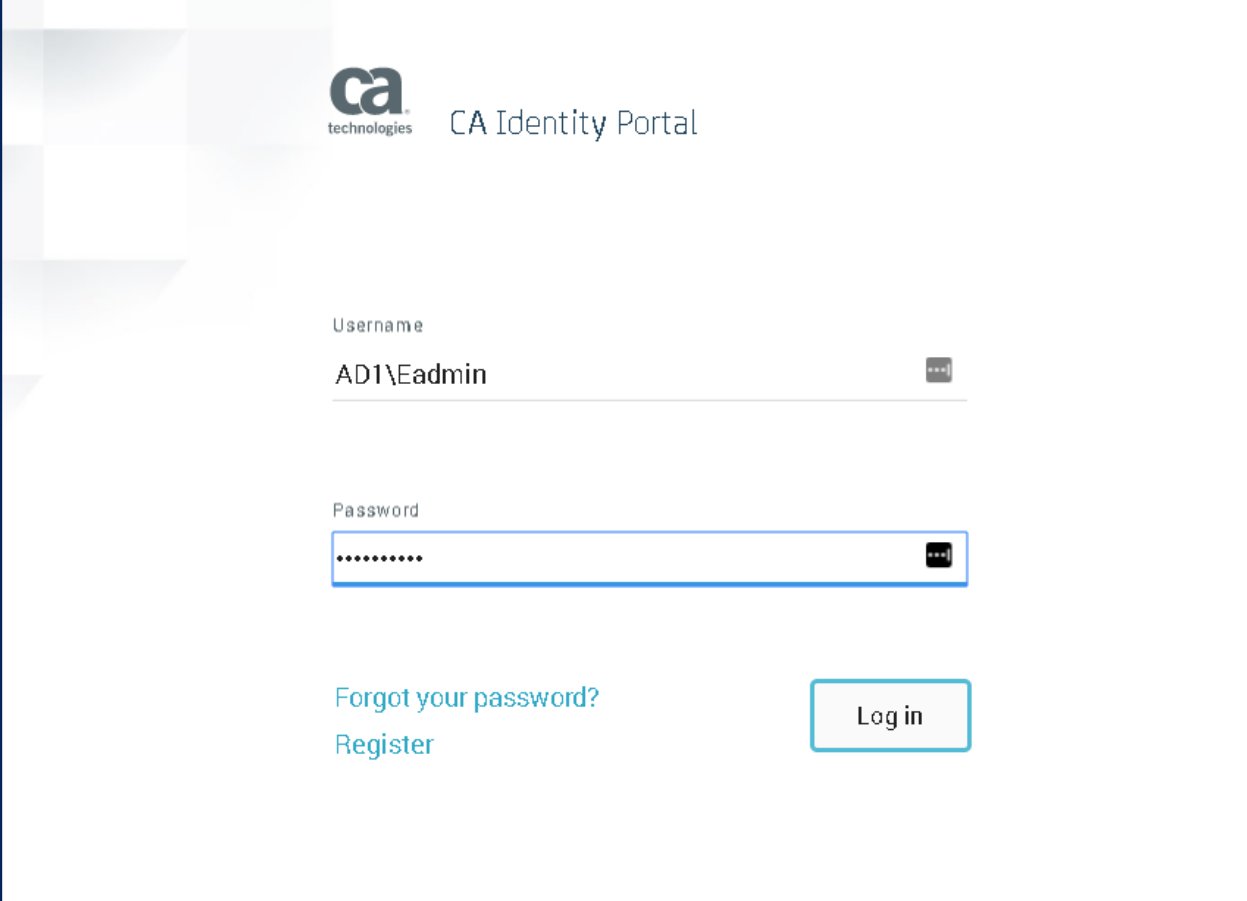
# Step 9: IG / IP Services Available

The screenshot displays the CA Identity Suite Virtual Appliance interface. At the top, the header includes the CA Technologies logo, the text "CA Identity Suite Virtual Appliance", and links for "Help" and "Logout". Below the header, the main section is titled "Servers (1)" with a sub-header "Last updated 29 seconds ago | Refresh". A server entry for "vapp-01" (IP: 192.168.242.146) is shown with a memory usage of "3314MB / 9888MB". Under this server, two service status cards are displayed:

- Identity Governance (IG)**
  - Management console
  - ✓ [OK] WildFly (IG) is running (pid 25011), port 8082
  - ✓ [OK] IG is running
  - ✓ [OK] Java heap size used by Identity Governance: 663MB/1512MB (43%)
  - [less](#)
- Identity Portal (IP)**
  - Management console | [User console](#)
  - ✓ [OK] WildFly (Portal) is running (pid 17922), port 8081
  - ✓ [OK] Identity Portal is available
  - ✓ [OK] Java heap size used by Identity Portal: 600MB/1512MB (39%)
  - [less](#)

Portal User Console will now be available.  
Give this < 1 min to refresh, or you can click on "User Console" link

# Step 10a: IP User Console - Authentication



The image shows the CA Identity Portal login page. It features the CA Technologies logo and the text 'CA Identity Portal' at the top. Below this, there are two input fields: 'Username' and 'Password'. The 'Username' field contains the text 'AD1\Eadmin'. The 'Password' field is filled with dots. To the right of the 'Password' field is a 'Log in' button. Below the 'Log in' button are two links: 'Forgot your password?' and 'Register'.

ca technologies CA Identity Portal

Username

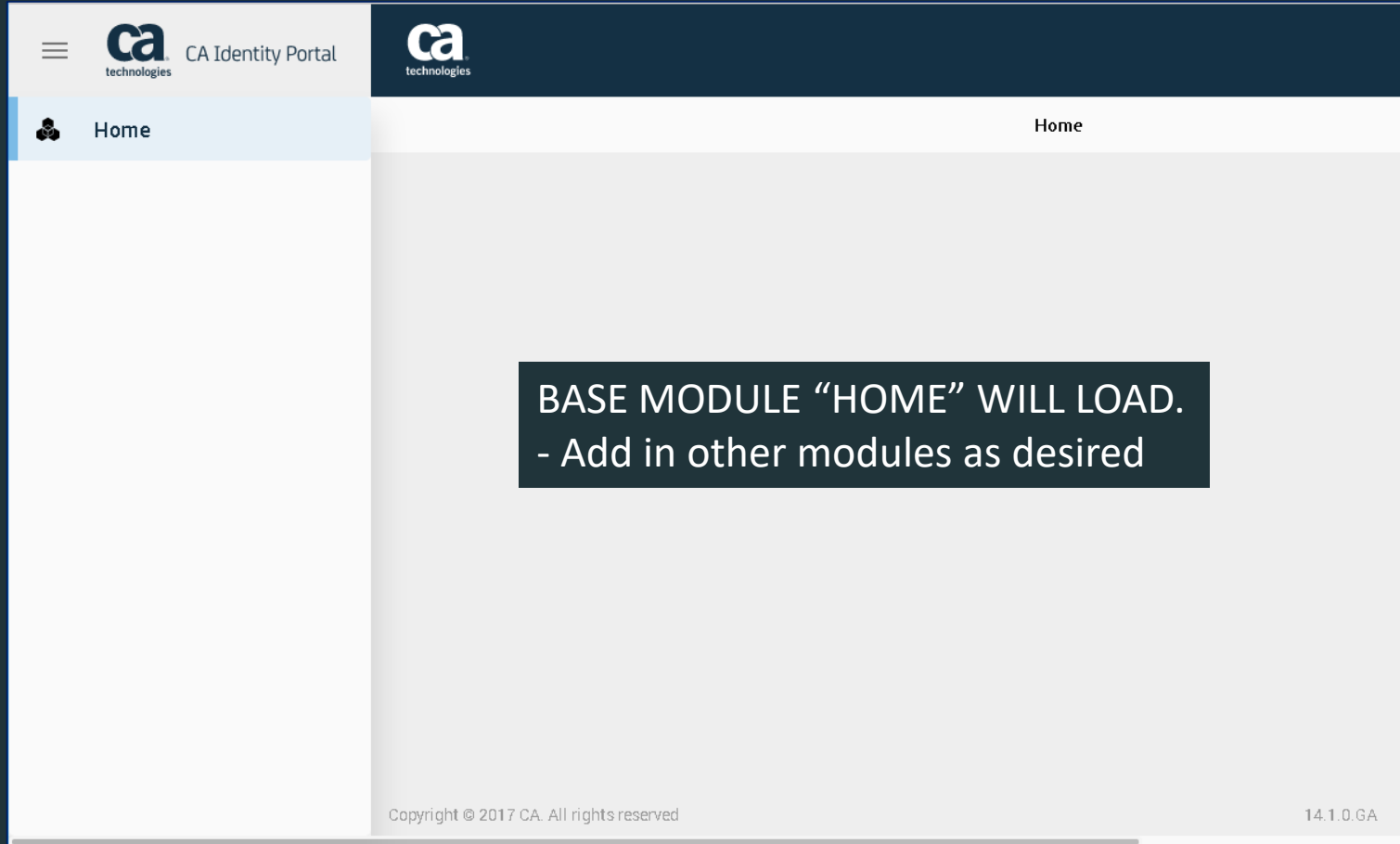
AD1\Eadmin

Password

.....

[Forgot your password?](#) [Register](#) [Log in](#)

# Step 10b: IP User Console – Default Module



The screenshot displays the CA Identity Portal interface. The top navigation bar is dark blue with the CA logo and 'CA Identity Portal' text on the left, and the CA logo on the right. Below this, a light blue sidebar on the left contains a 'Home' link with a person icon. The main content area is light gray and features a dark blue box with white text that reads: 'BASE MODULE "HOME" WILL LOAD. - Add in other modules as desired'. The footer of the page includes the copyright notice 'Copyright © 2017 CA. All rights reserved' on the left and the version number '14.1.0.GA' on the right.

CA Identity Portal

Home

BASE MODULE "HOME" WILL LOAD.  
- Add in other modules as desired

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14.1.0.GA