



# DEXcenter

## Version 13 Deployment Guide



# Table of Contents

<b>Section 1. Deployment Overview</b>	<b>3</b>
<i>Chapter 1. Who should read this manual?</i>	3
<i>Chapter 2. DEXcenter Concepts</i>	4
<i>Chapter 3. Overview of DEXcenter Deployment</i>	6
<b>Section 2. DEXcenter Deployment</b>	<b>7</b>
<i>Chapter 1. Planning</i>	7
<i>Chapter 2. Preparation for Deployment</i>	9
<i>Chapter 3. DEXcenter Software Installation</i>	12
DXS / DTS Installation	12
<i>Chapter 4. Post-Installation Configuration</i>	35
Populate the DEXcenter database	35
Configure Separate DTS Connectivity	35
Wildfly Configuration	36
DEXcenter Workflow Configuration	38
DEXcenter Configurator	<b>Error! Bookmark not defined.</b>
<i>Chapter 5. Verifying Basic DEXcenter Operation</i>	44
DEXcenter User Application	45
DEXcenter AdminConsole Application	45
DEXcenter Camunda Workflow Engine	<b>Error! Bookmark not defined.</b>
DEXcenter Patch Installer	46

# Section 1. Deployment Overview

## Chapter 1. Who should read this manual?

This manual is for the persons responsible for DEXcenter deployment as well as administration and configuration. This manual discusses the typical operations to prepare for and deploy DEXcenter in an enterprise environment.

The typical process involves several steps:

- Planning how DEXcenter will be deployed in the environment
- Preparing the environment
- Deploying DEXcenter software into the environment
- Configuring DEXcenter for desired usage scenarios after basic deployment.

Primary usage of DEXcenter is covered in the User's Guide with handy commands identified in the User's Quick Reference Guide.

General administration and configuration functions are covered in the DEXcenter Administration and Configuration Guide. Most common administration functions can be performed in the DEXcenter AdminConsole.

Most DEXcenter configuration is performed outside of the DEXcenter GUI by modifying the database and pertinent control files. The Configuration menu in the AdminConsole provides access to a limited set of configuration information and functionality for users which have ROLE\_CONFIG authority.

The Deployment Guide provides instructions for initial deployment and configuration. Requirements for configuration as part of the initial deployment are covered in this guide. Ongoing Administration and future configuration are covered in the Administration and Configuration Guide.

## Chapter 2. DEXcenter Concepts

DEXcenter is an infrastructure application deployed on servers which manage the scheduling and execution of other applications, especially CAD related applications. DEXcenter consists of a primary web server control application and many satellite translation servers which perform the requested application operations.

The following terms will be used throughout this manual:

DXS	DEXcenter Server. The DXS is the main control server for DEXcenter. Users, profiles, translations, and jobs are all managed by the DXS.
DTS	DEXcenter Translation Server. There may be many DEXcenter Translation Servers. Each computer providing translation functions is a DTS.
DDS	DEXcenter Data Store. DEXcenter can be configured to store data locally on the DXS or via FTP or SFTP on another system.
DDB	The DEXcenter DataBase is used to store and manage configuration as well as user information. DEXcenter can use MySQL, Oracle, or SQLServer as the database application.
Session	Each exchange of data is termed a Session. Users Create Sessions to send data to another user. Recipients receive data by accessing a Session.
Users	Each person using DEXcenter must be registered in DEXcenter and is termed a User. Each User has a unique id and password, a Profile of exchange preferences, and their own unique Session area.
Roles	Each User is assigned a Role which controls their access to DEXcenter functions. ROLE_USER allows access to the DEXcenter user function. ROLE_ADMIN allows access to the DEXcenter AdminConsole. ROLE_CONFIG allows access to the Configuration menu within the AdminConsole. ROLE_SOA allows use through the SOA API interface.
Groups	Groups are Groups of Users. Groups serve several purposes: to provide a convenient means to find and manage related members, to provide access to repositories, and to configure approval authority.
Profile	Each User has a profile which identifies the requirements and preferences for that User. This includes the desired CAD system and File Format and transmission method for receiving data as well as additional processing options.

Application server	The DEXcenter application works in conjunction with an application server. DEXcenter uses the Wildfly Application Server.
Authentication	Each User must log into DEXcenter with a unique user name and password. The method of authentication varies depending upon the deployed environment. DEXcenter provides a basic authentication function. The Wildfly application server can be configured to support LDAP or SSO authentication as well.
SSO	Single Sign On. A common method of authentication. Often used when DEXcenter is associated with a corporate portal. By signing onto the corporate portal, users can gain access to DEXcenter without a separate login process.
SSL	Secure Sockets Layer. An industry standard encryption method. When SSL is enabled, the URL will be identified with an https protocol and data will be encrypted during the exchange process.
Job	A Session which has been submitted for processing becomes a Job. The job is put into a Queue and awaits execution based upon the queue rules.
Workflow	All processing in DEXcenter occurs based upon a workflow managed by the CAMUNDA workflow engine.
Path Workflow	An overall workflow which manages the processing associated with DEXcenter Action types. For instance for a translation, a path workflow would manage all tasks associated with translating from one CAD system to another and include validation of the translated results.
Task Workflow	A Task is an element of a path workflow. For example, the Catia V5 to STEP task creates a step formatted file from a native Catia V5 file.
Flavor	Flavors control the execution of Tasks within a Path. For instance to have a STEP translator generate a STEP AP203 or AP214 or AP242 protocol format.
DMZ	A firewall protected subnet which provides limited access. The DEXcenter DXS is commonly deployed in a DMZ zone when external access to the internet is configured.
FWR	Firewall Rules. Typically a DMZ is created by surrounding with firewalls which allow only selected access to the applications in the DMZ. For instance, access may only be allowed for certain ports or between certain computers.

## Chapter 3. Overview of DEXcenter Deployment

A DEXcenter deployment consists of several discrete steps as follows:

- Planning
  - o Determining how DEXcenter will be employed into your environment in order to achieve the access and functional goals while maintaining security.
- Preparing
  - o Once the desired environment has been determined, it must be prepared. This is work which must be completed prior to the actual deployment of the DEXcenter software.
- DEXcenter software installation
  - o This is the process of installing the basic DEXcenter software on all the components in the desired environment.
- Configuration
  - o Once the basic DEXcenter software has been deployed into the environment, various configuration actions are required in order to achieve proper interaction between the DEXcenter components and the environment and to enable the various DEXcenter functionality desired.

The chapters in the next section will cover each of these topics in detail.

# Section 2. DEXcenter Deployment

## Chapter 1. Planning

The first and most important aspect of DEXcenter deployment is planning. DEXcenter is an enterprise infrastructure which interacts with and relies upon critical components of the environment. Use of many of these environment infrastructure components are often governed by internal policies. It is critical to develop a plan for DEXcenter use which fits into your company environment and policies and provides sufficient resources to meet expectations.

It is usually best to start with questions regarding usage scenarios. Some key questions include:

- Will DEXcenter be used for exchange of data with individuals outside of your internal company network?
  - If so, then external access and probably additional security must be planned. Typically the DEXcenter DXS at least is deployed in a DMZ and corporate ldap or SSO authentication may be used. The DDS and DTS components may be deployed within the DMZ or more securely in an internal subnet.
- Will DEXcenter be used for automating CAD translation, validation, and / or other CAD related processing?
  - If so, then the necessary CAD applications will need to be deployed on one or more DEXcenter DTS systems.
- What is the expected percentage of use for exchange only versus CAD processing?
- What method or methods of user authentication will be used?
  - DEXcenter supports three methods of user authentication
    - An internal username / password method which includes commonly used password policies (password length, complexity, expiration, etc)
    - An LDAP authentication mechanism where the username and password is authenticated via a corporate LDAP function. The user must still have a DEXcenter userid which matches the the LDAP id with an appropriate DEXcenter role enabled.
    - An SSO authentication mechanism allows a user to be authenticated through an SSO portal and then go directly into DEXcenter without a separate login. A matching username with appropriates still must be enabled in DEXcenter.
- What volume of data is expected to be exchanged?
  - How many files per day, week, month, or year do you expect to exchange?
- What volume of data is expected to be processed with CAD systems?
  - How many files per day, week, month, or year do you expect to be processed?
- What is the expected exchange delivery time?
- What is the expected CAD processing time?

- What are the largest and average sized files to be exchanged?
- What are the largest and average size files to be processed with CAD systems?
- How long do you want to retain files in the DEXcenter system?
  - DEXcenter is not typically used for permanent storage. Generally that is the role of a PDM system. Rather files are typically kept only long enough to satisfy the intended purpose. The longer files are retained, the greater the storage requirements.
- What CAD processing options are to be enabled?
  - Translation
    - Which CAD systems / versions and translation paths?
    - Which translation features are important:
      - BREP
      - FBT
      - PMI
      - Visualization
      - other
  - Validation
    - Which CAD systems / versions and derived formats?
  - ECO Documentation
    - Which CAD systems / versions?
  - Producibility
    - Which CAD systems / versions?
  - Simplification
    - Which CAD systems / versions?
    - What level of simplification is required?
- Are there other automated processing functions to be enabled?
- What are the environmental parameters?
  - What is the operating system and version of the servers on which DEXcenter will be deployed?
  - Is a DMZ and firewalls to be utilized?
    - If so, what is the configuration? Will all servers be deployed with the DMZ or will there be a need to share data across firewalls?
  - Will ftp, sftp, or shared disks be used for file exchange between the servers?
    - If so, what ftp or sftp applications are being used?
  - What temporary and permanent storage will be available?
- Is a PLM system used?
  - If so, which one?
  - Will DEXcenter and the PLM system be connected?
- Will an existing licenser server be used?
  - If not, then a FlexNet license server will need to be deployed.

## Chapter 2. Preparation for Deployment

Once the decisions above regarding the environment have been made, the work of preparing the desired environment begins.

This includes tasks such as:

- Identify or obtain the server systems to be utilized for DEXcenter components.
- Configure the server systems to support the DEXcenter components.
  - Create a service user id with administrative rights for DEXcenter. On the DXS and DTS systems, DEXcenter components will be deployed as this user
    - This id will be used to launch the Wildfly Application Server under which DEXcenter operates.
    - On the DDS and DXS, this user id will be used for file access (ftp, sftp, shared credentials).
  - Install or configure FTP or SFTP servers on the DXS and DDS if FTP or SFTP is being used as the file sharing mechanism between servers.
  - If shared disk is being used to support file sharing between the servers, then a shared disk which can be accessed using the same method (UNC, defined disk, etc) from each server. The shared disk must be defined such that credentials are not required to access it from any system.
  - Install and configure any required CAD systems or other applications to be managed by DEXcenter on the appropriate DTS systems. Verify that the applications can be used by the service user.
  - Allocate sufficient storage on the DDS to keep as many sessions as required for the duration required.
  - Install a Java V8 JDK on the DXS/DTS and each separate DTS
  - If JBoss EAP Application Server is being used, then it must be installed and configured prior to the DEXcenter software installation.
- Create the required database elements
  - For all database applications, the database connection information will be required during the installation of the DEXcenter software.
  - For Oracle database application
    - Create a tablespace for DEXcenter usage.
    - Create a username for the DXS and each separate DTS.
    - Connection information needed is:
      - Hostname or ip address
      - Username
      - Password
      - Connection port
      - SID
  - For MySQL database application
    - Create a database for the DXS and each separate DTS.
    - Create a username for each database

- Connection information needed is:
      - Hostname or ip address
      - Database name
      - Username
      - Password
      - Connection Port
  - For SQLserver database application
    - Create a database for the DXS and each separate DTS
    - Create a username for each database
    - Connection information needed is:
      - Hostname or ip address
      - Database name
      - Username
      - Password
      - Connection Port
- Identify and configure the network components to be utilized
  - Establish the DEXcenter URL to be used (default = <http://dexcenterDXSservername.domain.com:port>)
  - Identify reverse proxy servers if they are being used
    - Configure connection between reverse proxy server and DEXcenter DXS server
      - External network users should only be allowed access to the DEXcenter application
        - DEXcenterURL/DEXcenter
      - Internal network users should be allowed access to the following applications
        - DEXcenterURL/DEXcenter
        - DEXcenterURL/AdminConsole
        - DEXcenterURL/worklist
        - DEXcenterURL/DEXcenterSOA
  - If SSL encryption is being enabled, obtain an SSL certificate for the DEXcenter URL.
  - If LDAP or SSO authentication is to be used, identify or create the necessary ldap / SSO connectivity
  - Firewalls
    - Configure the ports to be opened for access to components in a different subnet
      - http or https (internal and external)
      - smtp (internal)
      - ftp / sftp (internal for DTS or DDS; external outbound only for connection to customer / supplier SFTP / FTP servers)

- database connectivity port
  - License servers (CAD, ITI, other)
- Identify and if necessary, configure the SMTP server through which the DEXcenter DXS server will relay email messages.
  - In some cases, this may require a specific username and password.
  - It may also be necessary to configure the SMTP server to allow messages to be relayed from the DEXcenter DXS server.

## Chapter 3. DEXcenter Software Installation

Once all the preparation is complete, it is time to install the actual DEXcenter software onto each of the DEXcenter environmental components.

DEXcenter has an InstallAnywhere installer (DEXcenter Installer) to guide the administrator through the software installation. Some configuration will be performed automatically. Additional configuration will be required after the installation.

The DEXcenter Installer installs the DEXcenter DXS and / or DTS components. The DEXcenter Installer performs the following tasks:

- Deploy DEXcenter software onto the target system.
- Optionally install and configure the Wildfly Community Version 10.1 Application Server.
  - The Wildfly EAP Application Server versions are prerequisites and must be installed and configured before running the DEXcenter Installer. The DEXcenter Installer will create a .cli script in order to configure the Wildfly EAP for specific DEXcenter requirements.
- Configure and encrypt database connectivity information.
- Configure a local DDS default datastore on the DXS server.
  - If a datastore is required on a different server or on a shared disk between DEXcenter component servers, that will need to be configured after the initial installation.
- Customize DEXcenter database scripts to be compatible with the deployment environment.

The sections below will step through a typical installation. Note there are options for DXS/DTS or DTS only installations, Wildfly Application Servers (Community or EAP), and database applications which result in different installer screens. Each will be shown and identified accordingly.

### **DXS / DTS Installation**

The steps required to perform an installation of DEXcenter DXS / DTS software on the DXS / DTS server are discussed and shown below.

#### ***Step 1. Login to the server where DEXcenter components are to be installed.***

Login using the DEXcenter Service account. This account must have administrative privileges.

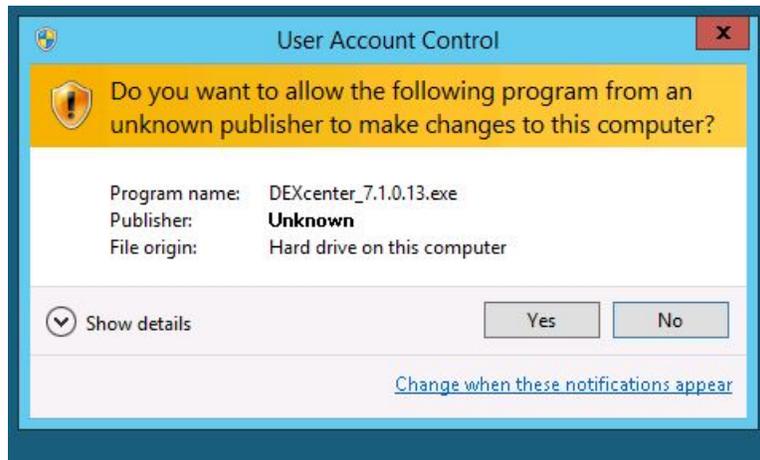
#### ***Step 2. Copy the DEXcenter Installer to the server.***

Copy the DEXcenter Installer onto the server where a DEXcenter component is to be installed. The Installer must be executed on the server where the component is to be installed.

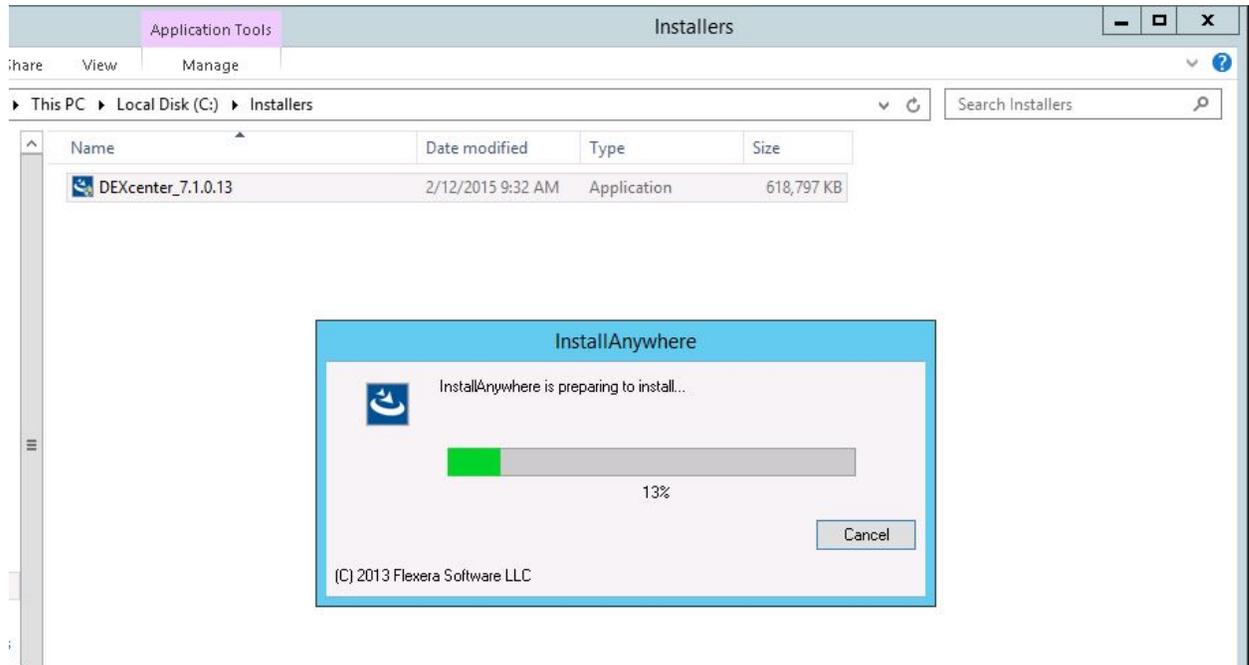
**Step 3. Execute the DEXcenter Installer As Administrator**

The DEXcenter Installer must be executed with Administrative privileges in order to have the permissions necessary to complete a DEXcenter component installation. Right click on the DEXcenter Installer file and “Run As Administrator”.

The security policies enabled on your system may require you to allow the DEXcenter Installer to execute. If the message below appears, click YES to continue with the installation.

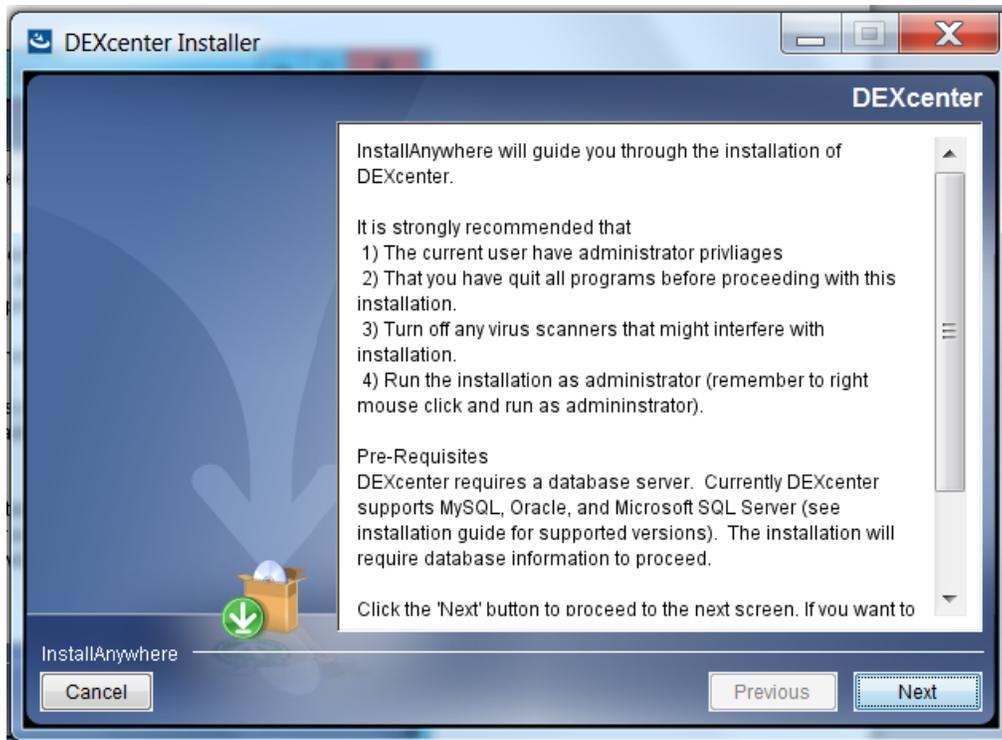


The message below appears as the DEXcenter Installer begins execution



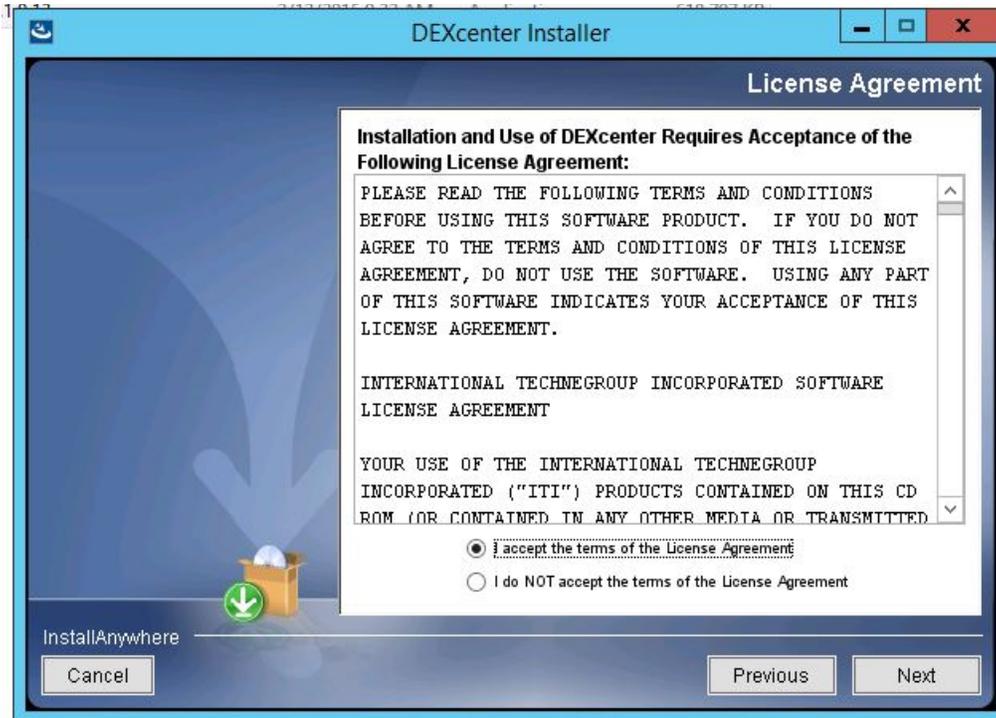
### DEXcenter Installer Welcome Screen

The first screen that appears provides an introduction to DEXcenter Installer and installation process. Click “Next” to continue the Installation.



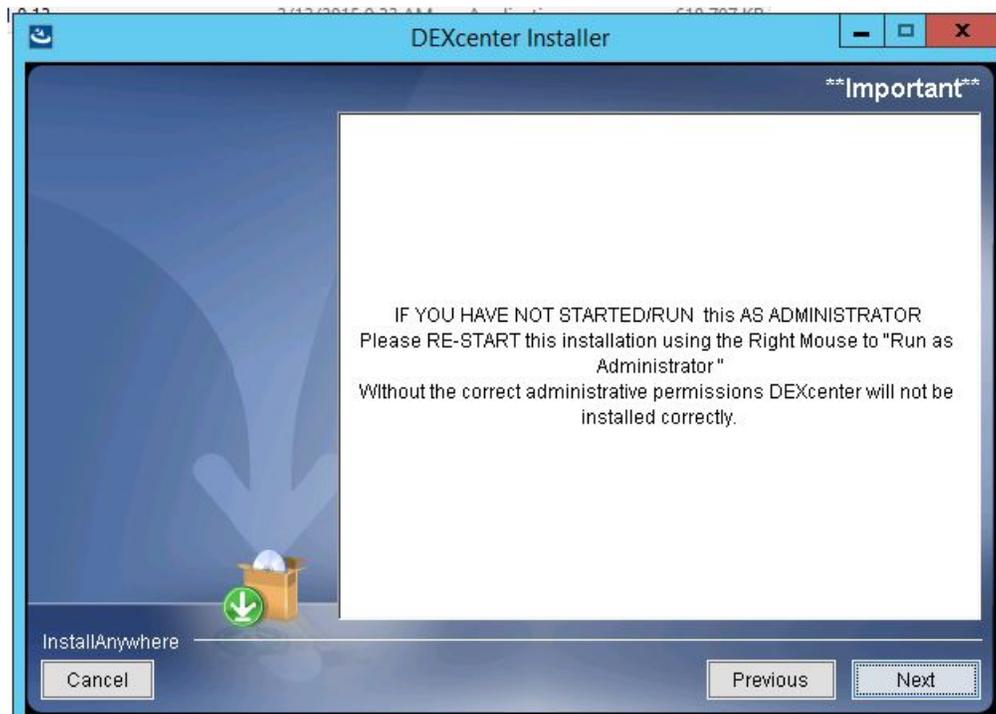
## Accept the DEXcenter License Agreement

The next DEXcenter Installer screen to appear presents the DEXcenter License Agreement. After reviewing the License Agreement, select “I accept the terms of the License Agreement” and “Next” to continue the installation. Selecting Cancel ends the installation.



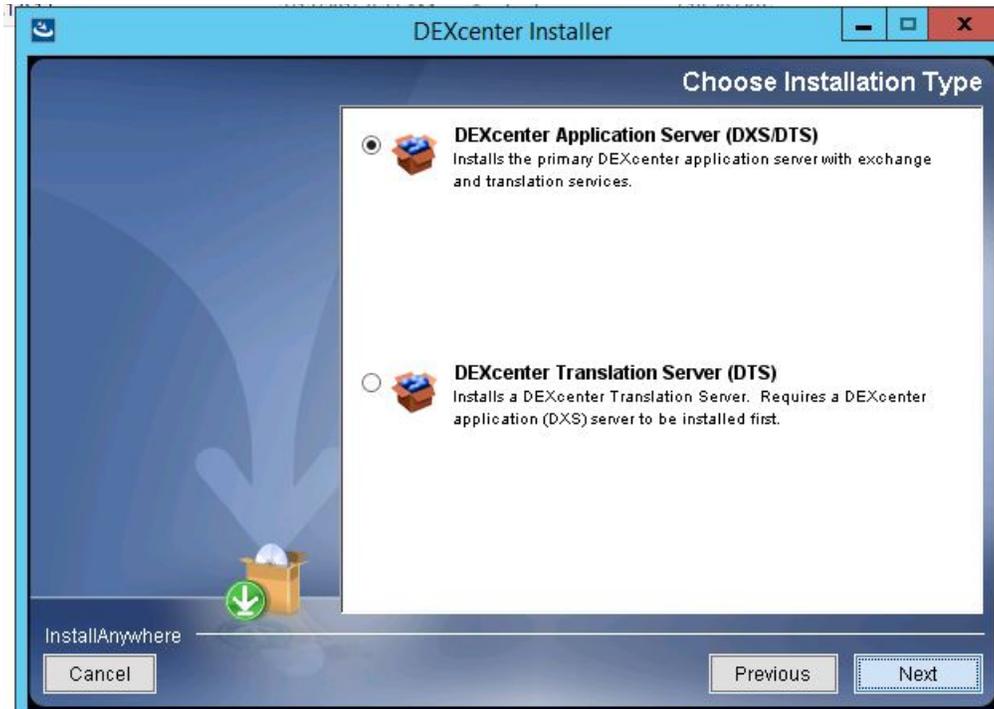
## Run as Administrator Reminder

This is a reminder that the DEXcenter Installer must be executed as an Administrator. Failure to run the Installer as an Administrator user will result in an unusable installation and the installation will need to be repeated. If the Installer was not executed using “Run As Administrator”, click the “Cancel” button to abort the Installer and then restart using “Run As Administrator”. If the Installer was started with “Run As Administrator” privileges, click “Next” to continue the installation.



## Select DEXcenter component to be installer

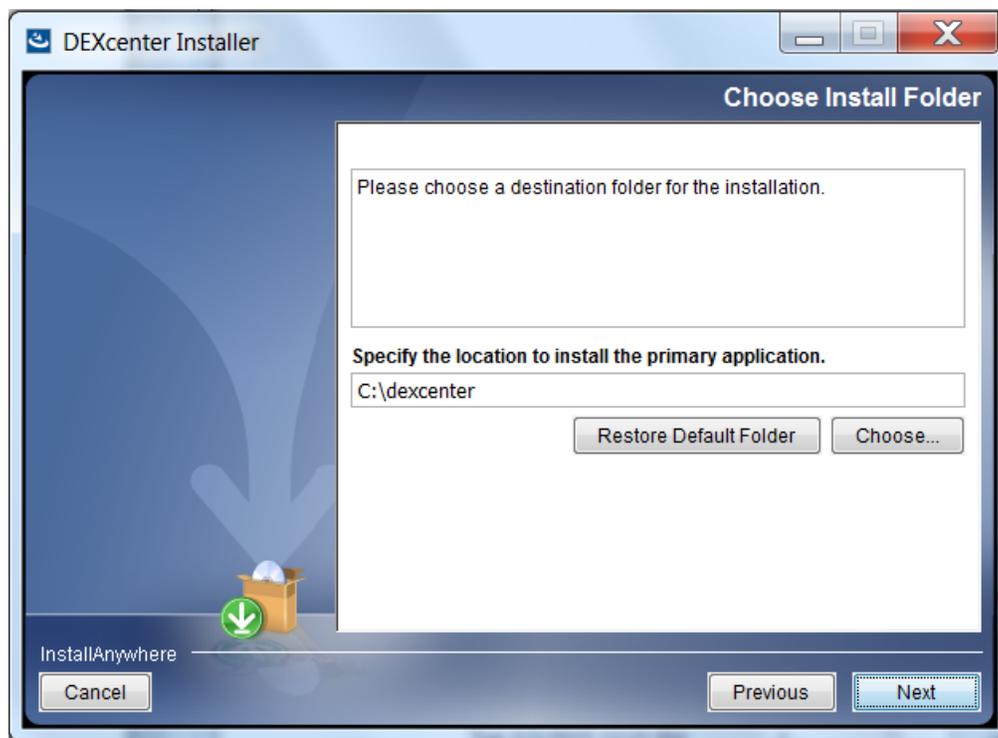
Select whether the DXS / DTS component or the DTS only component is to be installed. The DXS/DTS component should always be installed first. The DTS component should only be used to install a DTS on a system separate from the DXS.



## Installation Folder

Identify the folder in which to install DEXcenter. Use the “Choose” button to select an existing folder or simply type the desired folder name into the window.

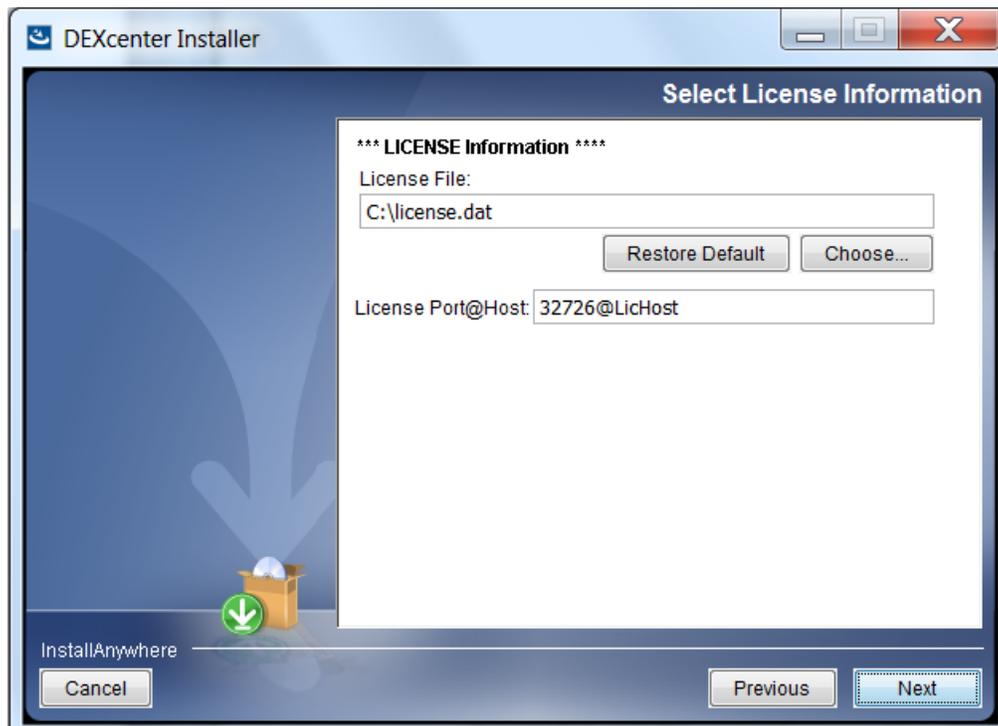
If the folder exists and contains a version.txt file, the DEXcenter Installer will identify that DEXcenter has previously been installed and perform an update instead of a complete new installation.



## Identify License Information

Identify the license file which contains DEXcenter license information. The file must exist. If the correct license file is not available at this time, create a simple license.dat txt file and select it. Later the correct license file can be replaced in the installed directory.

Specify the “port@host” format for the license if the license server is on a different system.



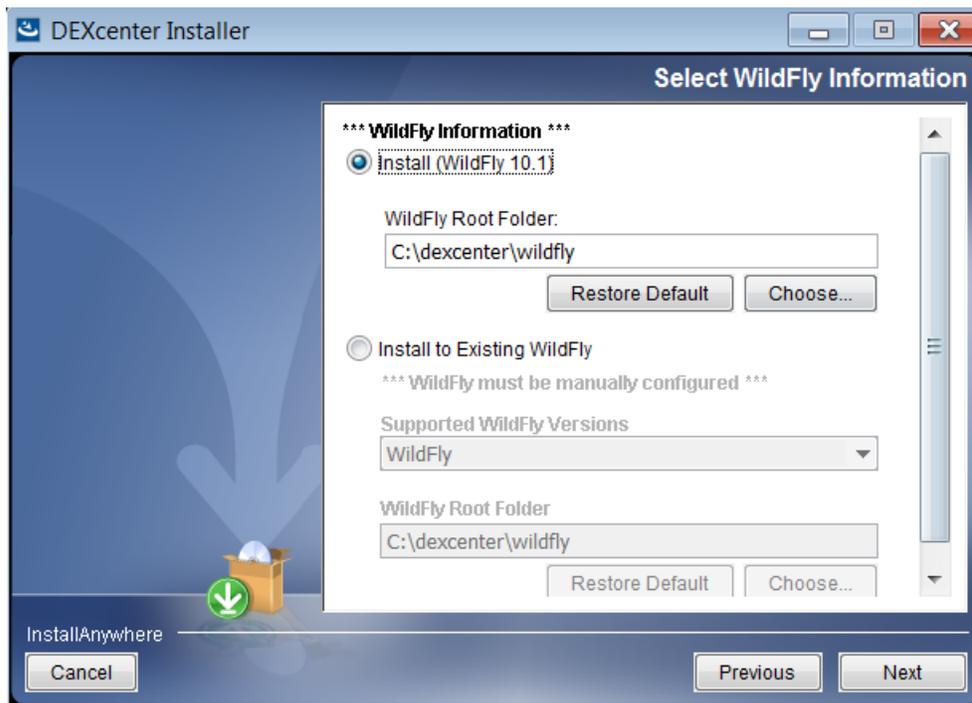
## Select Wildfly Application Server Option

### Option 1 – Install Wildfly

If the Install Wildfly option is chosen, the DEXcenter Installer will install and configure the Wildfly Community Application Server version 10.1.

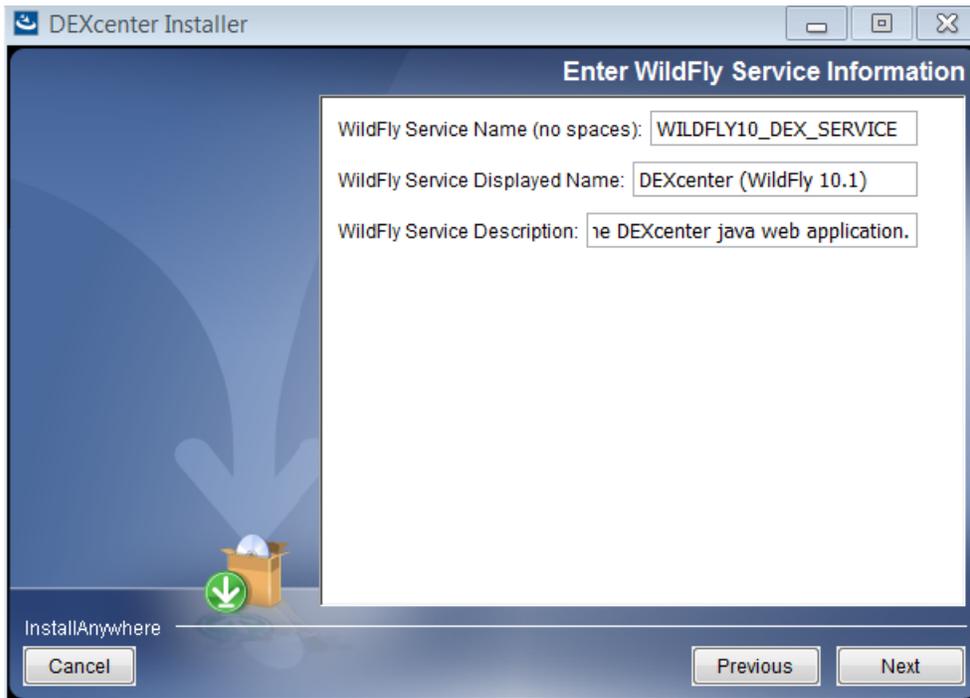
Specify the location of the Wildfly Root Folder. By default, Wildfly is installed under the DEXcenter installation directory.

Click “Next” to continue.



### Specify Wildfly Community Service information

Specify the name, displayed name, and description of the Wildfly Community AS 10.1 version being installed. Default information is included. Click “Next” button to continue with the defaults. The names can be changed if desired.



## Option 2- Install to Existing Wildfly

Choose “Install to Existing Wildfly” to utilize an existing Wildfly installation such as an EAP version.

DEXcenter will not configure an existing Wildfly. The administrator is expected to have installed and properly configured Wildfly before the DEXcenter installation.

The DEXcenter Installer will generate a .cli script to use to configure DEXcenter within the existing Wildfly.

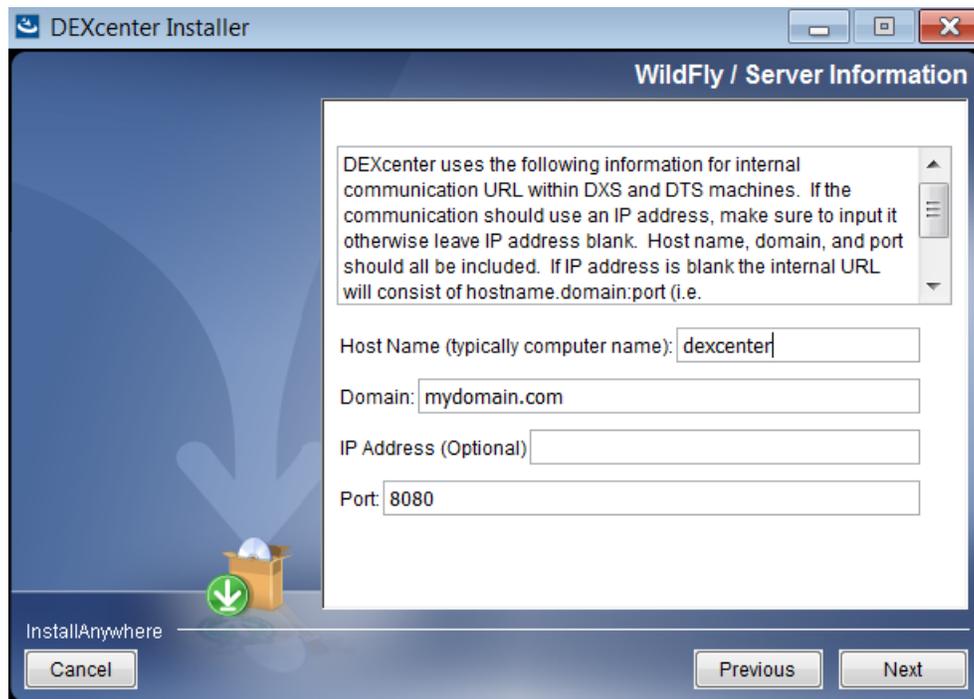


## Specify Wildfly / Server Information

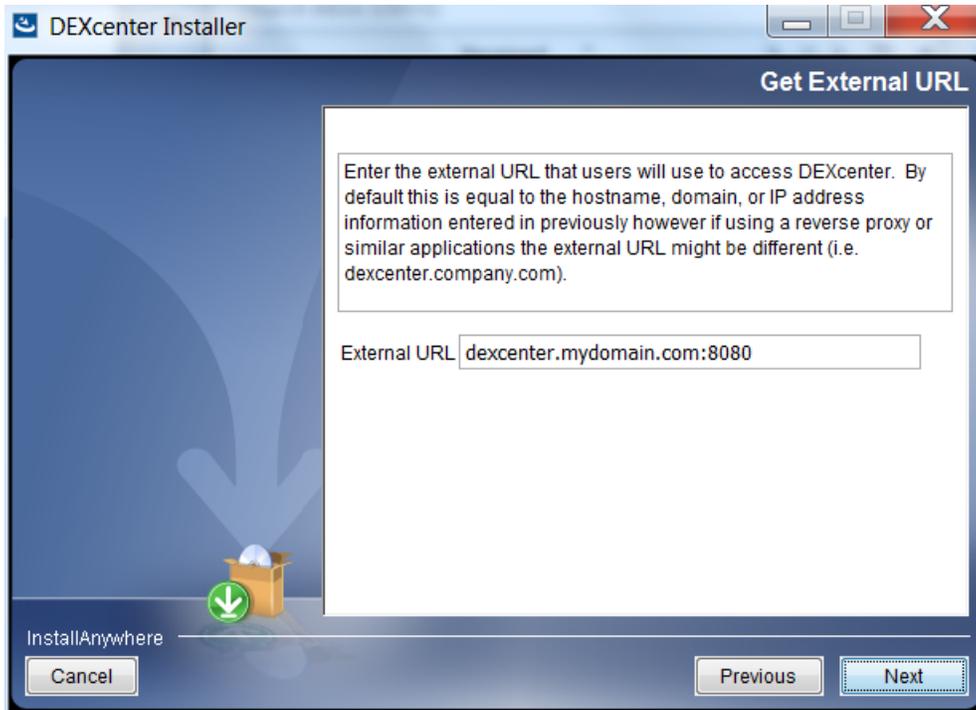
Specify the hostname of the DEXcenter DXS or DTS server along with the domain and the http or https port to be used for communication. The DXS and DTS systems can use the same or different ports.

If Wildfly Community 10.1 is being installed with DEXcenter, it will be configured to use the information specified.

If an existing Wildfly is being used, the information specified here should match what was configured.



If a reverse proxy server or other additional method is being used instead of direct access to the DEXcenter server, than the URL to be used should be specified here. By default, the actual server name, domain and port is used.

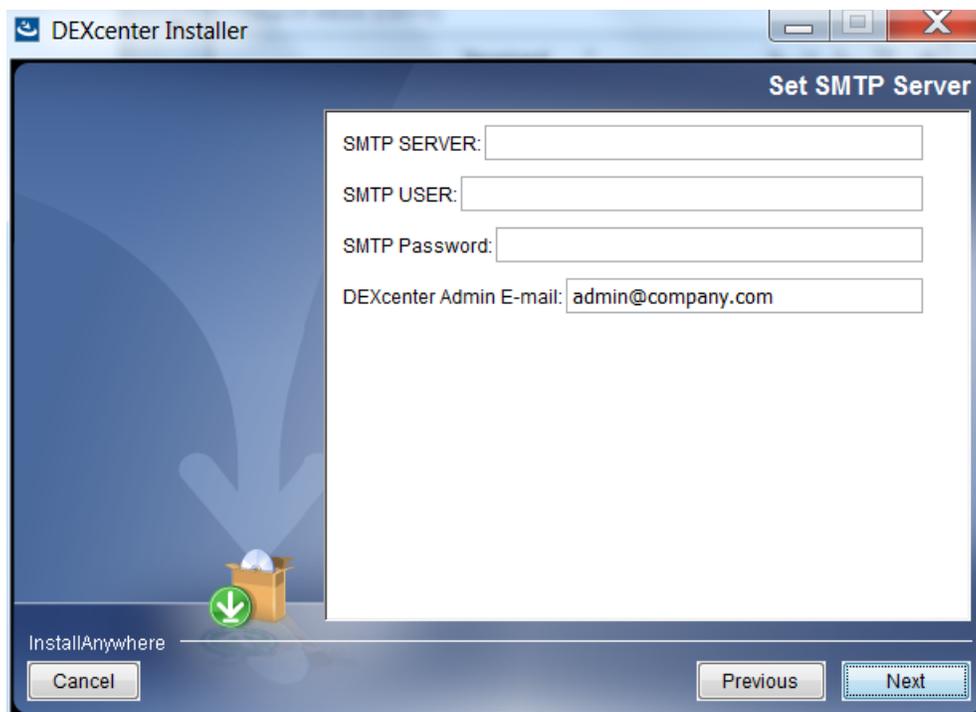


## Specify SMTP Server

DEXcenter automatically generates emails to notify users when sessions are completed, when passwords are changed, or for other purposes. In order to do so DEXcenter must have connection information for the SMTP server. Depending upon how your SMTP server is configured you may need only the SMTP server name or you may also need a valid username and password.

Specify the email address of the DEXcenter admin account. All DEXcenter emails will originate from this email account.

Some SMTP servers may need additional configuration in order to accept emails being relayed from the DEXcenter server.



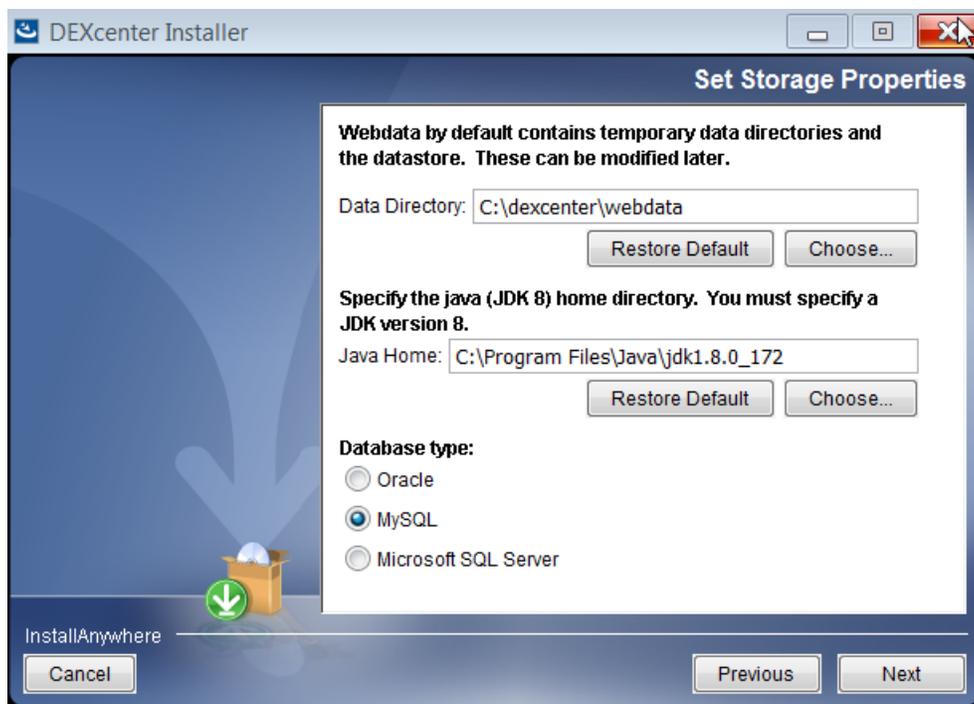
## Set Storage Properties

Specify the following properties:

**Data Directory.** This directory contains numerous subdirectories where temporary files are stored and where initially the DEXcenter default datastore is configured. The datastore can be changed to another permanent location later.

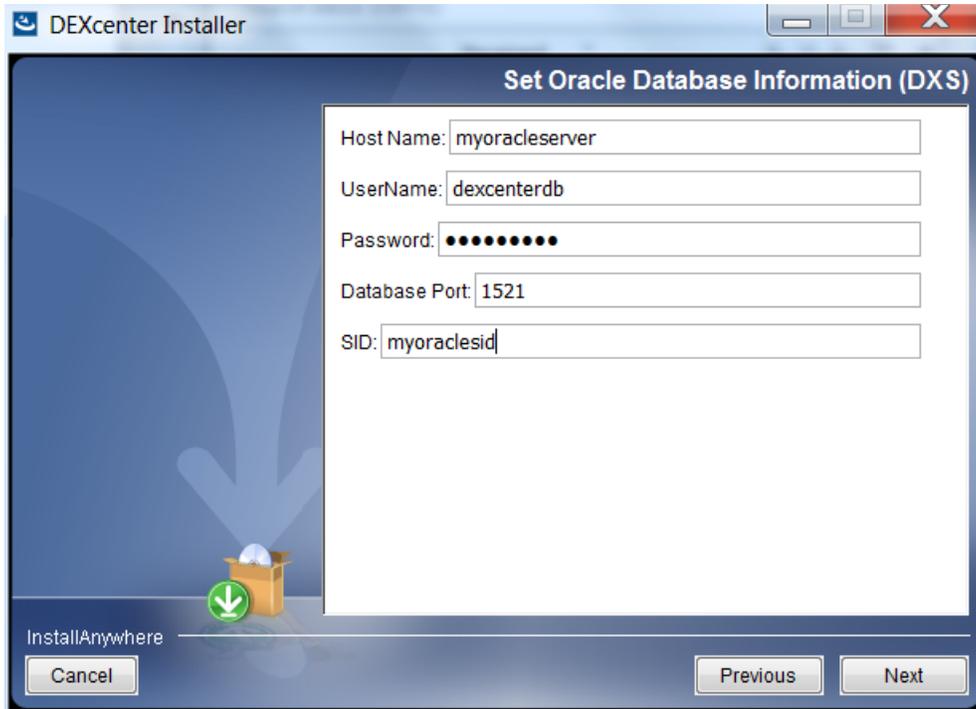
**Java JDK.** A java version 8 JDK is required for the installer. Type in the correct value or use the “Choose” button to select the JDK directory. The bin directory should be immediately below this directory. The JAVA\_HOME environmental variable is set to this value.

**Database type.** Select Oracle, MySQL or the Microsoft SQL Server which houses the DEXcenter database(s). See the DEXcenter Pre-Requisites Guide for the support versions of each. The screens which follow will collect the database connection information which will be configured for the Wildfly Application Server.



## DEXcenter Oracle Database Information (DXS)

Enter the connection information for the DEXcenter DXS database created during the Preparation stage. It is recommended that a database client application like SQLdeveloper or SQLplus be used to validate properties before entering.



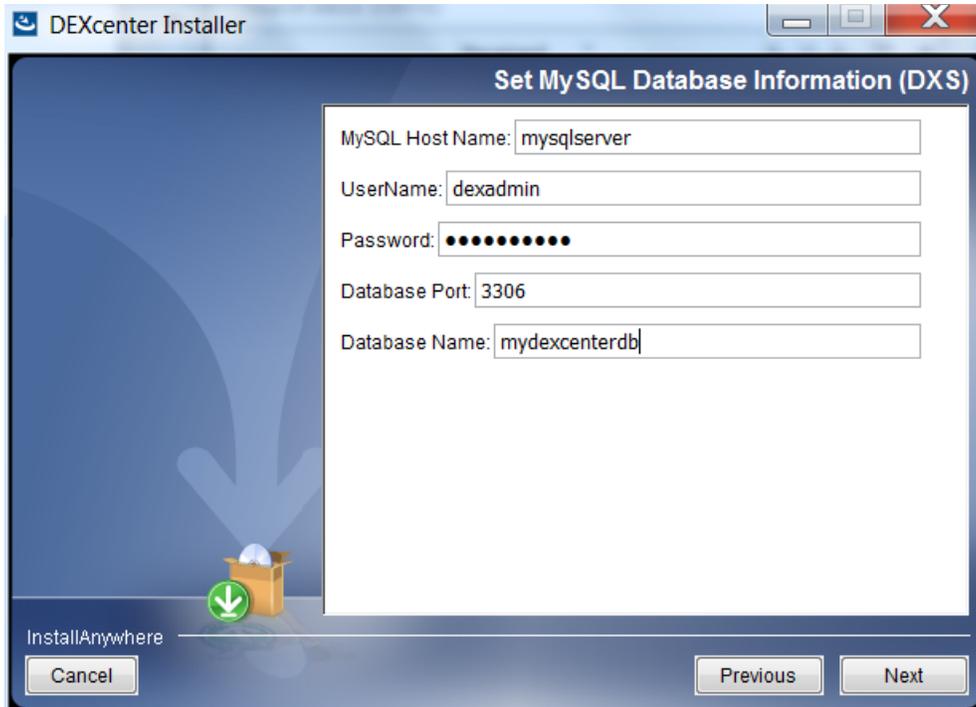
The screenshot shows the 'Set Oracle Database Information (DXS)' dialog box within the DEXcenter Installer. The dialog box contains the following fields and values:

Field	Value
Host Name:	myoracleserver
UserName:	dexcenterdb
Password:	●●●●●●●●
Database Port:	1521
SID:	myoraclesid

At the bottom of the dialog box, there is an 'InstallAnywhere' logo with a green arrow pointing down, and three buttons: 'Cancel', 'Previous', and 'Next'.

## MySQL Database Information (DXS)

Enter the connection information for the DEXcenter DXS database created during the Preparation stage. It is recommended that a database client application like MySQL Workbench or mysql command line be used to validate properties before entering.



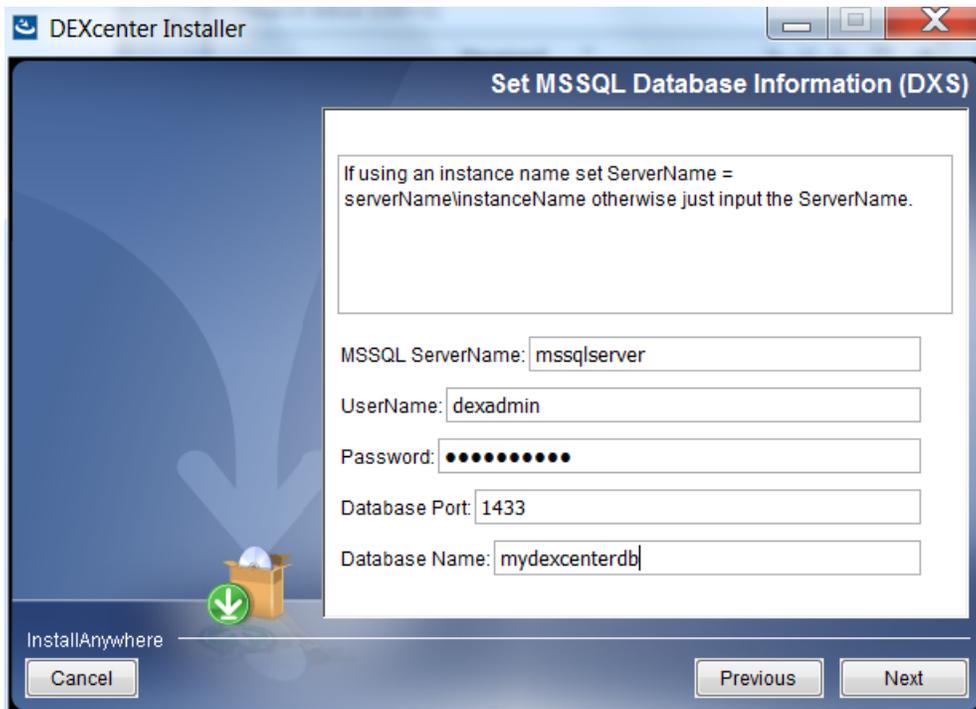
The screenshot shows a Windows installer window titled "DEXcenter Installer" with a sub-dialog titled "Set MySQL Database Information (DXS)". The dialog contains five input fields for database connection details:

- MySQL Host Name: mysqlserver
- UserName: dexadmin
- Password: [masked with 10 dots]
- Database Port: 3306
- Database Name: mydexcenterdb

At the bottom of the dialog, there is an "InstallAnywhere" logo with a green arrow icon, and three buttons: "Cancel", "Previous", and "Next".

## Microsoft SQL Server Database Information (DXS)

Enter the connection information for the DEXcenter DXS database created during the Preparation stage. It is recommended that a database client application like SQL Server or a command line option be used to validate properties before entering.



The screenshot shows the 'Set MSSQL Database Information (DXS)' dialog box within the DEXcenter Installer. The dialog box has a title bar with 'DEXcenter Installer' and standard window controls. The main content area contains a text box with instructions: 'If using an instance name set ServerName = serverName\instanceName otherwise just input the ServerName.' Below this are five input fields: 'MSSQL ServerName' (mssqlserver), 'UserName' (dexadmin), 'Password' (masked with dots), 'Database Port' (1433), and 'Database Name' (mydexcenterdb). At the bottom left, there is an 'InstallAnywhere' logo and a 'Cancel' button. At the bottom right, there are 'Previous' and 'Next' buttons.

DEXcenter Installer

**Set MSSQL Database Information (DXS)**

If using an instance name set ServerName = serverName\instanceName otherwise just input the ServerName.

MSSQL ServerName:

UserName:

Password:

Database Port:

Database Name:

InstallAnywhere

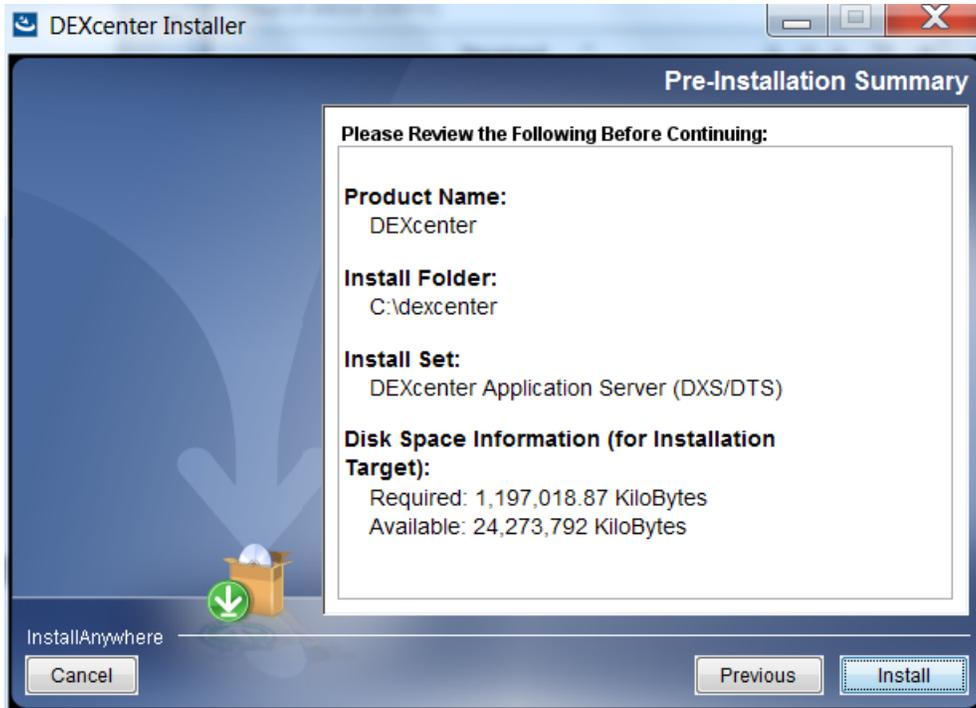
## DEXcenter DTS Database Information

If this is an installation of a DTS on a separate DTS server, then an addition screen will collect the comparable information for the DTS database.

The DTS Wildfly application accesses both the DXS and DTS databases so both must be specified.

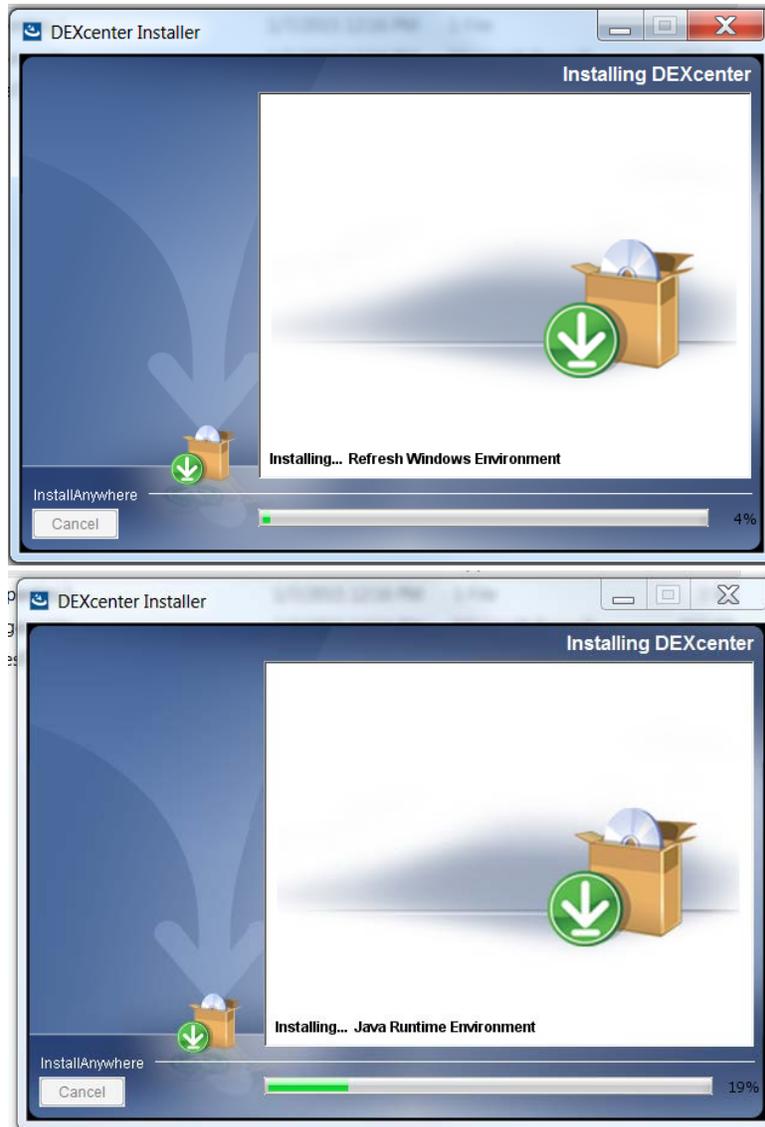
## Pre-Installation Summary

A brief summary of the installation to be made is shown. This includes the required and available disk space. If this correct, select the “Install” button to allow the installation to proceed. If any changes are needed, select “Previous” as needed through the various screens to make the changes.



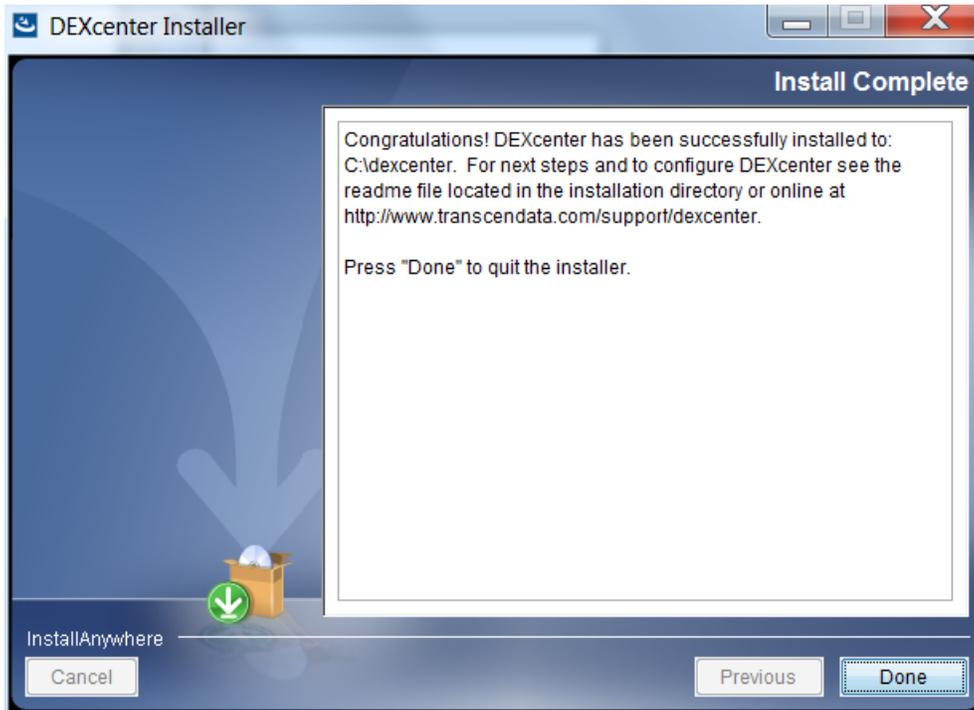
### Installation Progress

During the installation the DEXcenter Installer displays a progress bar and messages above it which provide progress information during the installation. Samples are below.



## Installation Complete

When the installation is complete, the “Install Complete” screen appears as below.



The DEXcenter Installer creates a “readme.txt” file in the top level DEXcenter installation directory. The “readme.txt” summarizes the information which appears in the next chapter of this manual.

The following chapter on configuration includes general information and examples. The “readme.txt” includes the actual values specified in the DEXcenter Installer.

## Chapter 4. Post-Installation Configuration

Once the DEXcenter software is installed, configuration is required to complete the deployment. These tasks are summarized in the `readme.txt` created in the DEXcenter installation directory by the DEXcenter Installer.

The following configuration tasks are required:

- DEXcenter database population
- Configure separate DTS connectivity
- Wildfly Configuration for DEXcenter
- Configuration of DEXcenter workflows
- 

Each of these will be discussed.

### Populate the DEXcenter database

The installer automatically creates the necessary DEXcenter population sql scripts specific to the identified configuration.

Use a sql command tool or GUI client compatible with your database application to execute the DEXcenter population scripts.

Connect to the database application using the connection information provided to the DEXcenter Installer. The database should have been previously created. If not, create it before proceeding.

For a DXS/DTS deployment:

- Execute the sql script `create_dexcenter_tables.sql`

For a separate DTS deployment:

- Execute the sql script `create_workflow_tables.sql`

### Configure Separate DTS Connectivity

If this was a separate DTS installation, the DEXcenter database must be modified so that the DXS is aware of the separate DTS and that tasks are appropriately associated with the correct DTS.

This information is in the `DEX_RESOURCES` table.

The DEXcenter Installer generates the sql script *insert\_dex\_resource.sql* which should be used to populate the DEX\_RESOURCES table. The sql script is located at <dexcenterinstallationdirectory>/db.

If a sql command or gui client is available on the DTS system to connect to the database, it can be executed there. Otherwise copy the sql script to a system where the tools are available. It is suggested you rename the script to identify the DTS hostname in the sql script name.

## **Wildfly Configuration**

### ***Wildfly Community 10.1 Configuration***

The Wildfly Community 10.1 configuration for DEXcenter is automatically completed by the DEXcenter Installer so no manual configuration is required.

### ***JBOSS EAP 7 and up Configuration***

The JBOSS EAP 7 Application Servers must be manually configured.

The configuration involves two tasks:

- moving modules from the DEXcenter installation directory into the JBOSS installation directory.
- executing a JBOSS cli script in order to configure JBOSS for DEXcenter.

### **Move DEXcenter Modules into JBOSS Installation Directory**

The DEXcenter Installer puts the DEXcenter modules to be copied in the following location:

<DEXcenter installation Directory>/jboss\_conf/modules/com

Under the com folder there will be 2 folders:

- iti
- 'database' (where 'database' = oracle, mysql, or sqlserver)

The folders above and all subfolders should be copied into the JBOSS EAP installation structure as follows:

For JBOSS EAP 7, copy the folders to:

<jbosseapinstallationdirectory>/modules/system/layers/base/com

You will likely need administrative privileges to copy these files.

### **Execute JBOSS cli script**

The DEXcenter Installer creates a cli script which is specific to the DEXcenter configuration. This script must be executed in order to connect JBOSS and DEXcenter.

The cli configuration script performs the following modifications:

- Adds the JDBC database driver for the configured database application
- Configures JNDI datasources for the database application using the connection information supplied to the DEXcenter Installer
- Adds the security domain for database password encryption
- Adds Hornetq messaging queues used by DEXcenter
- Sets deployment scanner path to find the installed DEXcenter application files in the <dexcenterinstallationdirectory>
- Configures the public interface to allow all incoming address connections (0.0.0.0)
- Configures the jboss ports needed for DEXcenter.

Before making the configuration changes, it is recommended that the following files be backed up:

- standalone-full.xml. The standalone-full.xml file can be found at <jbosseapinstallationdirectory>/standalone/configuration.
- Boot.log and server.log files which can be found at <jbosseapinstallationdirectory>standalone/log.

Copy the DEXcenter Installer created cli script (UpdateStandaloneFull.cli) from the DEXcenter installation directory (<dexcenterinstallationdirectory>/jboss\_conf to the JBOSS bin directory (<jbosseapinstallationdirectory>/bin).

Verify that the environmental variable JBOSS\_HOME is set to the <jbosseapinstallationdirectory>. This should have been performed as part of the JBOSS EAP installation.

NOTE: If multiple installations of JBOSS are installed on the same computer system, then JBOSS\_HOME and JAVA\_HOME should be added to the <jbosseapinstallationdirectory>/bin/service.bat file to avoid conflicts.

Execute the JBOSS cli script using the following procedure:

- Open a command line window
- cd to the <jbosseapinstallationdirectory>/bin directory
- execute the jboss-cli.bat script as:
  - .\jboss-cli.bat -connect -file=UpdateStandaloneFull.cli -controller=localhost:<port>
    - Where <port> above is the “management-native” port as defined in the standalone-full.xml

## ***Restart Wildfly***

After the database has been populated and the Wildfly EAP configuration made if required, restart Wildfly to have the changes take effect.

Review the boot.log and server.log for any serious errors which prevent deployment.

## **DEXcenter Workflow Configuration**

The final task is to configure the workflows to be used in DEXcenter.

First determine which workflows are to be deployed. There are hundreds of available workflows which can be found at <dexcenterinstallationdirectory/workflows. Only workflows to be configured in this DEXcenter instance should be configured. This avoids confusion and reliability problems. Workflows are available for the following categories:

- Transmit
- Translation
- Generate MBD
- Producibility
- Approval
- Batch

There are additional subdirectories under these directories which provide greater granularity of the workflows. Typically, there may be the following subdirectories which represent the primary workflow phases used by DEXcenter:

- Preprocessing
- Processing
- Postprocessing

Under these subdirectories, there are various .xml files which represent Path workflows and if appropriate a “tasks” subdirectory which includes task workflow .xml definition files. XML files are for our old workflow deployment engine, YAWL. Our new engine Camunda uses BPMN files. Part of the workflow deployment process is converting these old XML files to BPMN files. Workflow configuration consists of two steps.

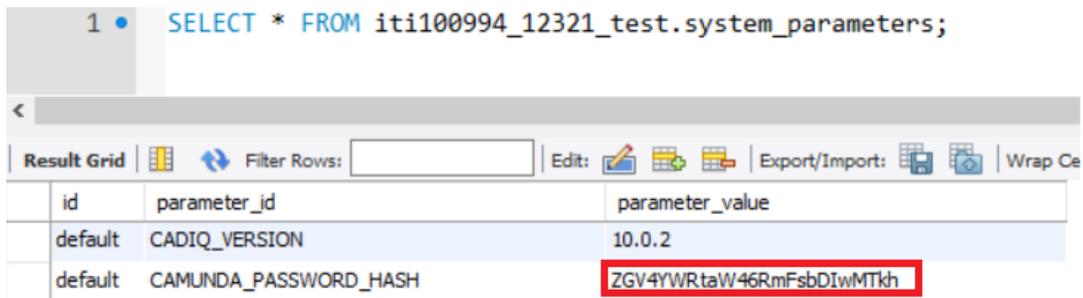
- Converting .xml workflow files to .bpmn files
- Deploy bpmn files

## Converting .xml workflow files to .bpmn files

The DEXcenter Installer creates a <dexcenterinstallationdirectory>\utilities\YAWL2BPMN directory and a <dexcenterinstallationdirectory>\utilities\CamundaUtil which contains utilities which can be used for the workflow conversion and configuration. It also contains a subdirectory with the same name as the DEXcenter component computer system (DXS/DTS or DTS). Workflows to be configured are converted to BPMN then copied into this directory and then processed by CamundaUtil functions to configure in DEXcenter.

The process for a DXS/DTS component is as follows:

1. Ensure the database tables have already been created and that Wildfly has been started
2. If you have not already signed into DEXcenter, visit the url specified in readme.txt and update the default password from the DEXcenter user page (\DEXcenter)
3. After updating the default dexadmin password, open your database management software and copy the parameter\_value for CAMUNDA\_PASSWORD\_HASH from database table "system\_parameters", then paste this value into Camunda.txt (located in the <dexcenterinstallationdirectory>\utilities\CamundaUtil folder.)



The screenshot shows a SQL query: `SELECT * FROM iti100994_12321_test.system_parameters;` The result grid displays the following data:

id	parameter_jd	parameter_value
default	CADIQ_VERSION	10.0.2
default	CAMUNDA_PASSWORD_HASH	ZGV4YWRTaW46RmFsbDIwMTkh



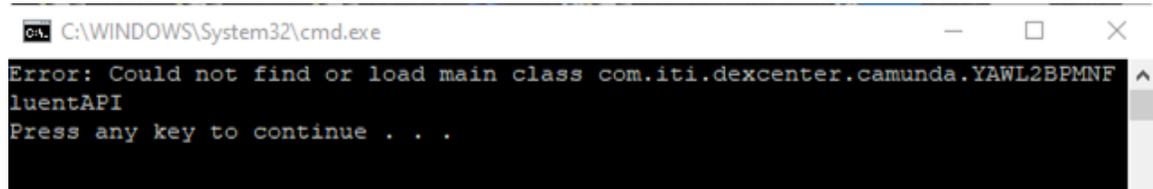
```
1 # YAWL engine URL
2 WORKFLOW_ENGINE_URL_ROOT=http://ITI100994.transcendata.com:8280/engine-rest/engine/ITI100994/
3
4 # workflow xml directory (for uploading)
5 WORKFLOW_XML_DIRECTORY=BPMN
6
7 # Camunda Password Hash (for authentication), go to System_Parameter. This is default value
8 CAMUNDA_PASSWORD_HASH=ZGV4YWRTaW46ZGV4Y2VudGVy
```

**Note:** If these two values are not equal, camundaDeployBat.bat will fail. This file is used to deploy bpmn files. See section “deploy bpmn files”

4. For transmit only: skip to next section “Deploy bpmn files”
5. Open windows command prompt and change the directory to <dexcenterinstallationdirectory>\utilities\YAWL2BPMN. Next, enter

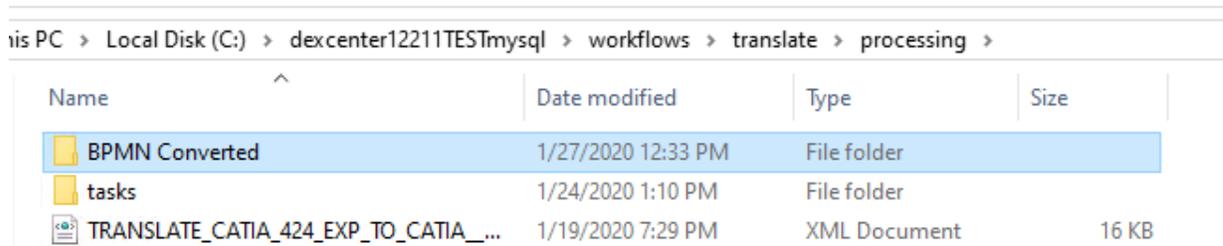
“YAWL2BPMN.bat” to convert the .xml workflows in \workflows to .bpmn. Each folder containing .xml workflows will now have a “BPMN Converted” folder, this folder containing the converted .bpmn files.

**Note:** YAWLtoBPMN.bat must be run from a command prompt. Double clicking the batch file cause following error:



```
C:\WINDOWS\System32\cmd.exe
Error: Could not find or load main class com.iti.dexcenter.camunda.YAWL2BPMNF
luentAPI
Press any key to continue . . .
```

6. Depending on your session type you plan to utilize, copy the required .bpmn workflows from the “BPMN Converted” folders to <dexcenter>\utilities\CamundaUtil\BPMN - Note: the workflows below (Figure 2) are for a Translate session (NX12 to Generic Step). The workflows you will need will vary by session type.



is PC > Local Disk (C:) > dexcenter12211TESTmysql > workflows > translate > processing >

Name	Date modified	Type	Size
BPMN Converted	1/27/2020 12:33 PM	File folder	
tasks	1/24/2020 1:10 PM	File folder	
TRANSLATE_CATIA_424_EXP_TO_CATIA_...	1/19/2020 7:29 PM	XML Document	16 KB



PC > Local Disk (C:) > dexcenter12211TESTmysql > utilities > CamundaUtil > BPMN

Name	Date modified	Type
step_cadiq.bpmn	1/1/2020 7:23 PM	BPMN File
step_dt_ps.bpmn	1/1/2020 7:23 PM	BPMN File
TRANSLATE_POSTPROCESSING.bpmn	1/1/2020 7:23 PM	BPMN File
TRANSLATE_PREPROCESSING.bpmn	1/1/2020 7:23 PM	BPMN File
TRANSLATE_UG_NX12_TO_GENERIC_STEP...	1/1/2020 7:23 PM	BPMN File
TRANSMIT_NONCAD_FILES.bpmn	1/1/2020 7:23 PM	BPMN File
transmit_postprocess.bpmn	1/23/2020 12:20 PM	BPMN File
transmit_preprocess.bpmn	1/23/2020 12:20 PM	BPMN File
ug_nx12_cadiq.bpmn	1/1/2020 7:23 PM	BPMN File
ug_nx12_dt_ps.bpmn	1/1/2020 7:23 PM	BPMN File
ug_nx12_to_step.bpmn	1/1/2020 7:23 PM	BPMN File

### ***Deploy bpmn files***

There are two ways to deploy the bpmn files.

#### **1. Using CamundaDeployBat.bat**

- Run <dexcenter>\utilities\CamundaUtil\CamundaDeployBat.bat
- Log-in to the Camunda app at <http://<dexcenterURL>/camunda>
  - -username: dexadmin
  - -password: dexcenter
- Click “Cockpit”

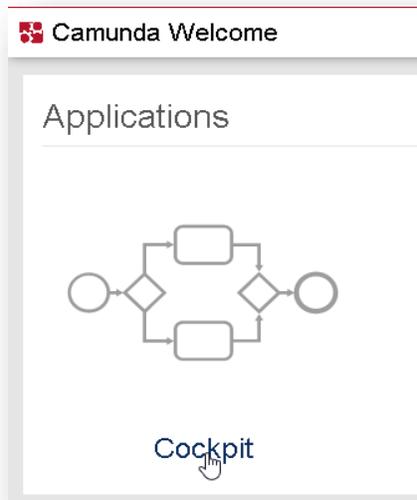


Figure 3

- To learn more about Camunda Cockpit, visit:
    - <https://docs.camunda.org/manual/7.4/webapps/cockpit/>
  - Scroll down and ensure “Process Definitions” is equal to “Deployments”. If the number of deployments is larger than the process definitions, you may need to delete duplicate deployments

Deployed			
Process Definitions	Decision Definitions	Case Definitions	Deployments
11	0	0	11

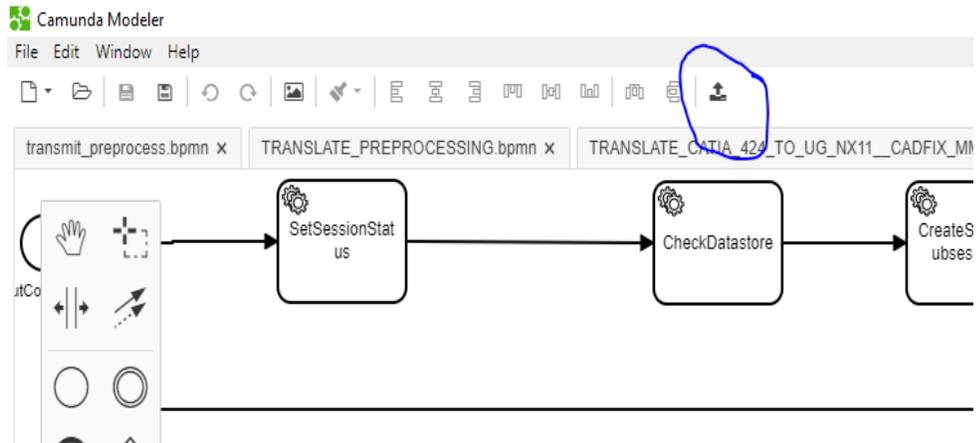
Figure 4

(Click “Deployments” then the trash icon)

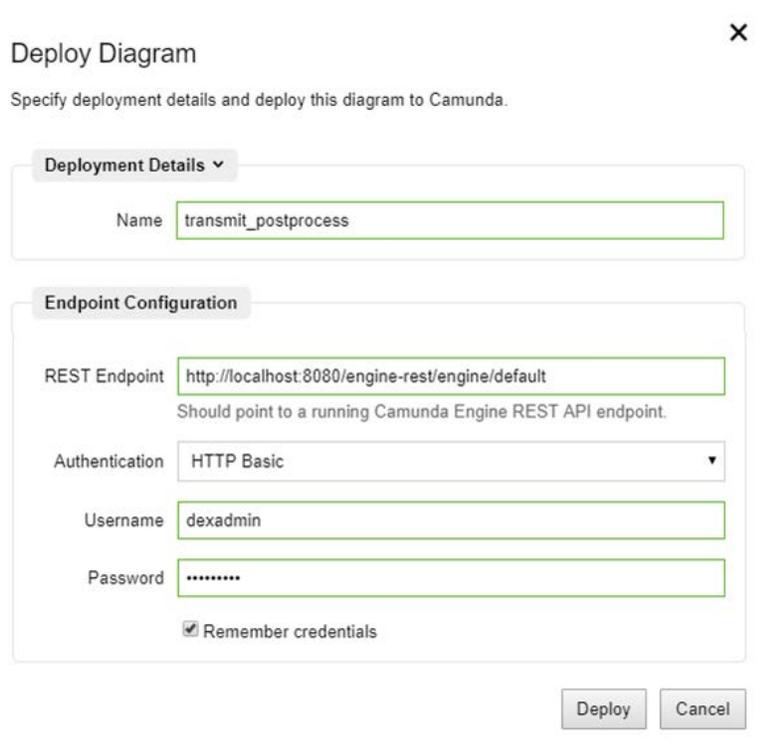
## 2. Using Camunda Modeler

- Download the Camunda Modeler from
  - <https://camunda.com/download/modeler/>
- Extract the downloaded file and open “Camunda modeler.exe”
- Click on the open icon, or from “file menu” choose “open file”
- Select the “BPMN” file you want to deploy and open it.

- Click the deploy icon (see image below)



- You should now see the following:



- In the name field, type the name of your file
- In the Endpoint Configuration, for the URL enter the URL for your server ended with engine name. For example, if we have “default” as engine name the url will be <http://localhost:8080/engine-rest/engine/default/>. [ It is the value of WORKFLOW\_ENGINE\_URL\_ROOT in camunda.txt]
- Enter Username and password.

- Click deploy. You should see a message indicating that the file was deployed.
- If you deploy an existing deployment, it will be replaced with most recent one.
- Go to the Camunda Cockpit to verify workflow deployment.

For more information about the Camunda Modeler visit:

<https://docs.camunda.org/manual/7.4/modeler/camunda-modeler/>

Lastly, execute the batch script

<dexcenterinstallationdirectory>/utilities/scripts/AddWorkflows.bat

- This script adds the configured workflows into the DEXcenter workflow, path workflow, and path workflow tables.

If this is a DTS only installation, then execute the database script “insert\_dex\_resource.sql” that was created on the DTS component. The script is located in <dexcenterinstallationdirectory>/db on the DTS system. This identifies the DTS system to the entire DEXcenter system.

Finally from within the database application, execute the script add\_workflow\_resource.sql. This script add the tasks from each DTS component to the workflow\_resources table which is used to determine the systems on which various tasks can be executed. This script is located at <dexcenterinstallationdirectory>/db.

Verify workflows are present in the following database tables:

- task\_workflows
- path\_workflows
- workflow\_parameters
- workflows
- workflow\_resources

Execute the two sql scripts for EACH DTS. Be sure to use the script generated on each DTS system.

Additional database configuration is required to enable the desired CAD systems. This is described in the Administration and Configuration Guide.

## Chapter 5. Verifying Basic DEXcenter Operation

DEXcenter should now be operational for basic functions.

We want to check that all three primary DEXcenter applications are working.

### **DEXcenter User Application**

Log into the DEXcenter user application (as above) at `http:<dexhost:port>/DEXcenter` using the `dexadmin` username and the password changed above.

Refer to the DEXcenter User Guide to identify and validate all functionality.

At a minimum, perform the following tests (see User Guide for details of each):

- In the Help tab,
  - verify that the User and Administrator documentation is available in the Documents menu
  - Verify the version in the About menu
  - Verify Java in the Java Verification menu. This checks that a valid Java JRE is available on the browser client system. If successful, it should load a box with yellow background identify the JRE level.
  - Verify the Support menu has the correct support menu.
- In the My Profile tab,
  - Verify that each menu section can be loaded.
- In the Home tab, click on the Create Session button. The Create Session form should load.
  - Transmit a small single file to user `dexadmin`
    - Select recipient “`dexadmin`” from the To button dialogue
    - Select a file using the “From Local Disk” button.
    - Select the Submit Button.
    - This should submit a file to user `dexadmin`. The screen will switch to the Home tab list of sessions and the session should appear. It may be necessary to refresh the browser.

### **DEXcenter AdminConsole Application**

Log into the DEXcenter AdminConsole using the URL `http:<dexhost:port>/AdminConsole`.

Refer to the Administration and Configuration Guide for details of using the AdminConsole.

As a minimum, verify the following:

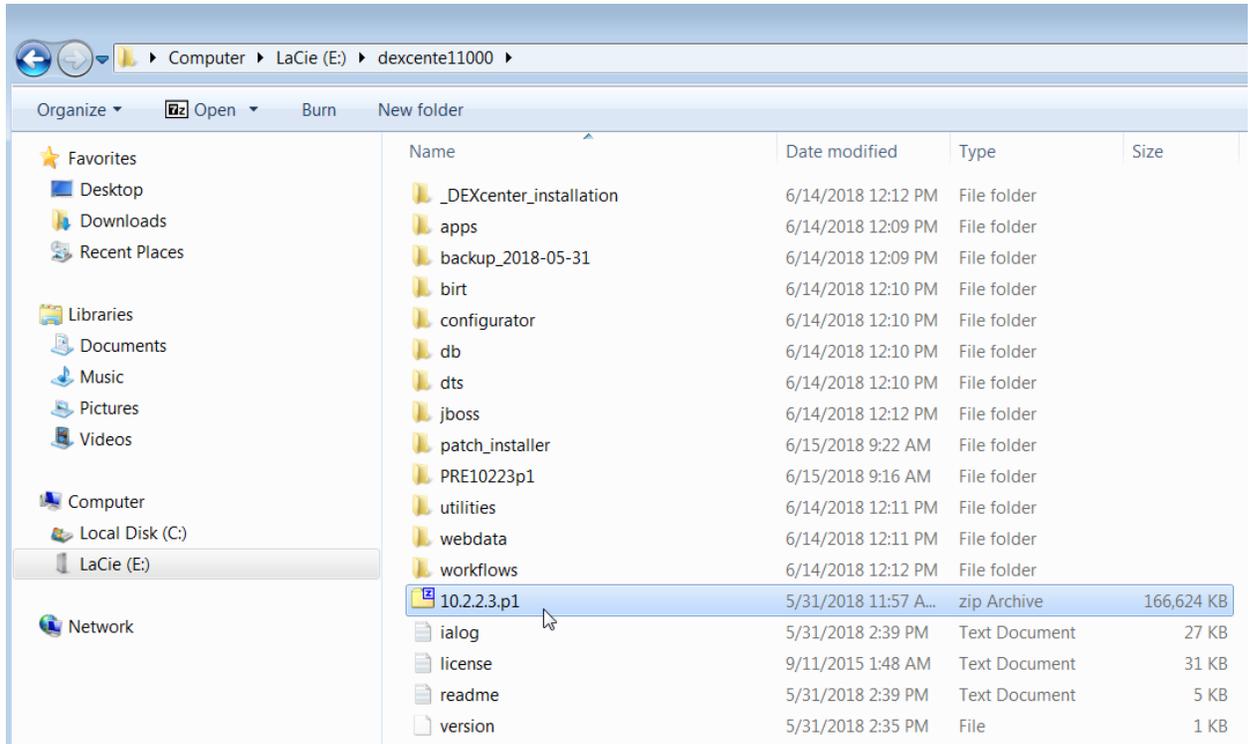
- The Session submitted from the DEXcenter user application appears on the All Session menu.
- You are able to create a new Company using the Companies menu
- You can create new users using the User Management menu.

- Click on the Diagnostics tab and then Run to perform a quick system health check. All diagnostics should pass. If not, correct any failures.

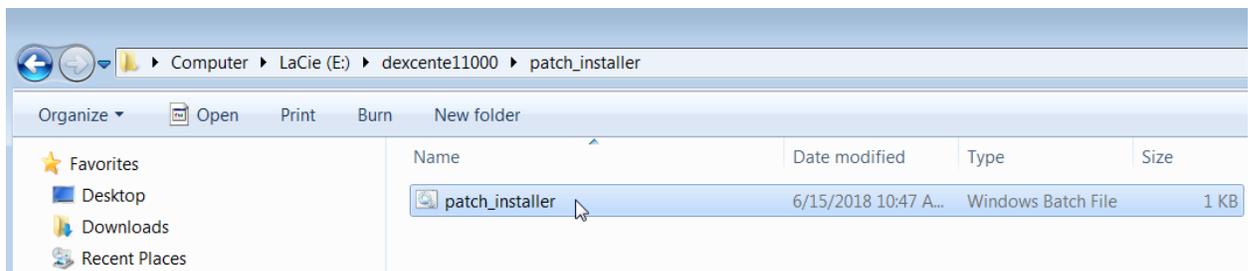
## DEXcenter Patch Installer

**IMPORTANT:** If the same patch is applied consecutively, the back-up folder will be over written with the patch’s files from the first time the patch was applied.

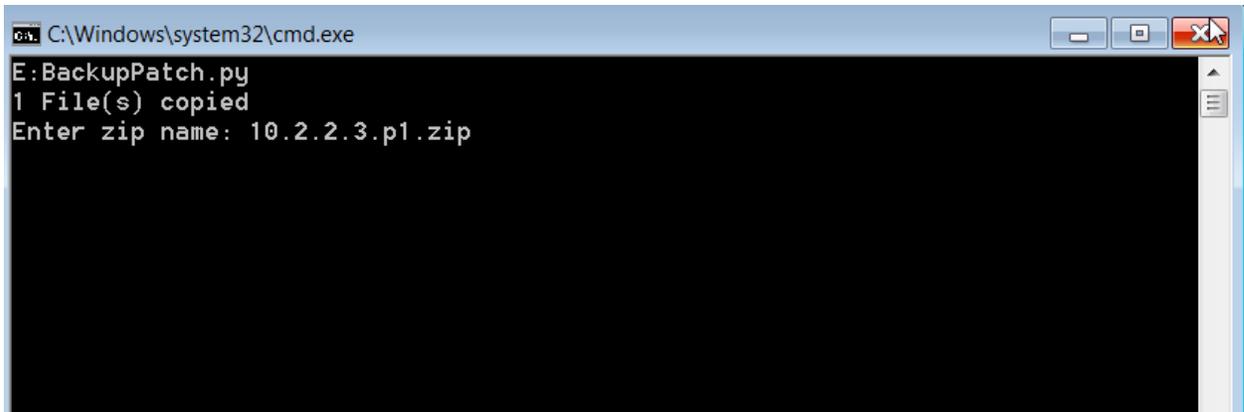
1) Copy the desired patch into DEXcenter installation directory.



2) Open the “patch\_installer” folder and run “patch\_installer” by double clicking.

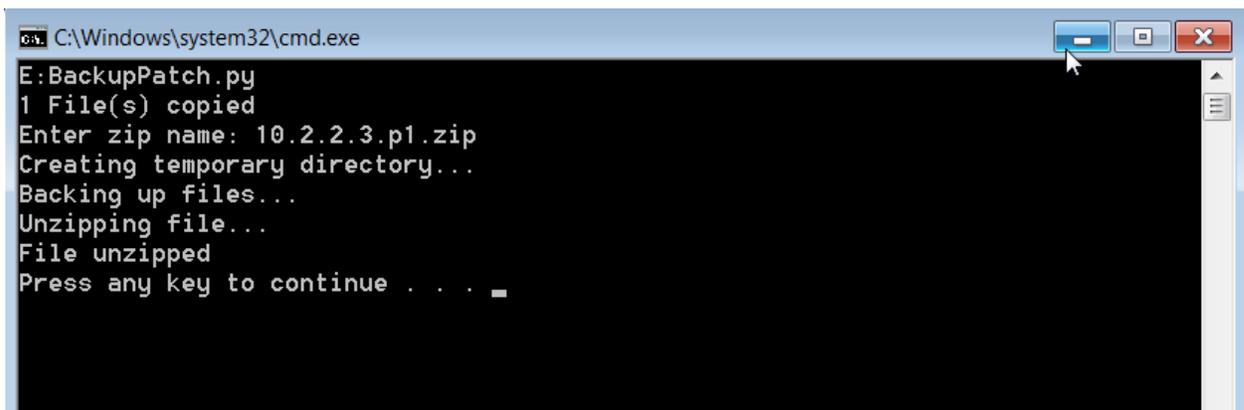


3) Type name of the patch when prompted. Include the “.zip” extension. Press “Enter.”



```
C:\Windows\system32\cmd.exe
E:\BackupPatch.py
1 File(s) copied
Enter zip name: 10.2.2.3.p1.zip
```

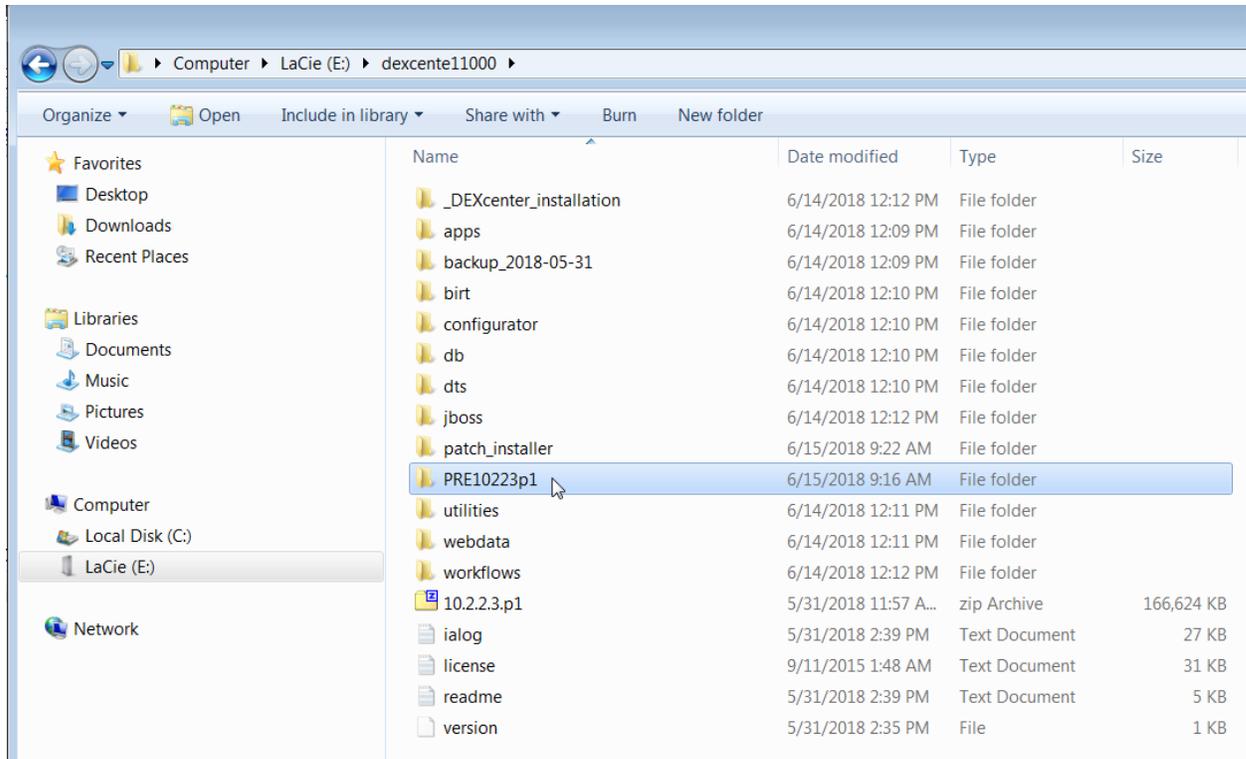
- 4) Upon completion, the terminal window will resemble the picture below. Press any key to exit.



```
C:\Windows\system32\cmd.exe
E:\BackupPatch.py
1 File(s) copied
Enter zip name: 10.2.2.3.p1.zip
Creating temporary directory...
Backing up files...
Unzipping file...
File unzipped
Press any key to continue . . . _
```

**NOTE:** In the case that the terminal indicates files are not found, this means there are additional files in the patch that were not originally included in DEXcenter.

- 5) A back up folder has been created in the installation directory. It will be titled "PRE[patch name]." This folder contains all files that were replaced by the patch. If a patch needs to be reverted, this can be done by zipping and then unzipping the back-up folder.



### Linux Version

- 1) Copy desired patch into DEXcenter installation using FileZilla or another tool
- 2) In the Linux terminal, navigate to the DEXcenter directory (EX: //webapp/dexcenter)
- 3) Type “patch\_installer.py” and press Enter
- 4) Type the name of the patch to be applied including “.zip” file extension (EX: patch.name.ver.num.zip) and press Enter
- 5) A back up folder has been created in the installation directory. It will be titled “PRE[patch name].” This folder contains all files that were replaced by the patch. If a patch needs to be reverted, this can be done by zipping and then unzipping the back-up folder.