keynote DeviceAnywhere™
Mobile App Lifecycle Management™

# Test Center Enterprise

# Local Device Server Installation Guide

## Release 5.3

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July 2012.

# Notice



Test Center Enterprise 5.3



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# Contents

# About This Document

This document outlines the requirements and procedures for installing the Keynote DeviceAnywhere Local Device Server and Keynote DeviceAnywhere Studio client software. You can then attach mobile devices to the Local Device Server in order to control and interact with them in Studio and automate your mobile testing.

## Document Outline

In this document:

Requirements lists the Keynote DeviceAnywhere components required for using local devices and the order of installation. It also provides installation guidelines and lists system requirements, network port and connectivity requirements, and mobile device requirements.

Installation contains step-by-step instructions for installing and verifying:

- Local Device Server for communicating with devices
- Keynote DeviceAnywhere Studio client software
- Devices—the process for onboarding mobile devices to the Local Device Server is broadly outlined in this document. Detailed, platform-specific instructions for onboarding smart devices can be found at http://www.keynotedeviceanywhere.com/tce-pvt-devices-documentation.html.

System Verification lists tests to verify the functionality of your Keynote DeviceAnywhere test environment.

## Typographical Conventions

The table below describes the typographical conventions used in DeviceAnywhere documentation.

| Style | Element | Examples |
|---|---|---|
| Blue | Links and email addresses | http://www.keynotedeviceanywhere.com<br>The Document Outline section describes the structure of this manual. |
| **Bold** | User interface elements such as menu items | Click **My Devices** in the **Test Center Enterprise** view of Keynote DeviceAnywhere Studio. |
| `Monospace` | Commands, code output, filenames, directories | Right-click the project's `step groups` directory. |
| **`Monospace bold`** | User input | In a command window, type **`ipconfig`**. |
| *Italic* | Document titles and emphasis | Refer to the *iOS Device Onboarding Guide* for instructions on attaching an iOS device to a Local Device Server. |

## Contacting Support

If you have any comments or suggestions regarding this document, contact the Keynote DeviceAnywhere support organization for enterprise customers at kda-esupport@keynote.com. You may also send your

inquiries about Keynote DeviceAnywhere product demonstrations and consulting services to this address.

Customers can find additional support information at http://www.keynotedeviceanywhere.com/support.html.

## Additional Documentation

You can find additional documents at http://www.keynotedeviceanywhere.com/tce-pvt-devices-documentation.html, which you can also access from the **Help** menu in Studio:

- *Test Center Enterprise Release Notes*
- *TCE User Guide*
- *TCE Automation User Guide*
- Platform-specific onboarding guides for software-integrated devices

# 1 Requirements

This chapter lists the components required for using local devices and the order of their installation. This chapter also lists system and network requirements for installing Keynote DeviceAnywhere components. (Step-by-step installation instructions can be found in the next chapter, Component Installation.)

Before attempting to install any components, please review the information in this chapter:

- List of components and order of installation
- System requirements
- Local Device Server Requirements
- Device Requirements (requirements for smart devices attached to the Local Device Server)
- Component Connectivity requirements, including Troubleshooting Connectivity

## 1.1 Components and Order of Installation

You must install the following components in order shown below to use local devices:

1 Local Device Server, downloaded from the Test Center Enterprise Portal—Server that communicates with smart devices

2 Keynote DeviceAnywhere Studio software, downloaded from the Test Center Enterprise Portal—Client interface for interacting with devices and creating and running test scripts

3 Device onboarding, after installing device profile XML files, procured from Keynote DeviceAnywhere (generally one for each device to be added to the system)

## 1.2 System Requirements

Minimum requirements and operating systems tested for Keynote DeviceAnywhere components are:

*Table 1-1 Minimum System Requirements for Individual Components*

| DA Component | Hardware/Software | Requirement | Notes |
|---|---|---|---|
| Local Device Server | Processor speed | 2GHz Pentium 4 (dual core) | ◆ Maximum of 2 concurrently attached devices supported. (You can onboard more than 2 devices.)<br>◆ Install this component on the same machine as Keynote DeviceAnywhere Studio. |
| | Memory | 2GB RAM | |
| | Hard drive space | 10GB | |
| | Operating system | ◆ Windows XP SP2<br>◆ Windows Server 2003<br>◆ Windows Vista<br>◆ Windows 7<br>◆ Windows Server 2008<br>*Local Device Server is compatible with Windows 7 64 bit. Only 32 bit supported on other Windows systems.* | |
| | USB ports | USB 2.0 ports for device connectivity<br>*Number of ports per device varies –* | |

| DA Component | Hardware/Software | Requirement | Notes |
|---|---|---|---|
| | | *Directly attached smart devices require one or none.* | |
| Keynote DeviceAnywhere Studio | Processor speed | 2GHz Pentium 4 | |
| | Memory | 2GB RAM | |
| | Hard drive space | 10GB | |
| | Operating system | ◆ Windows XP SP2<br>◆ Windows Server 2003<br>◆ Windows Vista<br>◆ Windows 7<br>◆ Windows Server 2008<br>*32 and 64 bit supported on Windows.*<br>◆ Mac OS<br>◆ Linux<br>*JDK v1.5 must be installed for Mac/Linux.* | |
| | Screen resolution | 1024 x 768 or higher | |
| | Additional | ◆ Optional audio card for sound input/output<br>◆ JDK v1.5+ for Mac/Linux | |

## 1.3 Local Device Server Requirements

**Devices**— The Local Device Server supports two devices concurrently attached to the server. You can, however, onboard several devices—only two of these can be attached concurrently at any given time.

**Studio**—Local Device Server and Studio client software must be installed on the same machine.

**USB Ports**—The Local Device Server must have one USB 2.0 port per device connected via data cable. Non-rooted Android devices connected by Wi-Fi also require one USB port.

## 1.4 Device Requirements

Keynote DeviceAnywhere's Direct-to-Device Software methodology is used to control smart devices attached to the Local Device Server.

- You must provide devices to be connected locally. Contact your Keynote DeviceAnywhere TAM for a list of supported devices.
- Devices are connected to the Local Device Server via USB cable or Wi-Fi—check the onboarding guides at http://www.deviceanywhere.com/enterprise-documentation.html.
- Devices require one available USB 2.0 port on the Local Device Server if connecting to it by data cable. Non-rooted Android devices connecting by Wi-Fi also require a USB port. Check the onboarding guides at http://www.deviceanywhere.com/enterprise-documentation.html.
- Devices must be onboarded to the Local Device Server in order to be controlled in Studio. Platform-specific prerequisites for onboarding smartphone(s) are detailed in the appropriate onboarding guide.
- A local device is only visible to and can be acquired by the user onboarding the device.

## 1.5 Component Connectivity

- The Local Device Server and Studio must be able to communicate with each other—Studio must be able to connect to the Local Device Server installed on the same machine in order to acquire devices (see Port Settings below).
- The Local Device Server must be able to connect over the Internet to the TCE Access Server—the Access Server IP address and port number are displayed in the Local Device Server Administrator (see Local Device Server Installation).
- Devices must be connected to the Local Device Server machine via data cable or Wi-Fi—see the onboarding guides on http://www.keynotedeviceanywhere.com/tce-pvt-devices-documentation.html.
- Studio must be able to connect over the Internet to the TCE Access Server—the Access Server IP address and port are preconfigured in the Studio installer (see Installing Studio on Windows).

### 1.5.1 Port Settings

Keynote DeviceAnywhere components communicate with each other over TCP/IP. Before you begin the installation, make sure that you have configured all the required ports based on the port settings provided in the table below. Default port settings are listed here.

*Table 1-2 Port Requirements*

| DeviceAnywhere Servers | Description | Open Ports |
|---|---|---|
| Local Device Server | The Local Device Server provides access to devices. Users interacting with devices in Studio communicate with the Local Device Server on port 443. This server must therefore accept inbound traffic on port 443, which is the default setting and can be reconfigured.<br>The Local Device Server must also be able to send outbound communication to an Access Server from port 443 (SSL). The port for outbound communication cannot be changed.<br>**NOTE** Ensure that no other application/service is using port 443. | 443 – In (Default setting; can be changed during installation)<br><br>443 – Out (SSL; cannot be changed) |
| Keynote DeviceAnywhere Studio | Studio is the client software used to control devices and create test assets. Studio must be able to communicate over port 443 with the Local Device Server installed on the same machine and with the other remote Keynote DeviceAnywhere components over the Internet. | 443 – Out (SSL; cannot be changed) |

### 1.5.2 Troubleshooting Connectivity

After installing Keynote DeviceAnywhere components, use the Telnet procedure below to troubleshoot connectivity between machines. A list of tests is given in Table 1-3 below.

To use Telnet to test connectivity on a Windows machine:

1 Go to the **Start** menu and select **Run**.

2 Type **`cmd`** to bring up a DOS command prompt window.

3 Type the `telnet` command in the window in the format shown:

```
telnet <IP/Hostname> <Port_Number>
```

Tests to run are shown in the table below:

*Table 1-3 DeviceAnywhere Server Connectivity Tests*

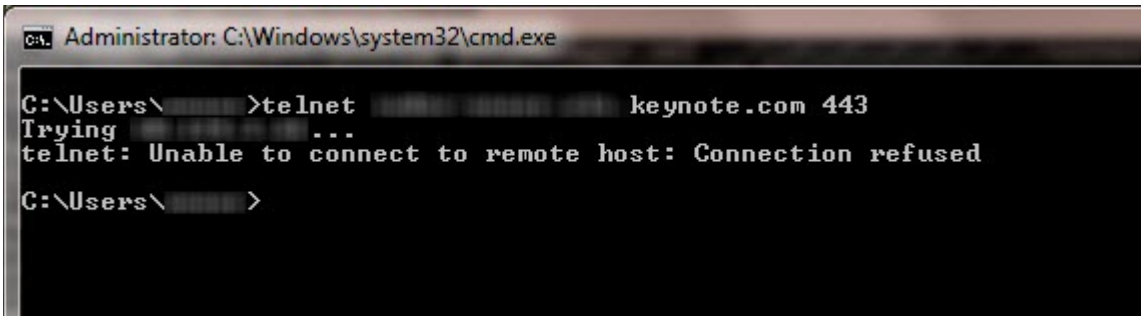
| # | Test |
|---|---|
| 1 | *Action*: Open a Telnet session from Local Device Server machine to port 443 on the TCE Access Server.<br>*Command*: **`telnet svtceas01.deviceanywhere.com 443`** |
| 2 | *Action*: Open a Telnet session between Studio to port 443 on the Local Device Server installed on the same machine.<br>*Command*: **`telnet <Local_Device_Server_IP> 443`**<br>**NOTES** Do not use `localhost` to indicate the local machine hostname/IP address.<br>Change the incoming Local Device Server port number from 443 if configured differently. |

Results:

- When access to the server in question is successful, the DOS window appears blank.
- When access to the server in question is unsuccessful, you will see an error message.

The screenshot below shows the error message generated when a connection does not exist on port 443.

*Figure 1-1 Telnet Error Message*




Proxy server settings can sometimes negatively affect the performance of your system. If you are experiencing connectivity issues, make sure the `deviceanywhere.com` domain is white-listed in firewall or proxy server settings.

There is a known incompatibility with Bluecoat proxy servers. In order to access the `deviceanywhere.com` domain, your IT team must open Bluecoat's policy file with a text editor and add the following statement under the `<Proxy>` section header:

```
url.domain=deviceanywhere.com detect_protocol (none)
```

Contact kda-esupport@keynote.com if you need further assistance to resolve this issue.

Some anti-virus software has port filtering settings turned on for port 443 by default. Since all data communication between Studio and Keynote DeviceAnywhere servers occurs on port 443, this can delay response time. Remove port filtering on port 443 to correct the problem.

**NOTE** Kaspersky anti-virus software has port filtering turned on for port 443 by default.

# 2 Installation

This chapter will take you through the following:

1 Installing the Keynote DeviceAnywhere Local Device Server

2 Installing Keynote DeviceAnywhere Studio

3 Guidelines for attaching devices to the Local Device Server (details covered in onboarding guides available at http://www.keynotedeviceanywhere.com/tce-pvt-devices-documentation.html)

## 2.1 Local Device Server

The Local Device Server hosts one or more devices over USB or Wi-Fi (Bluetooth connectivity is available but is only recommended if your testing specifically requires it—contact your Keynote DeviceAnywhere TAM for details). The Local Device Server supports two concurrently attached devices. See Infrastructure Requirements for system and connectivity requirements and installation guidelines.

### 2.1.1 Local Device Server Installation

Before installation, you must gather the following information:

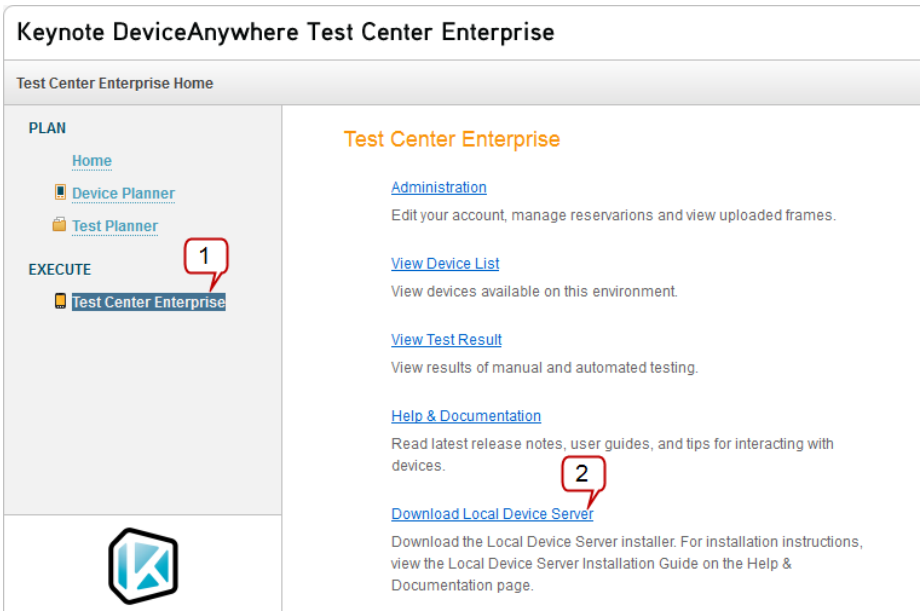
- The credentials of a Keynote DeviceAnywhere account with permission to connect local devices
- The IP address or hostname of the machine on which the Local Device Server is to be installed

To install the Local Device Server:

1 Download the Local Device Server executable from the TCE Portal:

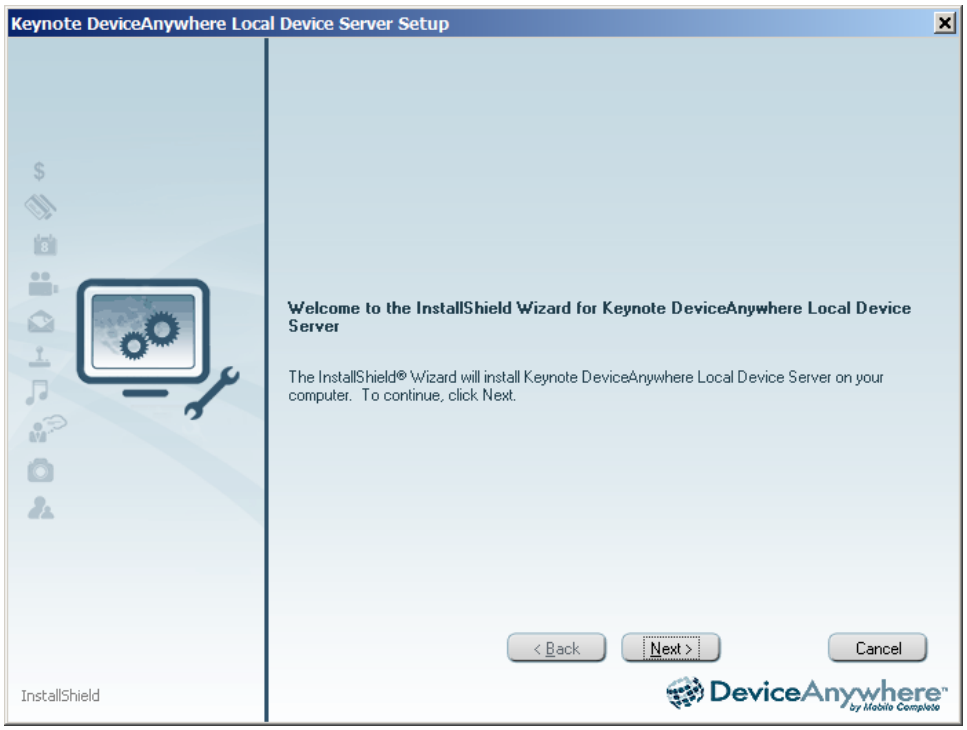
a Access the TCE Portal by logging in to www.keynotedeviceanywhere.com. You can also directly access the TCE Portal at http://tce.deviceanywhere.com/home.

b Select your Test Center Enterprise environment under **Execute** (screen left), then click **Download Local Device Server** to save the executable to your local drive.

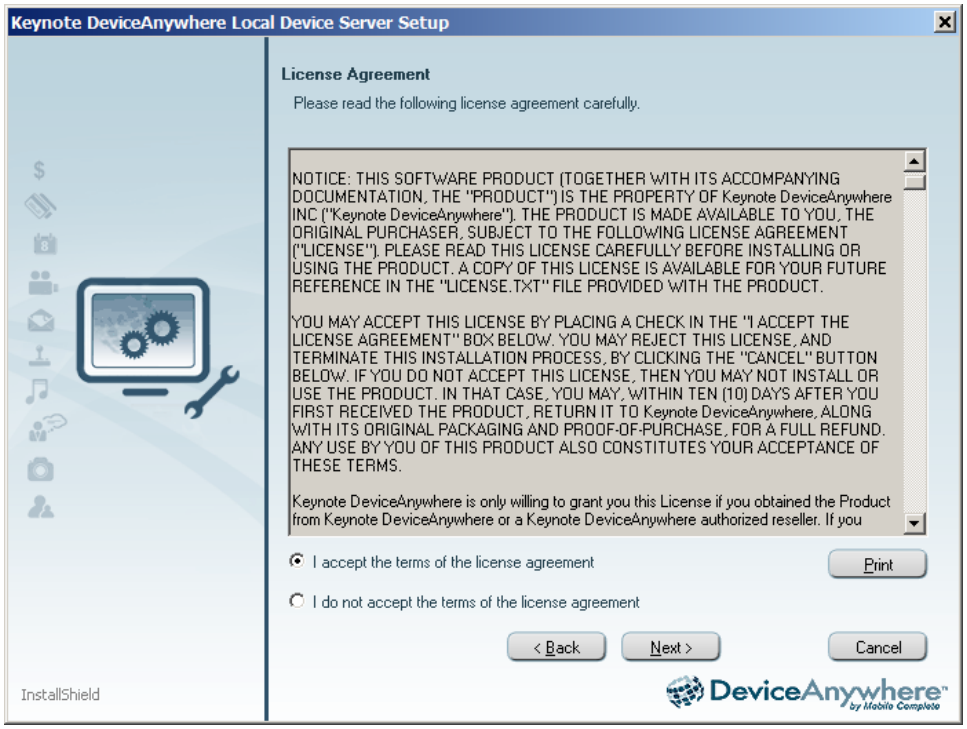


2 From your download directory, double-click the `LocalDeviceServer.exe` installer to execute it.

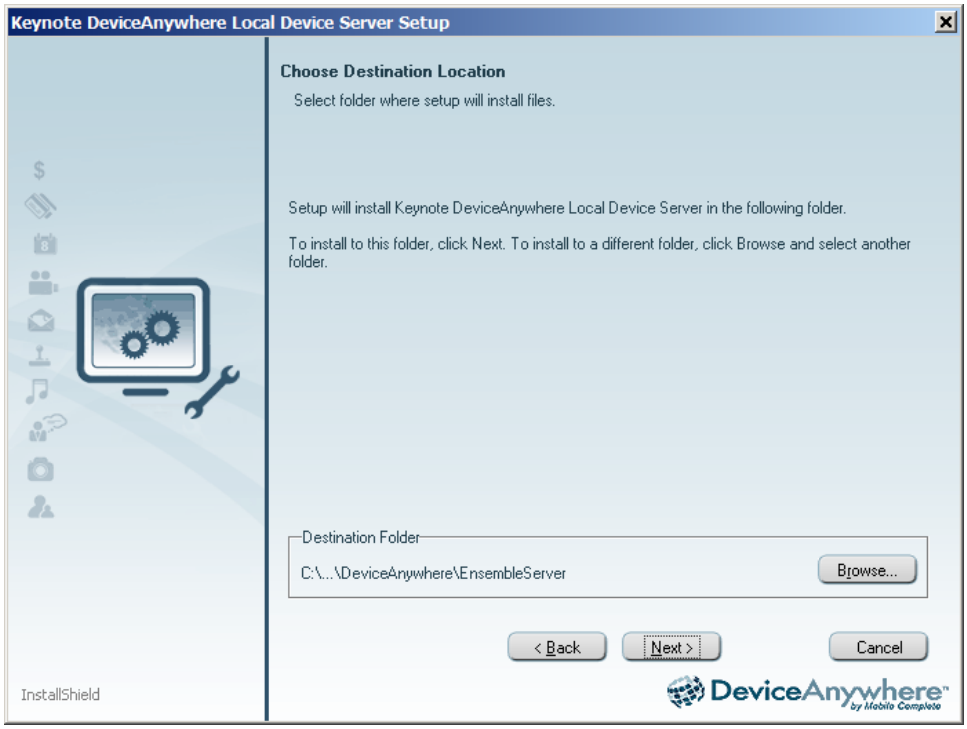
3 Click **Next** in the setup screen that appears.



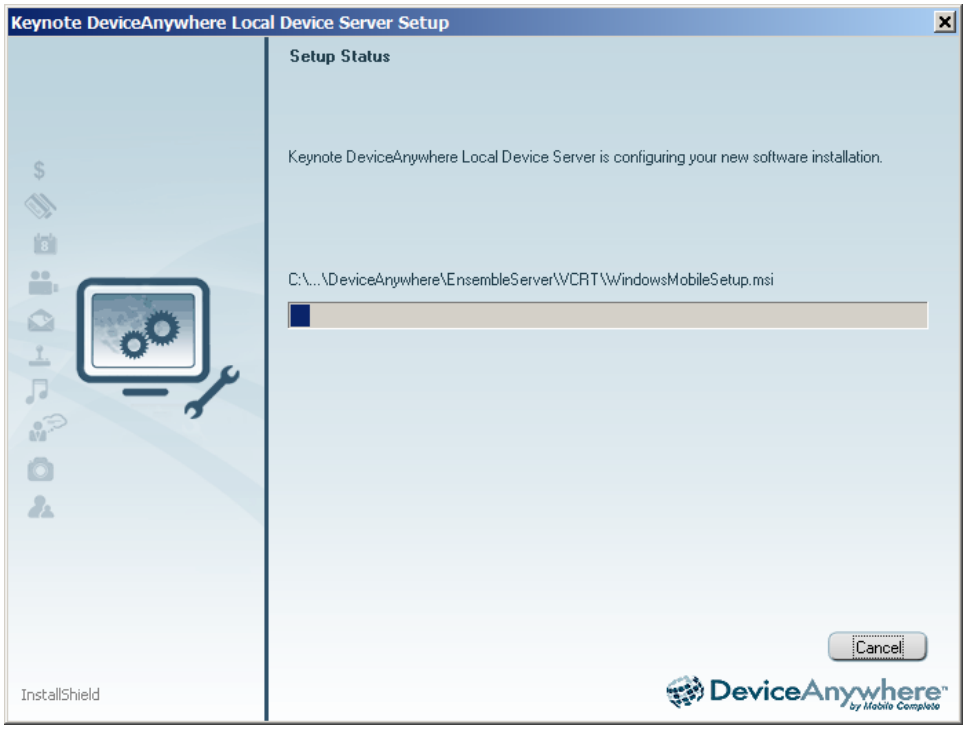

4 Accept the license terms and click **Next**.



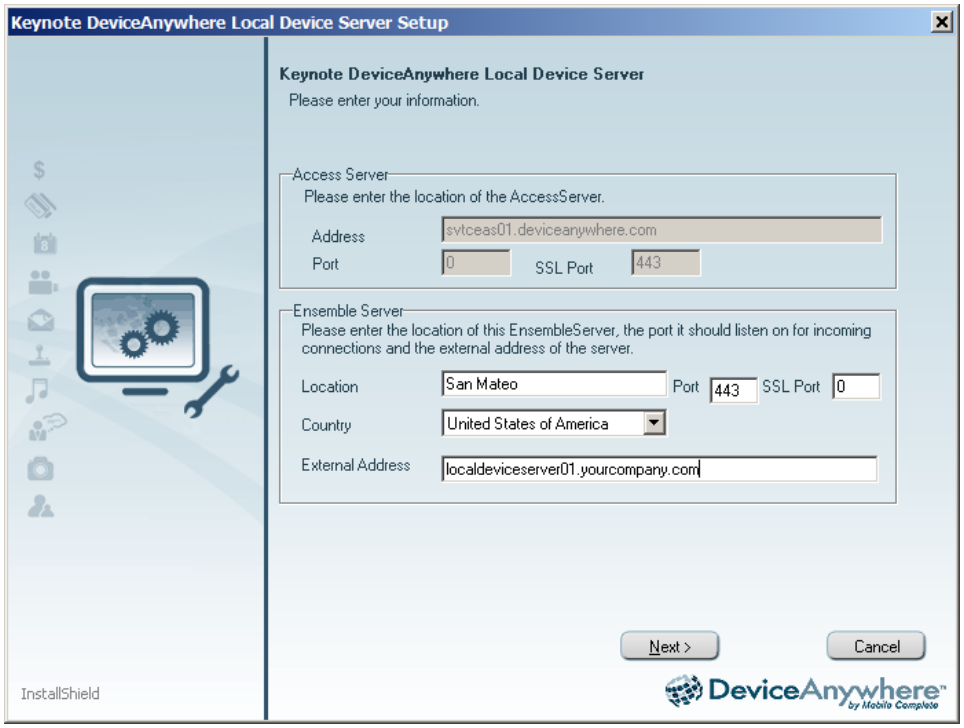
5 Choose a destination folder and select **Next**. The default installation location is `C:\Program Files\DeviceAnywhere\EnsembleServer`. You may enter a different location if desired.




The installer displays the progress of the installation.

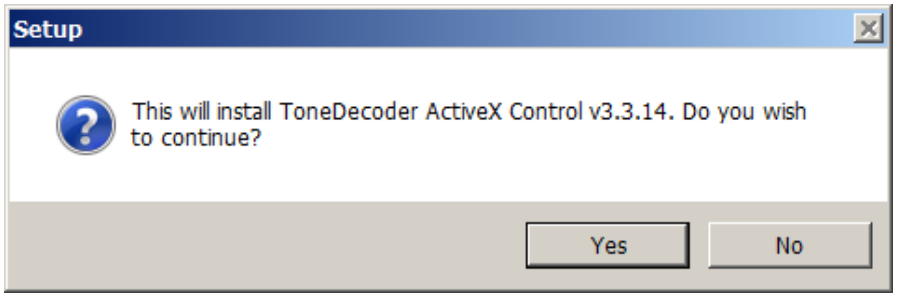


6 In the configuration screen, enter information as shown in the table below and click **Next**.



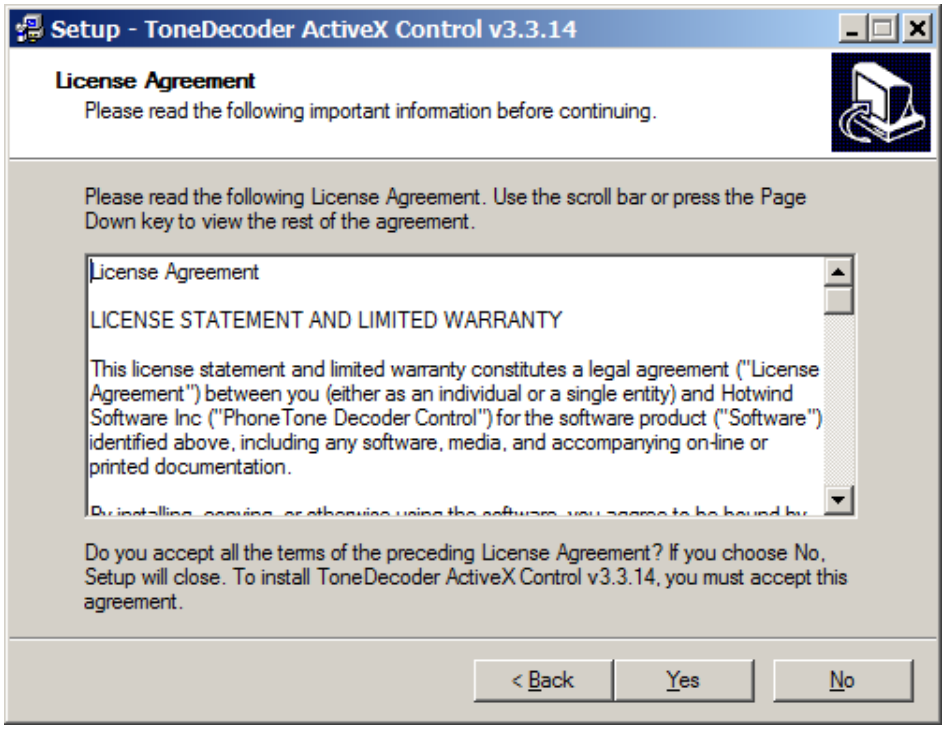

| Field | Value |
|---|---|
| **Address** | Access Server IP/Hostname (not editable) |
| **Port** | The default port of the Access Server is `443` (not editable). |
| **SSL Port** | `0` (not editable) |
| **Location** | Enter the name of the city, e.g., `Paris`, where the Local Device Server is physically located. |
| **Port** | The default incoming port of the Local Device Server is `443`—change if different. |
| **SSL Port** | The default SSL port for incoming communication is `0`, i.e., disabled. |
| **Country** | Select the country, e.g., `France`, where this machine is located. |
| **External Address** | Local Device Server IP/hostname<br>Enter the full hostname or IP address of the machine hosting the Local Device Server. This is IP address or machine name that other system components will use to communicate with the Local Device Server.<br>To find your machine hostname, right-click **My Computer > Properties**. Enter the full **Computer name**. |

7 Select **Yes** to install the Tone Decoder ActiveX Control. This enables the sound decoder that supports the Wait Audio command.

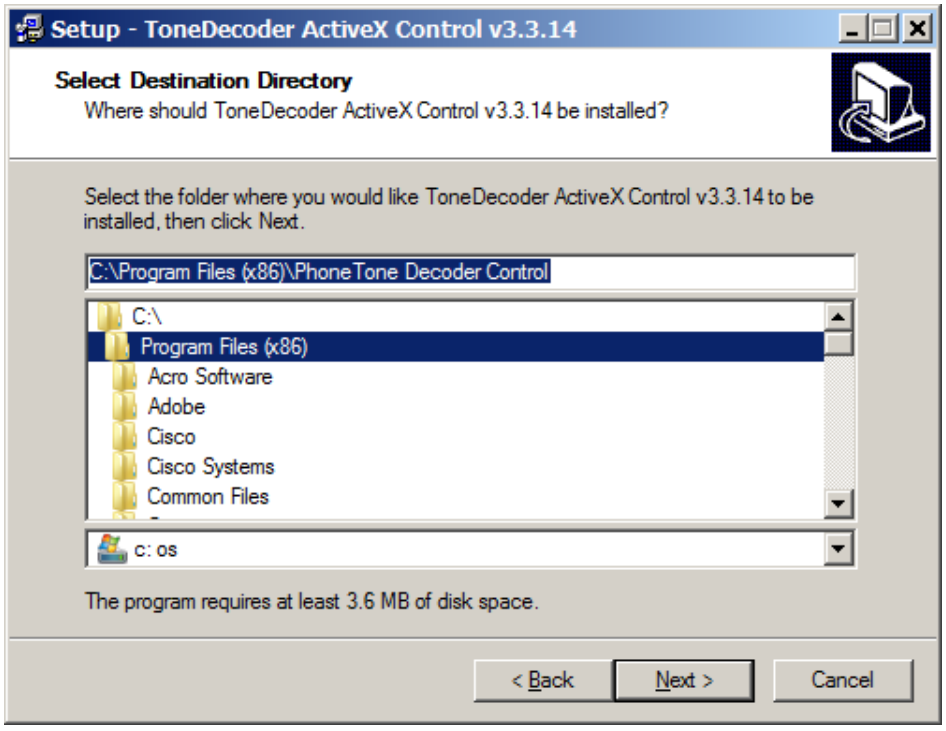



8 In the Tone Decoder ActiveX Control installation wizard, select **Next**.

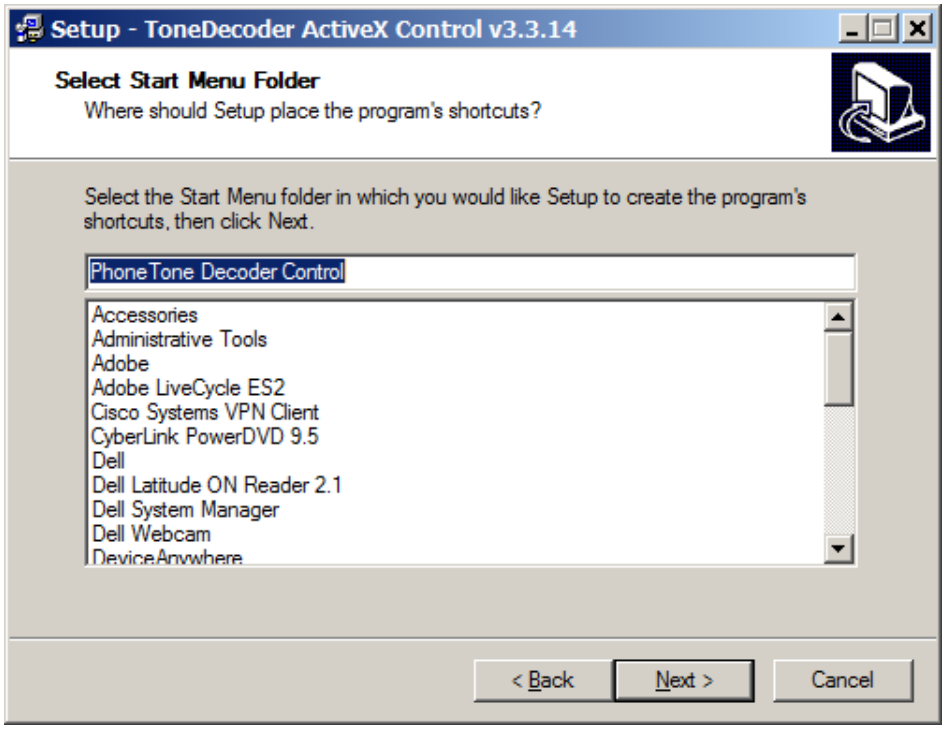
9 Accept the Tone Decoder ActiveX Control licensing terms.



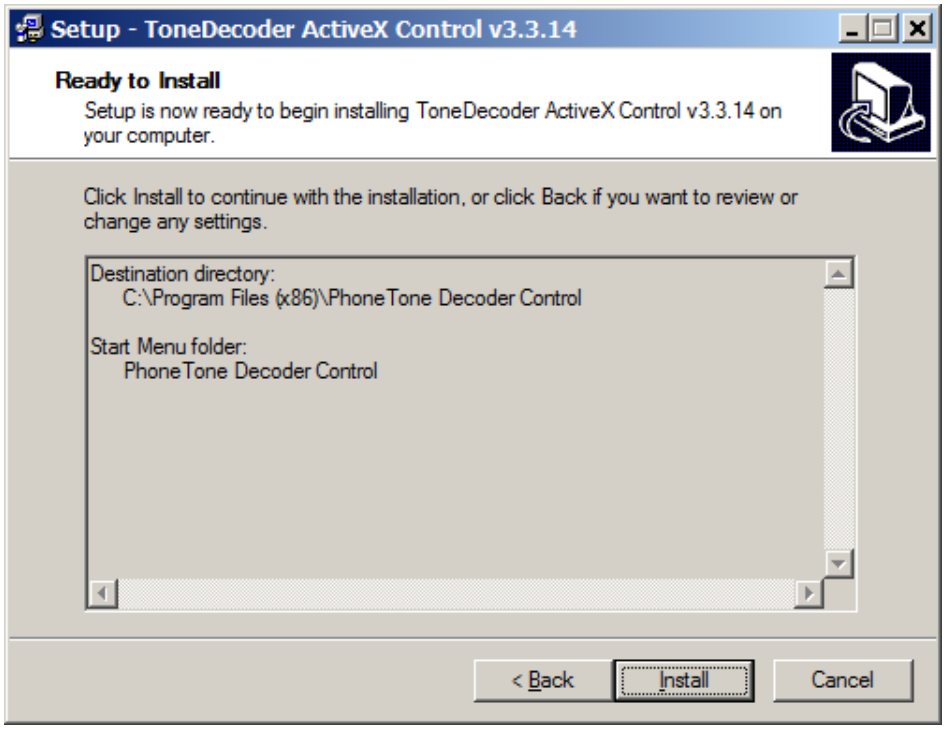

10 In the Select Destination Directory screen, choose an installation location for the Tone Decoder ActiveX Control. The default destination is `C:\Program Files`. You may choose another location. Click **Next**.



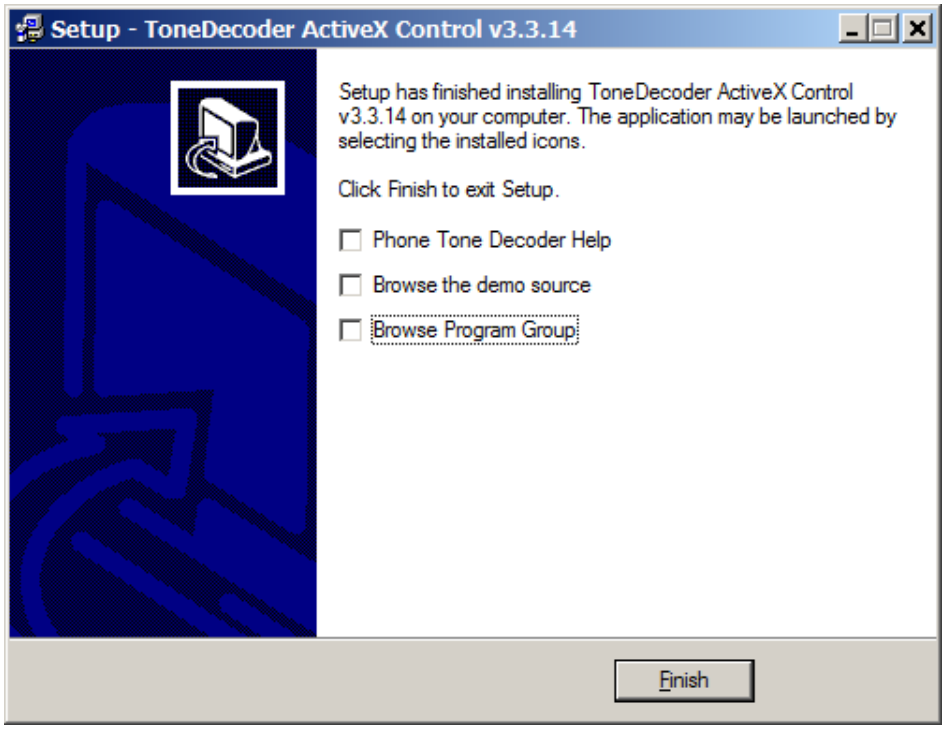
11 Next, you must choose a location for the Tone Decoder's shortcuts in the **Start** menu. Click **Next** to install the shortcuts.



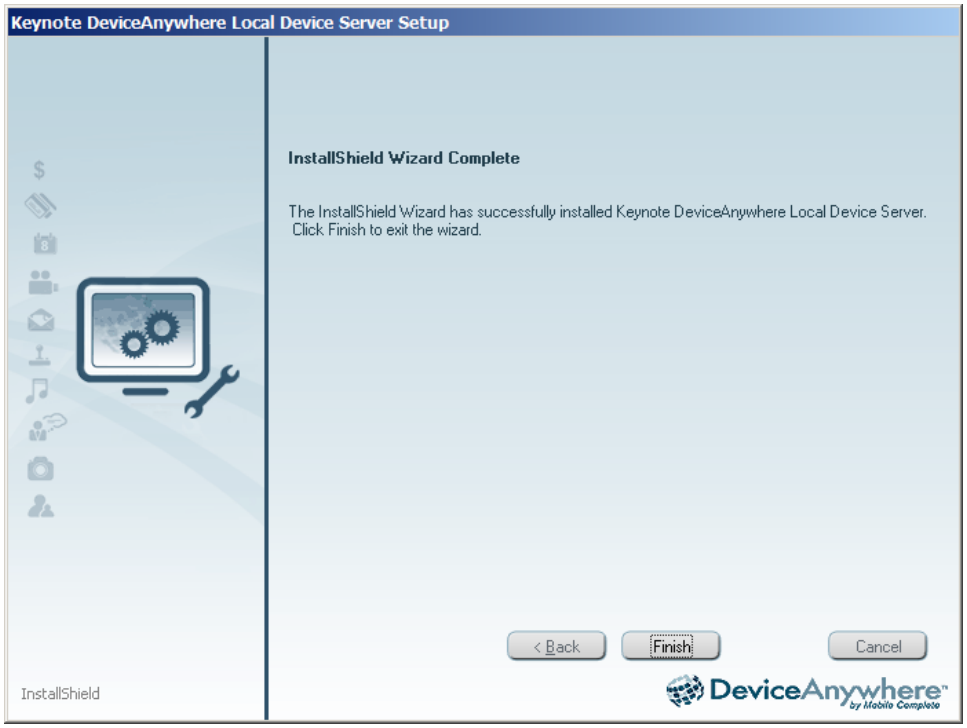

12 Click **Install** to begin installation of the tone decoder.



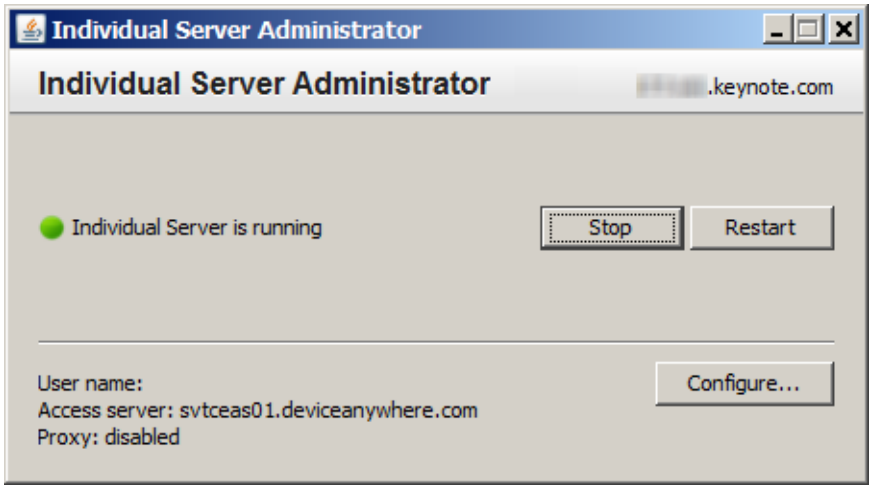
13 Select **Finish** to complete installation of the Tone Decoder ActiveX Control.




**14** Several intermediate installation windows appear and are automatically cleared from your desktop. Wait for the window below to appear and click **Finish** to complete installing the Local Device Server.



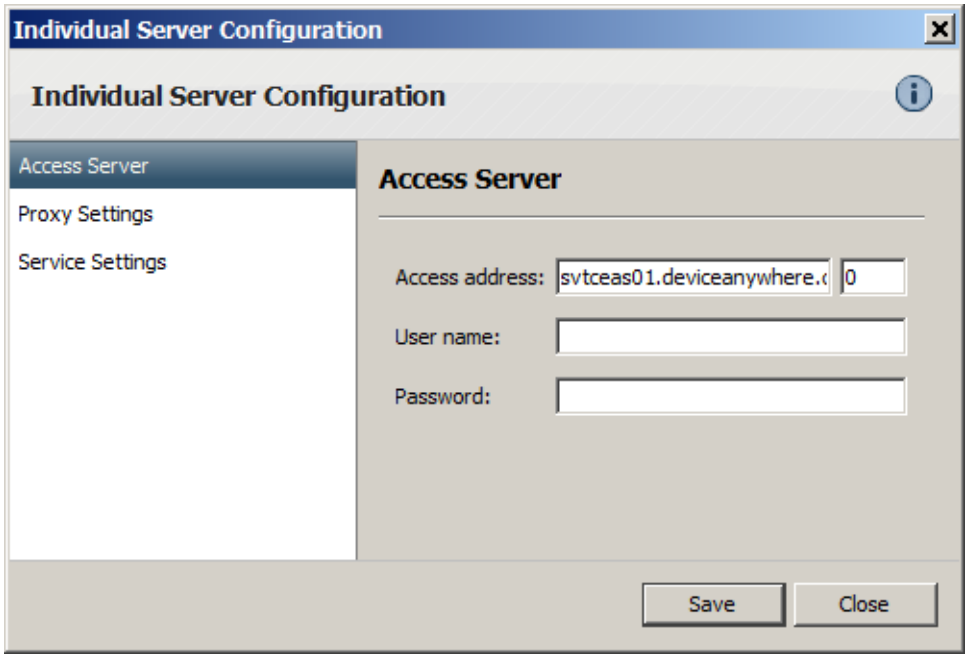
15 The Administrator window for the Local Device Server appears concurrently, in which you must enter login credentials to connect with the Access Server. Click **Configure**.



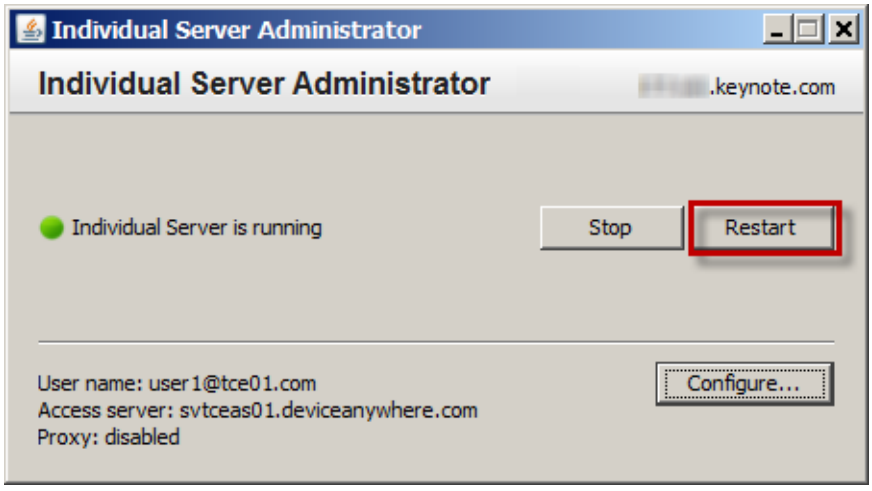

**NOTE** The system tray displays the icon for the Administrator  , while a shortcut  is placed on the desktop.

16 In the **Access Server** tab, enter your Keynote DeviceAnywhere **User name** and **Password** and **Save** your settings.

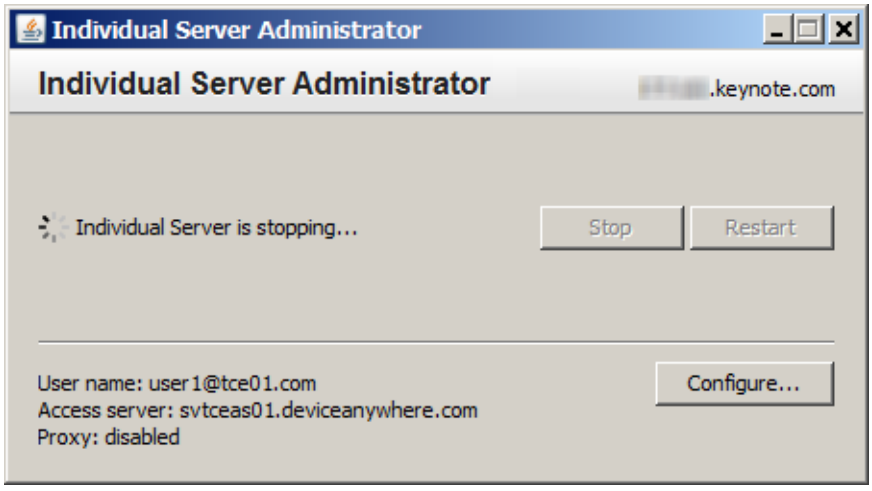
**IMPORTANT** Do not edit the address or port of the Access Server.



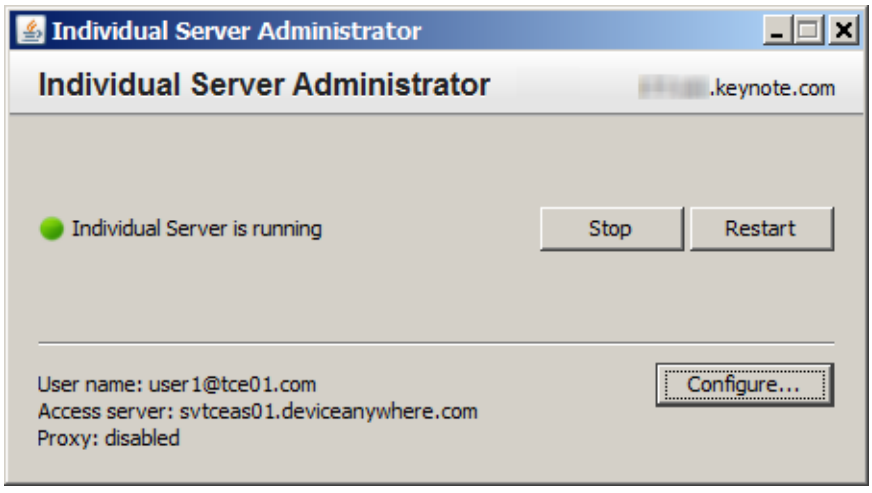
17 The Administrator window now displays the user credentials you have saved. **Restart** the Local Device Server.




The Administrator window indicates that the server is being stopped. The icon in the system tray also indicates a restart in progress  .




The Administrator window indicates when the Local Device Server has been restarted.



### 2.1.2 Verifying Local Device Server Installation

When you have successfully installed and configured the Local Device Server, you can verify the installation. Log files can be found at `C:\Program Files\DeviceAnywhere\EnsembleServer\logs`.

Verify in the `wrapper.log` file that:

- The Local Device Server has initialized loading data from Access Server.

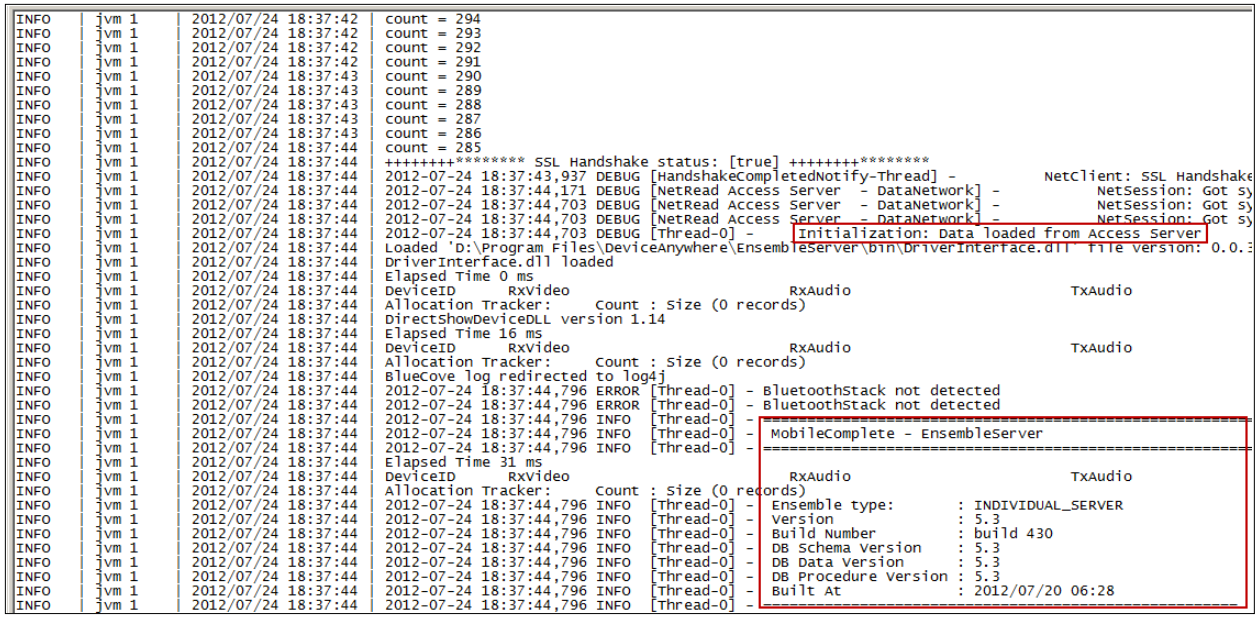
  Look for the line `Initialization: Data loaded from Access Server`.

- The Local Device Server log file displays the correct build version and date.

  Look for a banner displaying build information.

Items to verify in the log file are shown in the figure below.

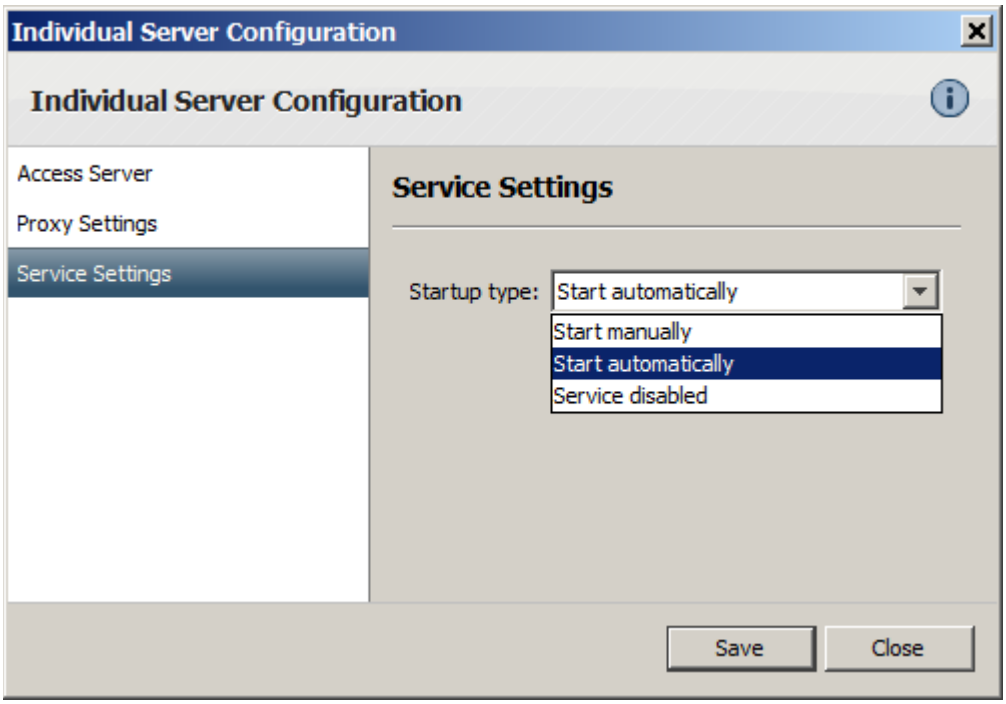
*Figure 2-1 Local Device Server Log*



### 2.1.3 Starting and Stopping the Local Device Server

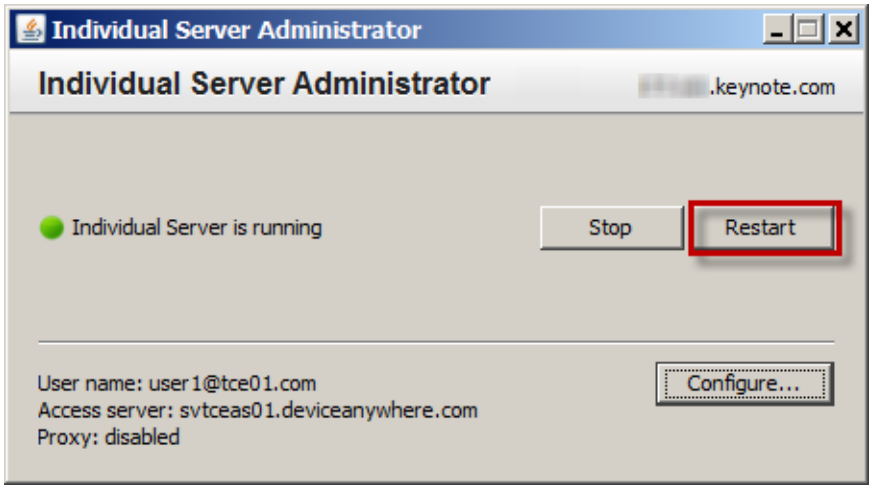
The Local Device Server is configured by default to start automatically when you power on the machine. You can change startup options in the Local Device Server Administrator, which you can launch using the desktop shortcut  .

1 In the **Service Settings** tab, opt to start the Server automatically or manually.




2 **Save** your settings.

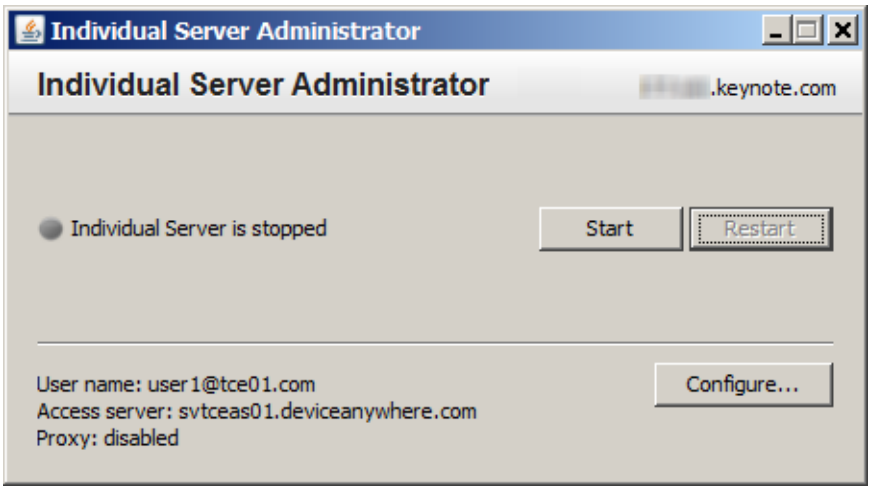
3 **Restart** the Local Device Server.




To start and stop the Local Device Server manually, you can use either the Local Device Server Administrator  or the Windows Computer Management tool.

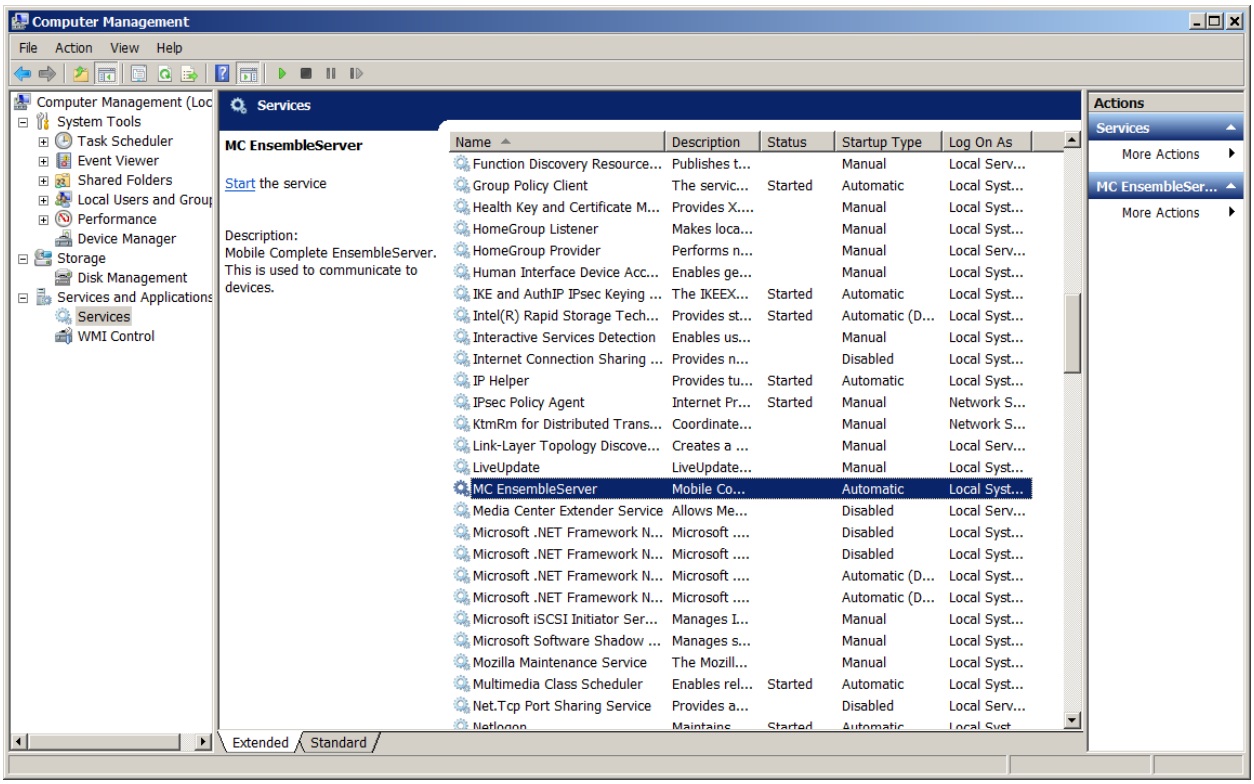
In the Local Device Server Administrator, click **Start**.

*Figure 2-2 Starting Local Device Server Using the Administrator*




To use Windows Computer Management, navigate to **My Computer** > **Manage** > **Services**. Select the **MC EnsembleServer** service to **Start**.

*Figure 2-3 Starting Local Device Server Using Windows Computer Management*



## 2.2 Keynote DeviceAnywhere Studio

Keynote DeviceAnywhere Studio is the client application that enables you to interact with shared as well as locally attached devices and create manual and automated tests in the Test Case Manager and Test Automation views. This section assumes you are installing the Studio for the first time.

See Requirements for system and connectivity requirements.

Before installation, you require the credentials of a TCE account so you can log in to the TCE Portal and download the Studio installer.

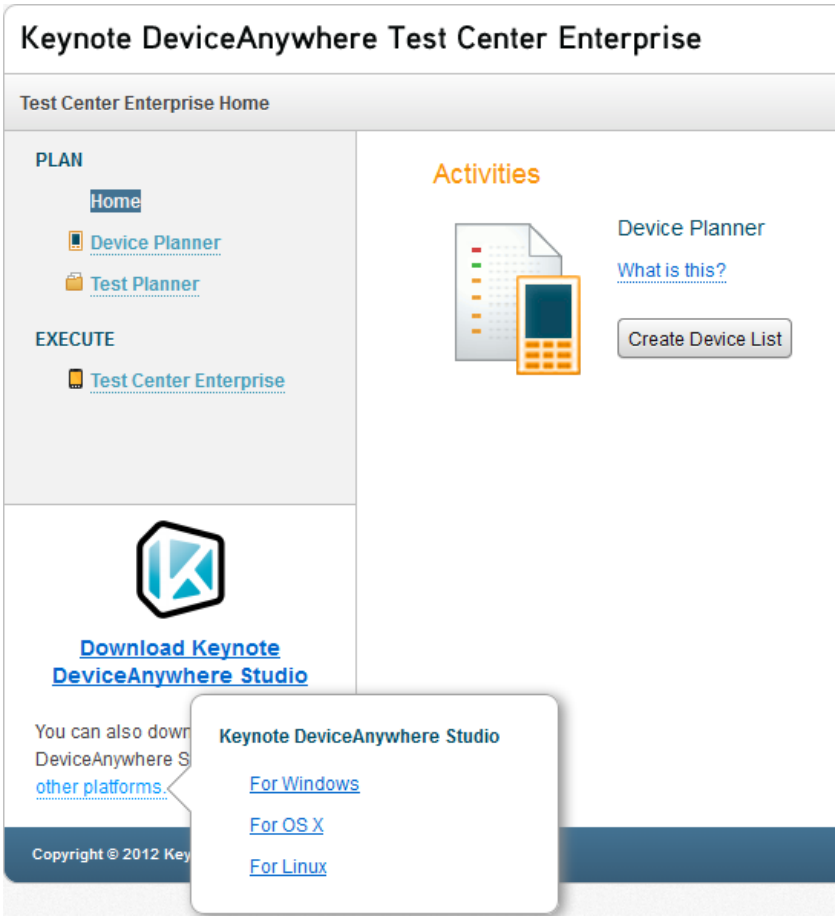
### 2.2.1 Installing Studio on Windows

To install Keynote DeviceAnywhere Studio:

1 Download the Studio executable from the TCE Portal:

a Access the TCE Portal by logging in to www.keynotedeviceanywhere.com. You can also directly access the TCE Portal at http://tce.deviceanywhere.com/home.

b Select **Download Keynote DeviceAnywhere Studio**. Be sure to select the appropriate client platform.

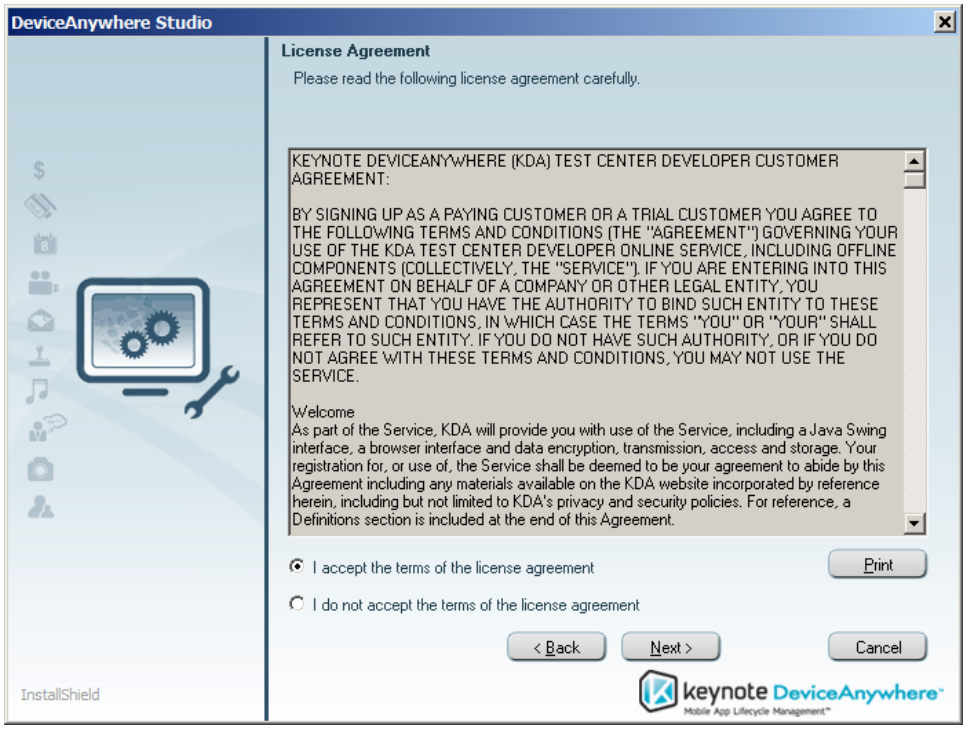



**NOTE** If you wish to launch Studio directly from the Portal by selecting the **Access Devices** link for your TCE environment, you must first download and install Studio.

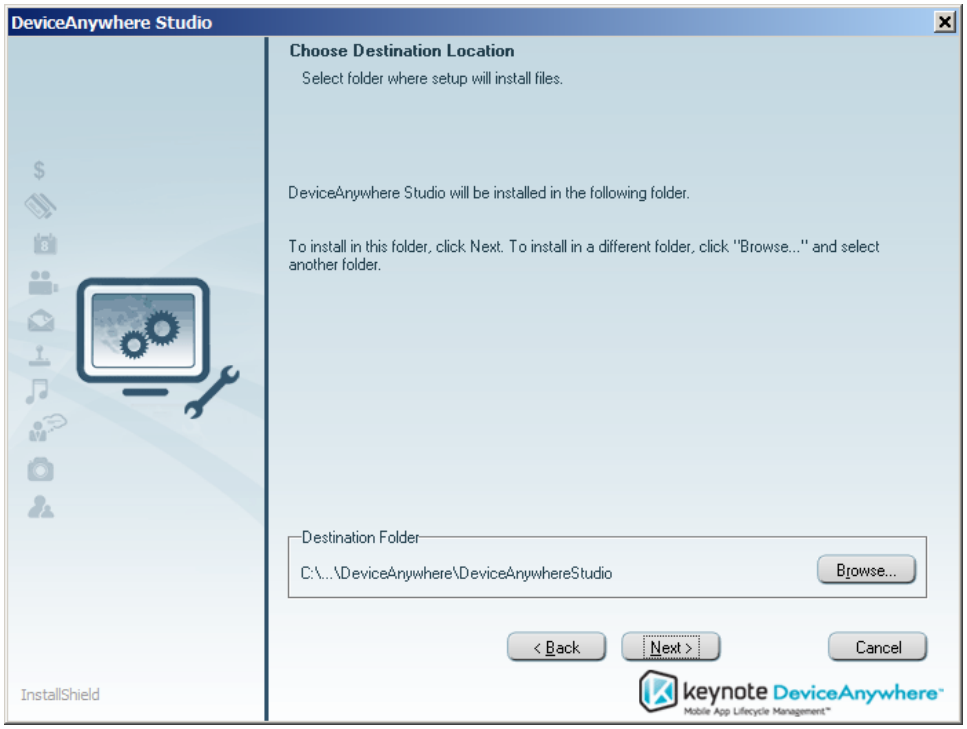
2 From your download directory, double-click the `DeviceAnywhereStudioTCE.exe` installer to execute it.

3 In the setup screen that appears, click **Next**.

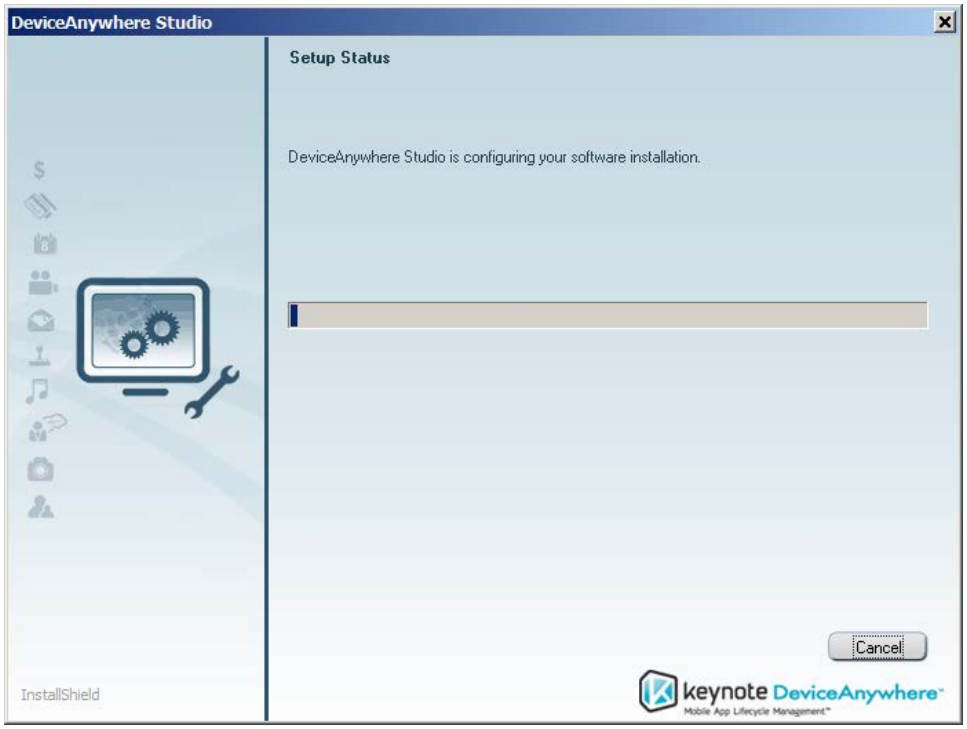

4 Accept the license terms and click **Next**.



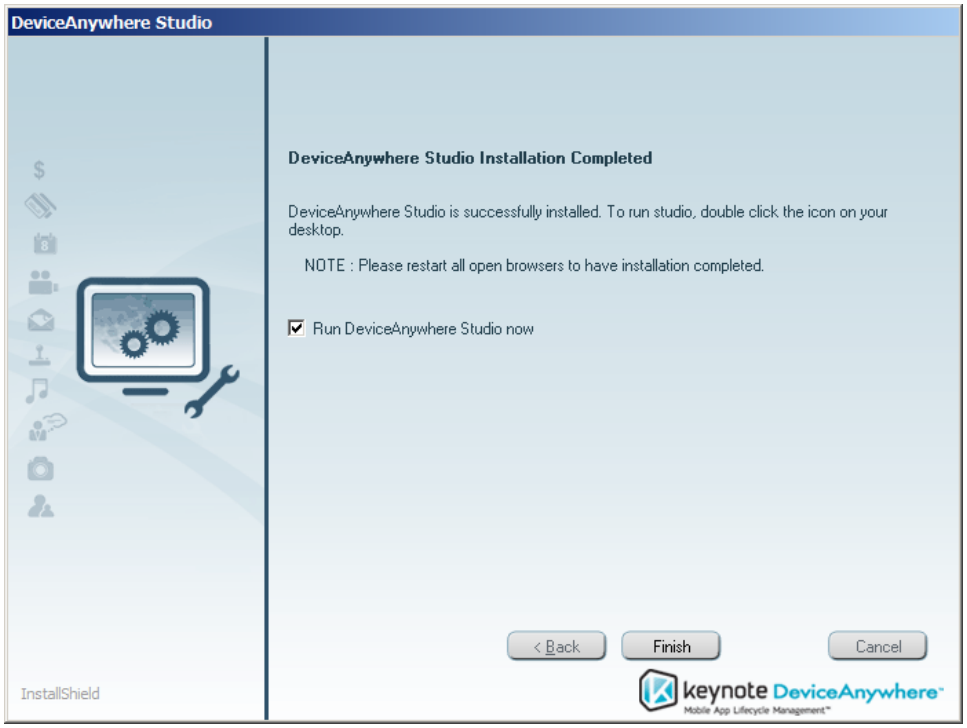
5 Choose an installation location in the local directory for Studio. By default, this folder is `C:\ Program Files\DeviceAnywhere\DeviceAnywhereStudio`. Click **Next**.




The installer displays the progress of the installation.



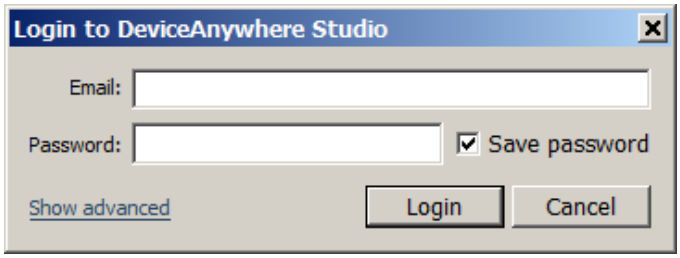
6 Select **Run DeviceAnywhere Studio now** and click **Finish**.



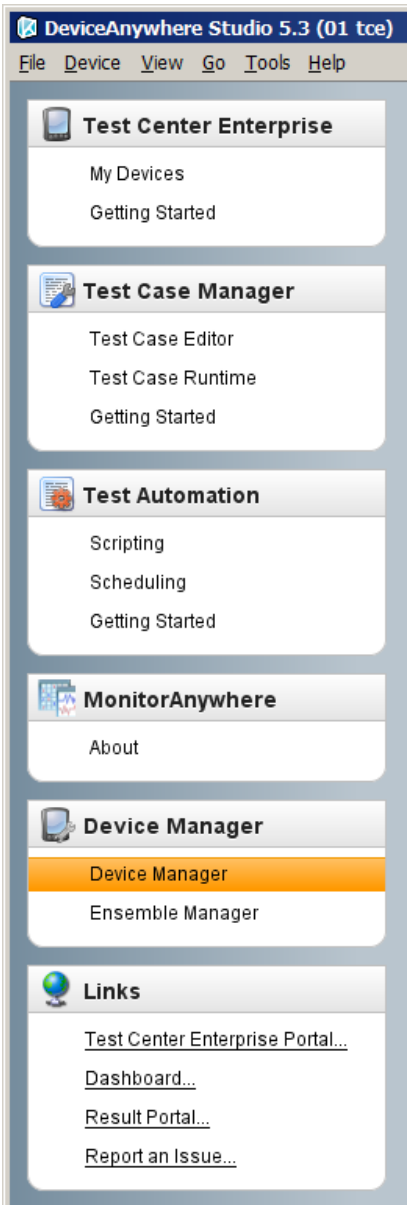

**NOTE** After installing Studio, you will need to relaunch any open browser windows in order to **Access Devices** (launch Studio) directly from the TCE Portal.

This launches Studio. The Studio shortcut  is placed on your desktop.

7 Enter login credentials—these are the same credentials used to access the TCE Portal.




Users with local device access see the Device Manager view in the Studio sidebar when they log in. Local devices are only displayed in this tab after they have been added. They are operational after they have been fully onboarded.



### 2.2.2 Installing Studio on Mac OS X

To install Studio on Mac OS X:

1 Ensure that you have JDK v1.5+ on your client machine.

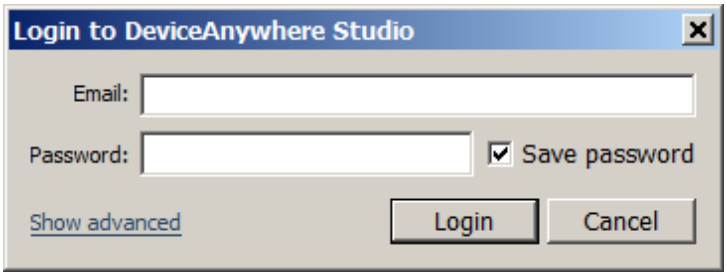
2 Download Studio **For OS X** (`DeviceAnywhereStudio.tgz`) from the TCE Portal.

3 Drag the Studio icon into the **Application** folder on your desktop.

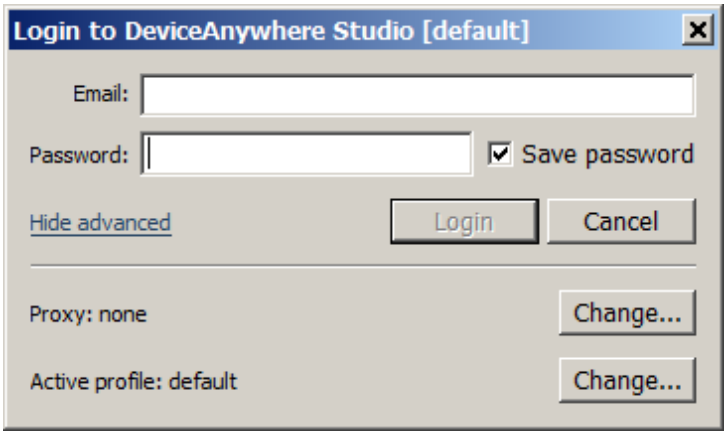
4 Double-click **DeviceAnywhere Studio** in your **Application** folder to launch the program.

5 Before you can log in, you must create a profile for Test Center Enterprise by saving the Access Server information:

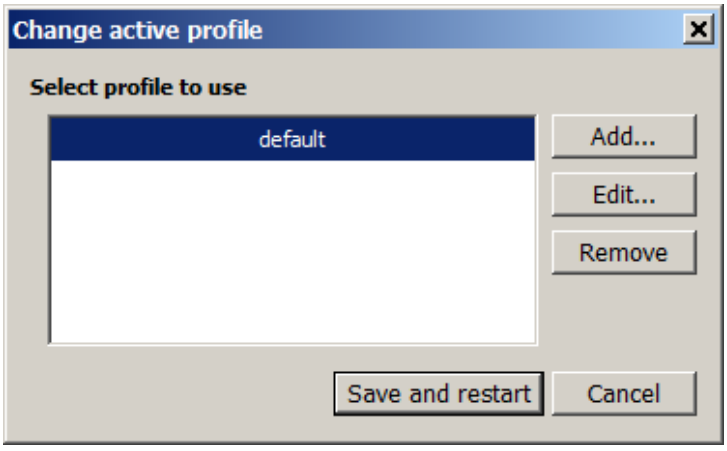
a In the login window, click **Show advanced** to view advanced options.




b Click **Change** next to **Active profile** to enter and save a new profile for TCE.

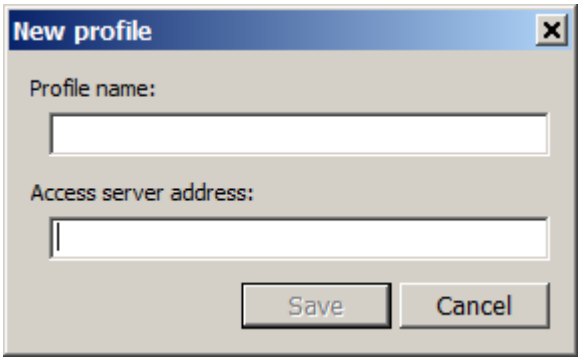



c Click **Add**.

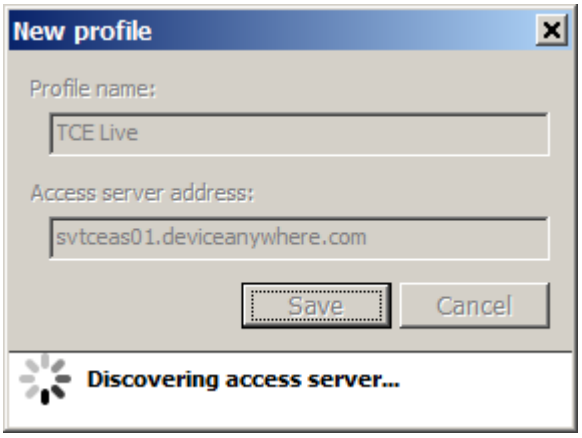


d In the New profile dialog box, enter and **Save** the following information:

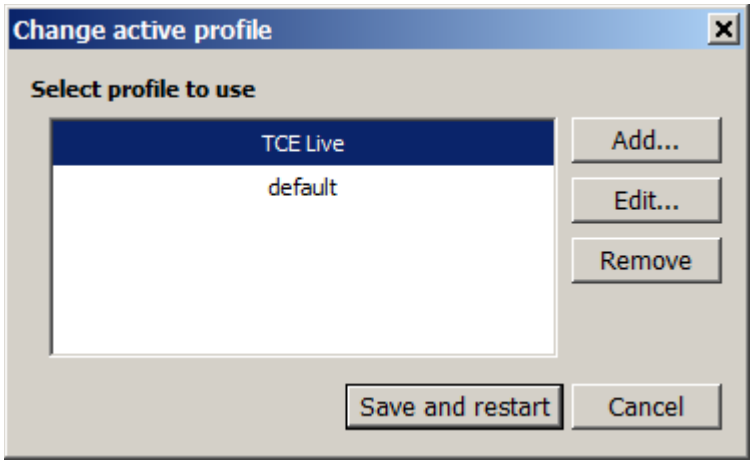
- **Access server address**—**`svtceas01.deviceanywhere.com:443`**
- **Profile name**—enter a name to identify the profile, e.g., `TCE`.




Studio indicates that it is connecting to the TCE Access Server.




e From the list of profiles, select the one you just created and click **Save and restart**.




6 Enter your credentials and log in. These credentials are authenticated against the selected profile—the Access Server IP/port information entered when you created the profile. Studio remembers the last used profile for subsequent logins.

### 2.2.3 Installing Studio on Linux

To install Studio on Linux:

1 Ensure that you have JDK v1.5+ on your client machine.

2 Download Studio **For Linux** (`DeviceAnywhereStudio.dmg`) from the TCE Portal.

3 To un-tar the `DeviceAnywhereStudio.dmg` file, right-click and choose **Extract Here**. This will create a folder with the name `DeviceAnywhereStudio`.

4 From the `DeviceAnywhereStudio` folder, select the `da_studio.sh` file.

5 Double-click to run the file and launch Studio.

6 Create a profile pointing to the TCE Access Server and port, `svtceas01.deviceanywhere.com:443`. Your login credentials will be verified against this profile. Creating a profile for TCE is described in Installing Studio on Mac OS X above.

7 Enter your credentials and log in.

## 2.3 Devices

Your Keynote DeviceAnywhere TAM can provide the list of devices supported for onboarding and controlling locally. You should also receive device profile XML files from Keynote DeviceAnywhere for the devices you wish to use locally. Each XML file contains important device-related information that is essential to using the device in Studio. Before connecting a device, you must copy the XML file to the appropriate Studio directory. You must then onboard the device to the Local Device Server following smartphone platform-specific onboarding instructions found at http://www.keynotedeviceanywhere.com/tce-pvt-devices-documentation.html.