

SAS[®] University Edition: Installation Guide for OS X



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SAS® University Edition: Installation Guide for OS X

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Chapter 1: Requirements

The following requirements are needed to run SAS University Edition:

- The SAS University Edition virtual image downloaded to your local system
- An Apple Macintosh OS X 10.8 or later system
- 64-bit hardware
- One of the following virtualization software programs:
 - VMware Fusion for OS X 6.0. You can download VMware Fusion from https://my.vmware.com/web/vmware/info/slug/desktop_end_user_computing/vmware_fusion/6_0.
Note: The SAS University Edition virtual image is configured to use 1GB of RAM and two processors. You can increase the RAM that is assigned to the SAS University Edition virtual image, but you should assign half (50%) or less of the available physical RAM. You cannot increase the number of processors that are assigned to the SAS University Edition virtual image.
 - Oracle VM VirtualBox for OS X 4.3.12 or later. You can download VirtualBox from <https://www.virtualbox.org/wiki/Downloads>.
- One of the following web browsers:
 - Apple Safari 6.0 or later
 - Mozilla Firefox 21 or later
 - Google Chrome 27 or later

Note: Updating SAS University Edition from Early Adopter (EA) releases is not supported. Download the SAS University Edition virtual image and configure it in either VMware Fusion or Oracle VM VirtualBox.

Chapter 2: Using VMware Fusion

Overview

To set up SAS University Edition:

- 1) Unzip the SAS University Edition compressed file.
- 2) Configure VMware Fusion.
- 3) Start SAS University Edition in VMware Fusion.

Unzip the SAS University Edition File

Find the downloaded SAS University Edition zipped file, and then double-click the file to expand the compressed files to the current location of the zipped file. Wait for the files to be expanded before you continue.

Configure VMware Fusion

You need to configure VMware Fusion in order to create a shared folder for your data that is available to both the SAS University Edition virtual image and to your local system.

To configure VMware Fusion to work with SAS University Edition:

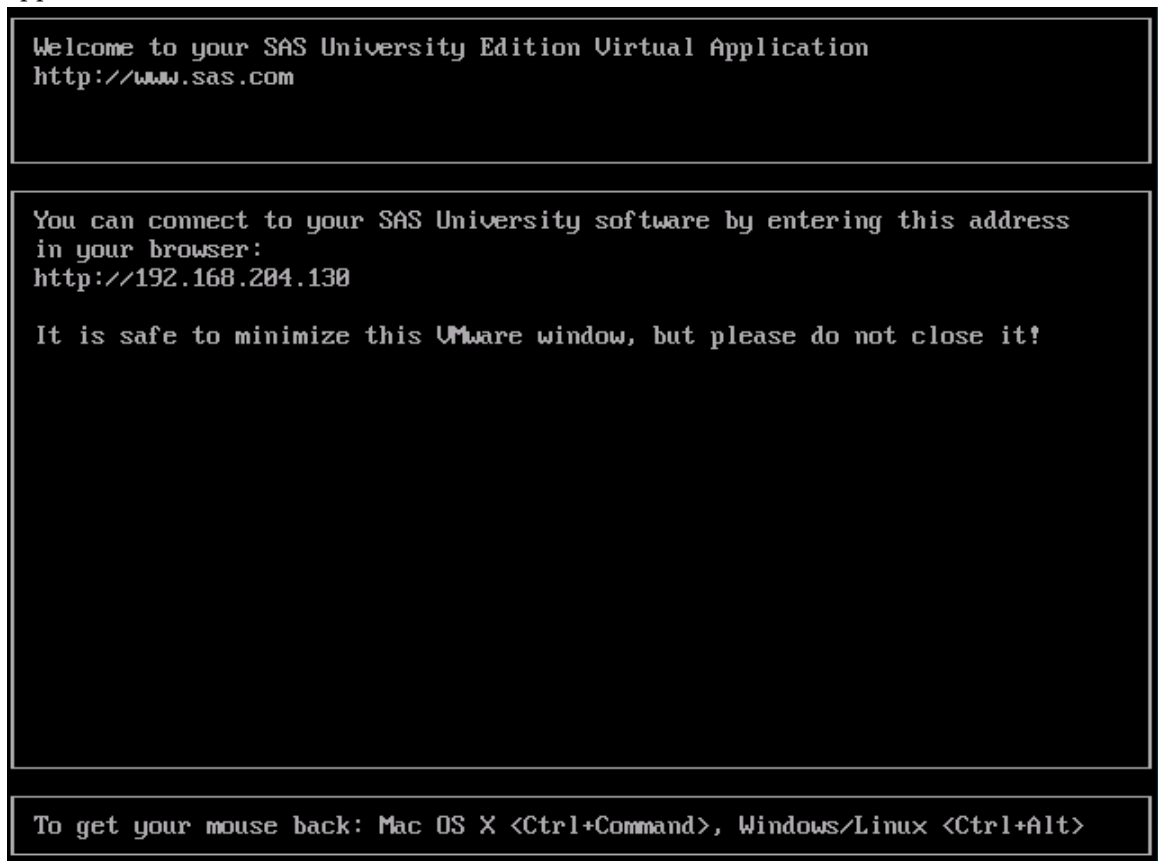
- 1) On your local computer (in a location that you will remember), create a folder called `SASUniversityEdition` and a subfolder called `myfolders`. You will save all of your SAS University Edition files to this location.
- 2) Launch VMware Fusion.
- 3) Select **File > Open**.
A file browser window appears.
- 4) In the file browser window, navigate to the downloaded SAS University Edition virtual image, which ends in `.vmx`.
- 5) Select the SAS University Edition virtual image, and then click **Open**.
- 6) Share a folder from the SAS University Edition virtual image to the local system:
 - a. Select **Virtual Machine > Sharing > Sharing Settings** to open the **University: Sharing** window.
 - b. In the **University: Sharing** window, set the **Sharing Folders** value to **On**.
 - c. In the lower left of the **University: Sharing** window, click **+**. A file browser window appears.
 - d. Select the `myfolders` folder that you created, and then click **Add**. This folder is mapped to the **My Folders** folder in SAS Studio.
Note: The shared folder name is case sensitive.
Note: You can add network folders that you have access permissions to. Do not include a backslash (\) in the network folder name.
- 7) (Optional) Create additional shared folders. Additional shared folders are displayed in SAS Studio under **Folder Shortcuts**.
Note: See Chapter 6: Guidelines for Writing SAS Code for Use with SAS University Edition for requirements of names of shared folders.
- 8) Close the **Settings** window.
- 9) By default, the SAS University Edition virtual image network adapter is set to **NAT**. Confirm that the network adapter is set to **NAT**:

- a. In VMware Fusion, select **Virtual Machine > Settings** to open the **Settings** window.
- b. Click **Network Adapter** to open the **Network Adapter** window.
- c. Click **Share with my Mac**.
- d. Close the **Network Adapter** window.
- e. Close the **Settings** window.

Start SAS University Edition in VMware Fusion

To start SAS University Edition in VMware Fusion:

- 1) In VMware Fusion, select **Virtual Machine > Start Up**.
- 2) Click **Don't upgrade**.
- 3) When the start-up process completes, the SAS University Edition Welcome screen appears:




- 4) Find the text on your Welcome screen that is similar to the following example text:
You can connect to your SAS University software by entering this address in your browser:
`http://192.168.204.130`
Note: Use the Uniform Resource Locator (URL) that is shown on your SAS University Edition Welcome screen. Do not use the example URL `http://192.168.204.130` that is shown here.
- 5) In a web browser, enter the URL that is shown on your Welcome screen, and press **Enter** to open the SAS Information Center.

Welcome



NOTIFICATIONS

 SAS University Edition updates are available.

Update

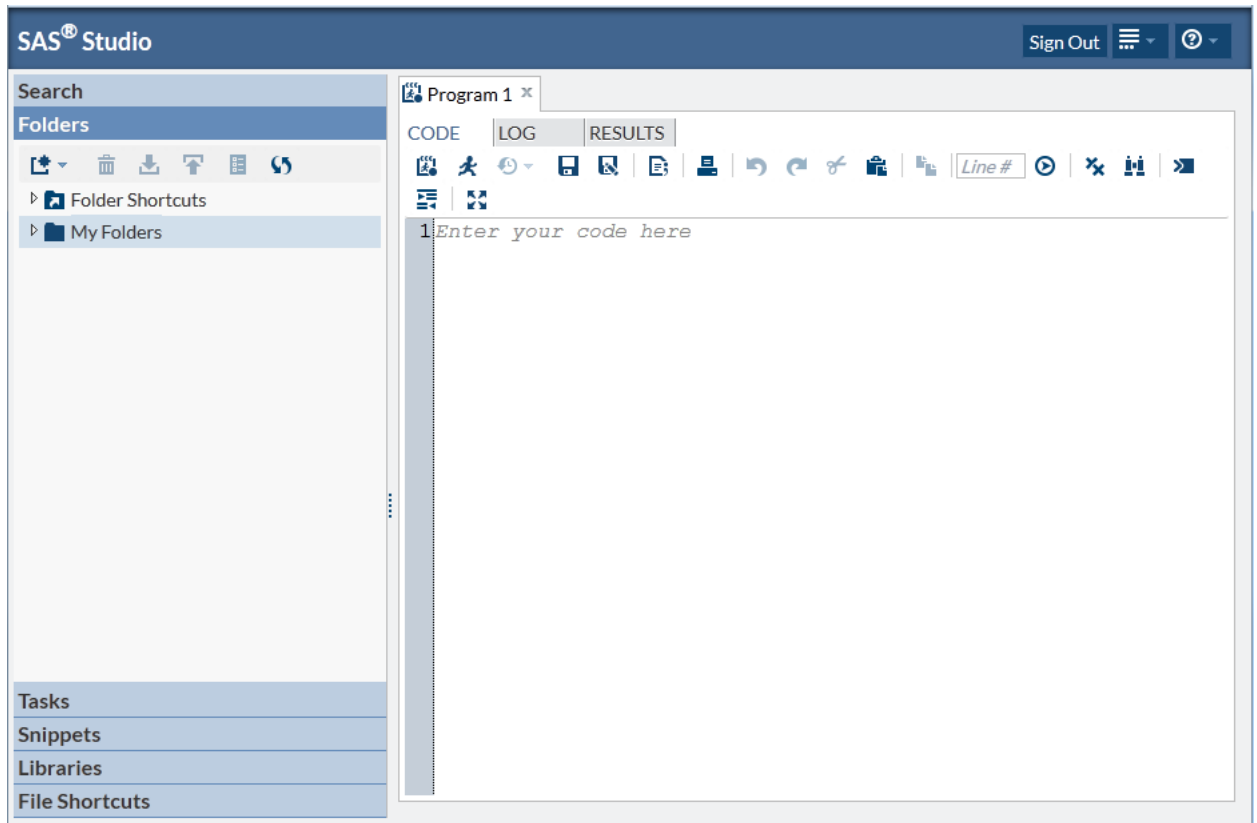
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- 6) Click **Start SAS Studio** to open SAS Studio.



Shut Down SAS University Edition in VMware Fusion

Use VMware Fusion to shut down the SAS University Edition virtual image. Select **Virtual Machine > Shut Down**.

Chapter 3: Using Oracle VM VirtualBox

Overview

To set up SAS University Edition:

- 1) Configure Oracle VM VirtualBox.
- 2) Start SAS University Edition in VirtualBox.

Configure VirtualBox

You need to configure VirtualBox to create a shared folder for your data that is available to both the SAS University Edition virtual image and to your local system.

Note: If you add a shared folder to the SAS University Edition virtual image while the SAS University Edition virtual image is running, you must restart the SAS University Edition virtual image.

To configure VirtualBox to work with SAS University Edition:

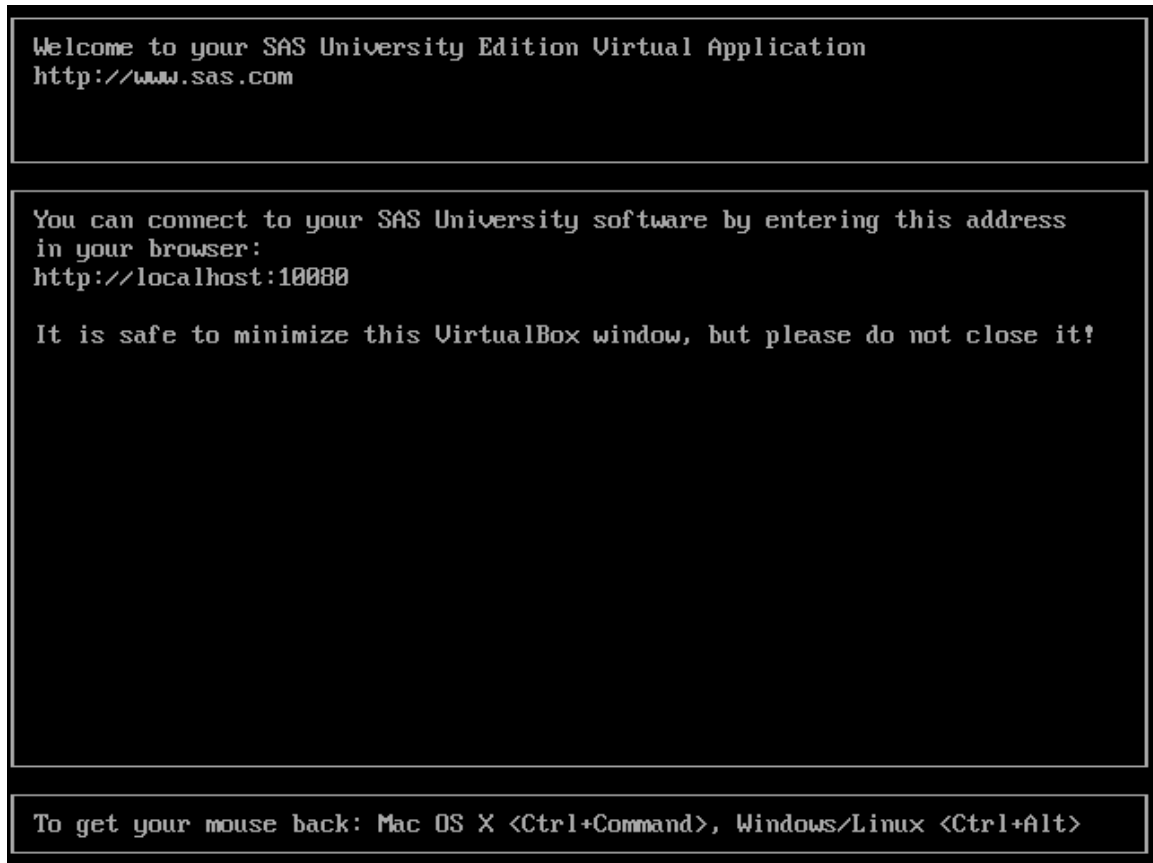
- 1) On your local computer (in a location that you will remember), create a folder called `SASUniversityEdition` and a subfolder called `myfolders`. You will save all of your SAS University Edition files to this location.
- 2) Launch VirtualBox.
- 3) Select **File > Import Appliance**.
- 4) In the **Appliance to import** pane, click the folder icon to the right of the field.
A file browser window appears.
- 5) Select the SAS University Edition `.ova` file.
- 6) Click **Open**.
- 7) Click **Continue**.
- 8) (Optional) In the **Appliance settings** window, edit the CPU and RAM settings.
Note: The SAS University Edition virtual image is configured to use 1GB of RAM and two processors. You can increase the RAM that is assigned to the SAS University Edition virtual image, but you should assign half (50%) or less of the available physical RAM. You cannot increase the number of processors that are assigned to the SAS University Edition virtual image.
- 9) In the **Appliance settings** window, click **Import**. The imported virtual machine is displayed in the **Oracle VM VirtualBox Manager** window.
Note: If the message `drives in use` is displayed, click **Ignore**.
- 10) Select **Machine > Settings**.
- 11) Click **Shared Folders**.
- 12) In the upper right of the window, click **+**. The **Add Share** window appears.
- 13) In the **Folder Path** field, click the arrow and select **Other**.
A file browser window appears.
- 14) Select the `myfolders` folder that you created, and then click **Choose**. This folder is mapped to the **My Folders** folder in SAS Studio.
Note: The shared folder name is case sensitive.
Note: You can add network folders that you have access permissions to. Do not include a backslash (`\`) in the network folder name.
- 15) In the **Add Share** window, confirm that **Read-only** is NOT selected.

- 16) In the **Add Share** window, click **Auto-mount**.
- 17) In the **Add Share** window, click **Make Permanent**, and then click **OK**.
Note: The **Make Permanent** check box might not be present. If it is present, select it. If it is not present, you do not need to do anything.
- 18) (Optional) Create additional shared folders. Additional shared folders are displayed in SAS Studio under **Folder Shortcuts**.
- 19) In the **Settings** window, click **OK**.

Start SAS University Edition in Oracle VM VirtualBox

To start SAS University Edition in VirtualBox:

- 1) In VirtualBox, select **Machine > Start**.
- 2) (Optional) If you are prompted to upgrade, click **Don't upgrade**.
- 3) When the start-up process completes, you the SAS University Edition Welcome screen appears:




- 4) Find the text on your Welcome screen that is similar to the following example:
You can connect to your SAS University software by entering this address in your browser:
`http://localhost:10080`
- 5) In a web browser, enter the URL that is shown on your Welcome screen, and press **Enter** to open the SAS Information Center.

Welcome



NOTIFICATIONS

 SAS University Edition updates are available.

Update

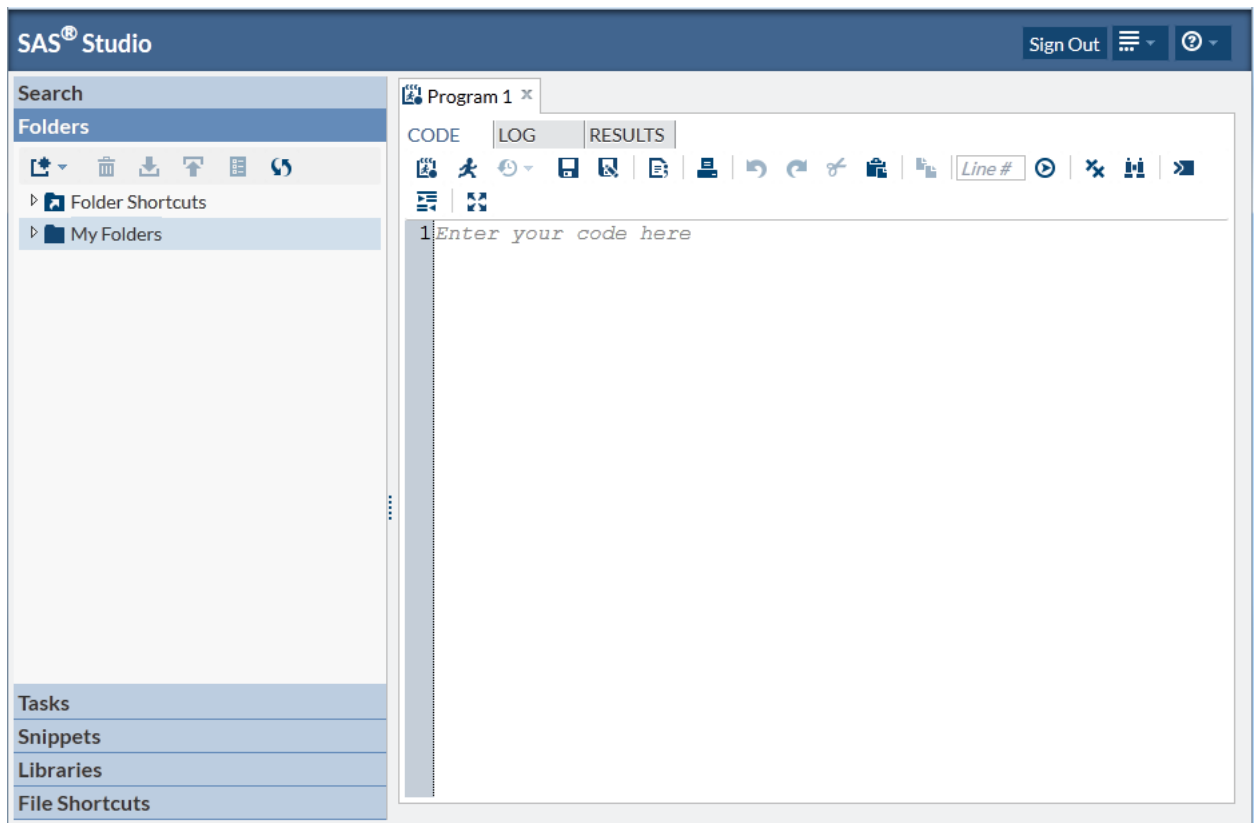
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- 6) Click **Start SAS Studio** to open SAS Studio. The following window appears:



Shut Down SAS University Edition in VirtualBox

To shut down SAS University Edition in Oracle VM VirtualBox:

- 1) In the left column of VirtualBox, click the SAS University Edition virtual image.
- 2) Select **Machine > Close > ACPI Shutdown**.

Chapter 4: Updating SAS University Edition

You must be connected to the Internet in order to update SAS University Edition.

To update SAS University Edition:

- 1) Start SAS University Edition. When the virtual image finishes starting, text similar to the following appears:
You can connect to your SAS University software by entering this address in your browser:
- 2) In a web browser, enter the URL that is shown on your Welcome screen, and press Enter to open the SAS Information Center.



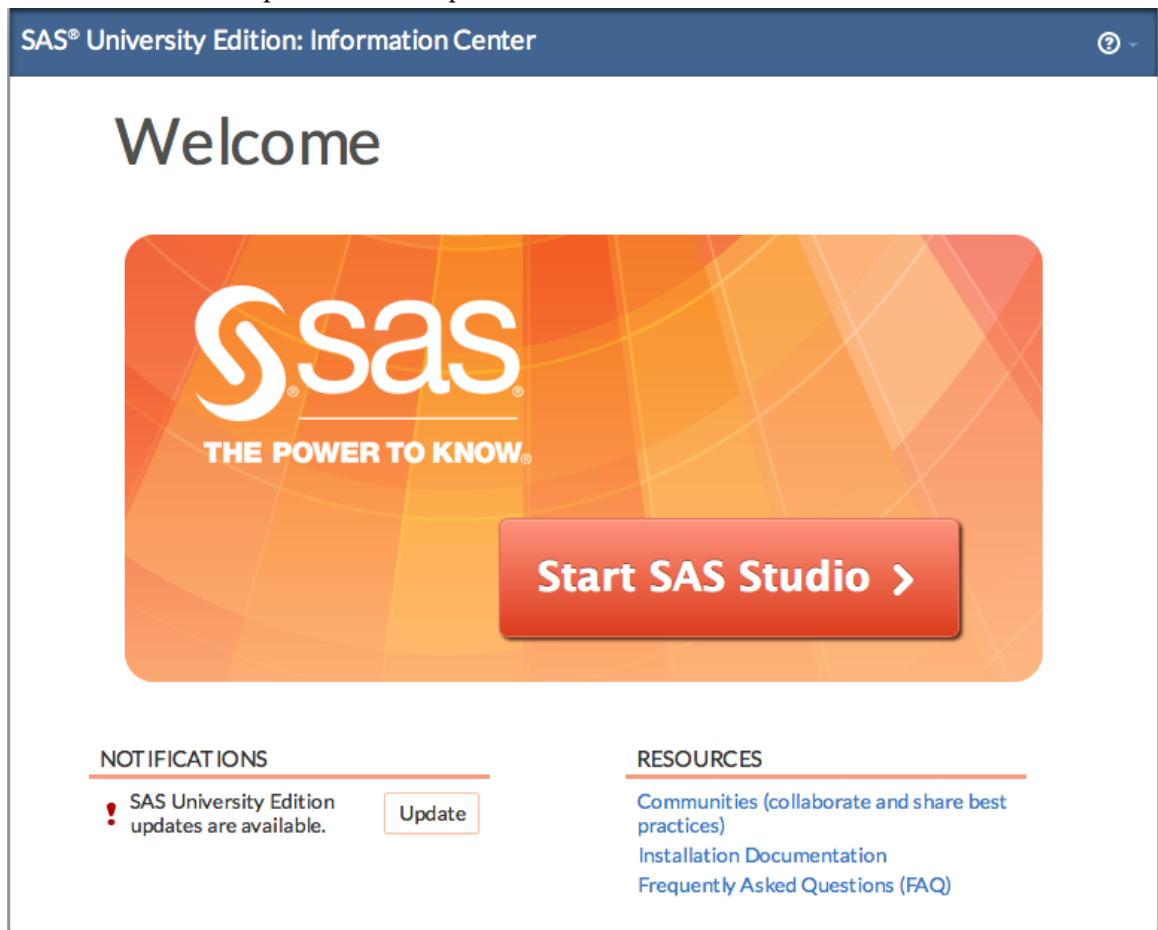
- 3) Click **Update**.
- 4) Click **Yes**.

Chapter 5: Help and Troubleshooting

View the Installation Documentation

To view this document online within SAS University Edition:

- 1) Start SAS University Edition. In a web browser, enter the URL that is shown on your Welcome screen, and press **Enter** to open the SAS Information Center.



- 2) Click **Installation Documentation** to view the installation documentation.

Using DropBox with SAS University Edition

Configure the shared folders for your virtualization software in order to add the Dropbox folder on your local system as a shared folder.

Opening SAS Studio in a Different Browser Window

If you open SAS Studio, open SAS Information Center in a new tab in the same web browser, and then click **Start SAS Studio**, a window appears with the following message:

A SAS Studio session is already running in this browser. Would you like to close it and start a new session?

If you click **Yes**, your SAS Studio session opens in the current browser window. If you click **No**, the window displays the message again. If you do not want to open SAS Studio in the current browser window, close the current browser window.

Files Missing on SAS Studio After the First Shared Folder Is Created

If you start SAS Studio, create a file and save it in the default **My Folders** location in SAS Studio, and then create a shared folder of the default `myfolders` name, the existing SAS Studio **My Folders** is moved to the shared folder.

When the shared folder is created, existing files in the SAS University Edition virtual image's default folder are moved to the shared folder. If there is a name conflict when a file in the University virtual image is copied to the host operating system shared folder, then the file on the host operating system is renamed.

Suppose you create `Program 1` in SAS Studio, and then you create a shared folder in your virtualization software to an existing folder on the host operating system. If the folder on the host OS already contains a file named `Program 1`, then your SAS Studio `Program 1` filename is displayed as `Program 1`. The host operating system's `Program 1` is renamed as `Program 1.~1~`. Additional name collisions of the same file create `Program 1.~2~` and so on.

Starting SAS Studio without a Network Connection Results in a Delay

If there is no network connection when you click **Start SAS Studio**, a long delay occurs before SAS Studio starts.

Running a SAS Program in SAS Studio Fails to Finish

If a SAS program in SAS Studio does not successfully run in a reasonable amount of time, refresh the SAS Studio browser tab and run the program again.

Cannot Import SAS University Edition to VirtualBox

The downloaded SAS University Edition file name must use the file extension `.ova` so that you can import the file to VirtualBox. If you cannot import the downloaded SAS University Edition file to VirtualBox:

- 1) On the OS X desktop, find the downloaded SAS University Edition file.
- 2) If the file name ends with `.ovf`, edit the file name to end in `.ova`.
- 3) In VirtualBox, try to import SAS University Edition again.

For more information, see <https://code.google.com/p/chromium/issues/detail?id=311218>.

Chapter 6: Guidelines for Writing SAS Code for Use with SAS University Edition

SAS University Edition runs as a virtual image inside virtualization software such as VMware Fusion or VirtualBox.

Note: You should store data in the shared folder on your local system. Do not store data in the SAS University Edition virtual image.

Use the following guidelines when you store data on your local system and access your data from SAS University Edition.

There are two categories of shared folders.

- *myfolders* — A special shared folder that maps to **My Folders** in SAS Studio. To save your SAS Studio settings to the host filesystem, you must create this shared folder. Any SAS scripts in **My Folders** in SAS Studio are moved to this shared folder when it is created.
Your SAS Studio settings are stored in the shared folder *myfolders* on the host filesystem. If you detach the shared folder, then SAS Studio is unable to access the settings file and starts with new default settings. Any changes that you made to the SAS Studio settings will not be active until that shared folder is reconnected.
- *<all other shared folders>* — Any other shared folder that is configured appears under SAS Studio's **Folder Shortcuts**. You cannot save SAS Studio settings to these folders.

The following guidelines apply to referencing shared folders and files.

- When you reference files in your shared folder, you should always reference them in the following way:

```
/folders/myfolders/filename
```

Replace *filename* with the name of the file that you are referencing.

- If you create additional shared folders in your virtualization software after the first shared folder, those folders are created in the following locations:

```
/folders/myshortcuts/secondfolder
```

```
/folders/myshortcuts/thirdfolder
```

The names *secondfolder* and *thirdfolder* are replaced with the names of the folders that you created in the virtualization software.

- Always use a forward slash (/) as the directory separator when you reference files in your shared folders, even if your operating system is Windows.

```
/folders/myfolders/foldername (valid)
```

```
\folders\myfolders\foldername (not valid)
```


- File and directory references are case sensitive. For example, the following two paths specify different directories:

```
/folders/myfolders/foldername
```

```
/folders/myfolders/FOLDERNAME
```

The case that you use must match the case of the name that you specified for the shared folder when you defined it in your virtualization software.

- All files that you want to persist between sessions should be stored in the shared folder that you created in the virtual manager:

```
/folders/myfolders/foldername
```

Note: Currently, the virtual image does not stop you from saving to other locations, but those files might not be persisted.

- SASUSER is read-only and is not writeable, as in any SAS server-based environment. The following code example will NOT run successfully:

```
/** Import an XLS file. **/
```

```
PROC IMPORT DATAFILE="cars.xls"  
            OUT=SASUSER.CARSBW
```



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